

# System **pro M compact**<sup>®</sup> and other modular devices for low voltage installation

2CSC400002D0204



**ABB**

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# System pro

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A wide product range suitable for all applications in residential, industrial and commercial installations.

Thanks to the compatibility between the new System pro *M* compact range and the System pro *M* range, ABB offers many additional functionalities like:

- protection and switching
- checking and monitoring
- control and programming.

Shape and dimensions of the new series allow both precise adapting in already existing installations and continuity in

terms of profile and appearance.

Time saving in cross-wiring within groups and combinations of devices is another advantage.

The technologically innovative bidirectional cylinder-lift terminal enables synchronous closing of the front and rear wiring input.

Highest safety standard for the installer thanks to protection against electric shock according to EN 41140.

Marking of devices is reliable and clear.

Both supply and connection with busbars from top or bottom is admitted.

## The System pro *M* compact range

### ■ MCBs:

- new circuit-breakers

### ■ RCDs:

- new residual current circuit-breakers (RCCBs)
- new RCD-blocks
- new residual current circuit-breakers with overcurrent protection (RCBOs)



# M compact

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## ■ Auxiliary elements:

- new universal signal contact switch/auxiliary switch
- new auxiliary switch for circuit-breaker extensions
- new shunt release
- new undervoltage release

## ■ MDRCs-Surge protection devices

## ■ MDRCs-Protection devices

In addition to MCBs and RCDs, ABB supplies other modular devices for protection such as residual current relays and fuse holders.

## ■ MDRCs-Command devices

This category includes devices that are operated manually to command the electric system: contactors, latching relays, switch-isolators, switches, pushbuttons etc. Typically they are installed to control lights from several points of the same circuit or to pilot user devices with a high number of operations.

## ■ MDRCs-Load management devices

Overload relays, load management switches, anti black-out lamps, time switches and the other modular devices in this

category react automatically to variations of parameters and other events in the system to allow for plant optimisation.

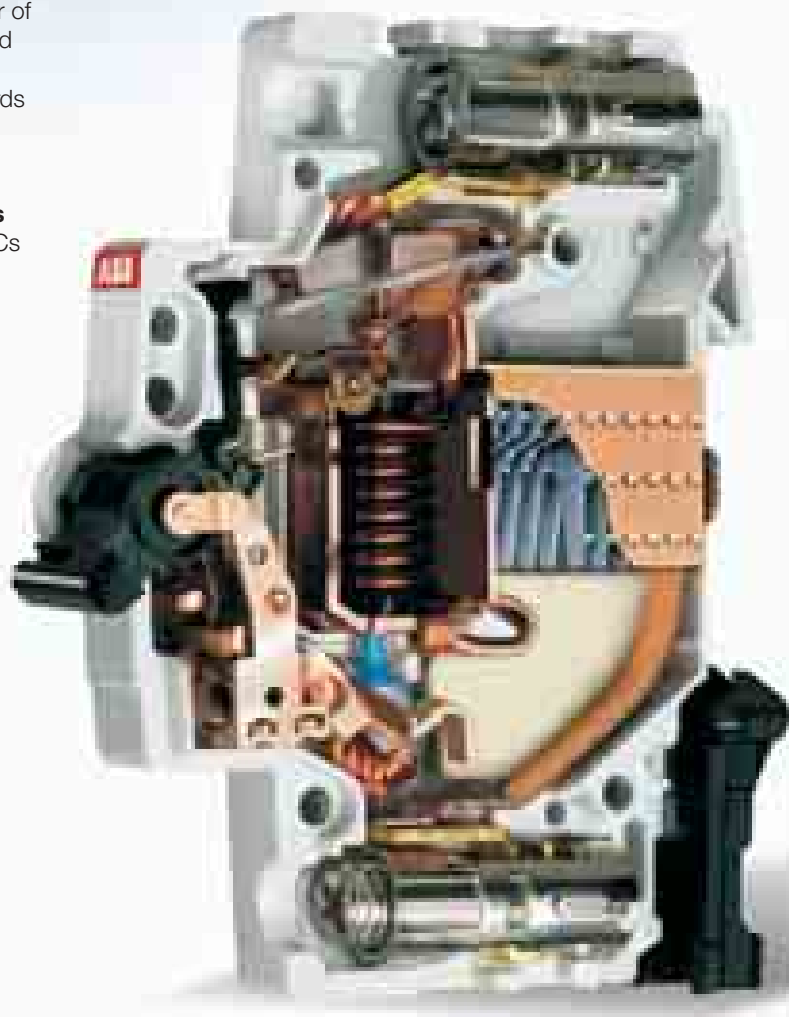
## ■ MDRCs-Measurement devices

The range of devices in this category is very wide, including a great number of auxiliary components and accessories that make installation in switchboards and consumer units practical and economic.

## ■ MDRCs-Other devices

The range of ABB MDRCs also includes bells, transformers etc.

## ■ Various accessories



# System pro

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MCBs are also available with an integrated auxiliary contact (1 NO or 1 NC). Existing installations can be easily upgraded to include auxiliary switch functionality.



Availability of a quite wide range of factory fitted RCBOs.



RCD-blocks DDA 200 2P, 3P, 4P up to 40 A fit into two modules. Versions in 63 A sizes are supplied with two additional terminals for remote tripping.



Universal signal/auxiliary and auxiliary contacts fit on S 200, F 200 and DS 200.



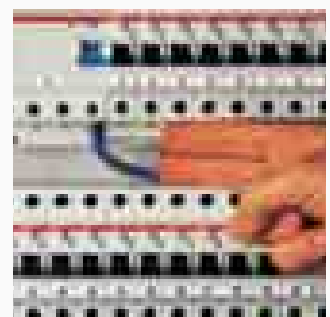
Without busbars two terminal spaces can be used for cables with different cross sections: incoming supply with supplementary terminal up to 50 mm<sup>2</sup> from the front side.



Safe connection between DDA 200 and S 200 thanks to not losable coupling elements, opportunely shaped pins and plastic clamps.

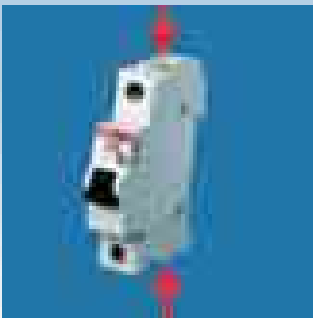


Special quick fastening for an easy removal of the devices from the assembly pressing upwards, both for MCBs S 200 and RCCBs F 200: the only in the market that can be removed without a screwdriver.



More working space between component rows.

# System pro M compact



Supply from top or bottom either with cables or busbars.



Safe terminal technology: the terminals offer protection from misconnection.

New System pro M compact range is compatible with the System pro M range, thanks to the configuration of new vs old terminals.





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NOTE: All the MCBs of S200 series present two values of breaking capacities marked on the product:

on the front  $I_{on}$  according to IEC/EN 60898 on the side  $I_{cu}/I_{cs}$  according to IEC/EN 60947-2

dependig on the rated current.









Value of breaking capacity of S2 K, Z characteristics marked on the front of the MCBs, refers to the standard VDE 0660.



Series		S 200	S 200 M	S 200 P			S 200 U			S 200 UP	S931N	
Characteristics		B,C,D,K,Z	B,C	B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z	K,Z	K,Z	K,Z	K,Z	C	
<b>Rated current</b>	[A]	$0.5 \leq I_n \leq 63$	$0.5 \leq I_n \leq 63$	$0.5 \leq I_n \leq 25$	$32 \leq I_n \leq 40$	$50 \leq I_n \leq 63$	$0.5 \leq I_n \leq 25$	$32 \leq I_n \leq 40$	$50 \leq I_n \leq 63$	$0.2 \leq I_n \leq 25$	$2 \leq I_n \leq 40$	
<b>Breaking capacity</b>	[kA]											
<b>Reference standard</b>	poles Ue[V]											
IEC 23-3/EN 60898	<b>Icn</b> 230/400	6	10	25	15	15					3	
IEC/EN 60947-2	<b>Icu</b> 1, 1P+N	133	20	25	40	25	25	40	25	25	40	6
		230	10	15	25	15	15	25	15	15	25	4.5
Alternate current	2, 3, 4	230	20	25	40	25	25	40	25	25	40	
		400	10	15	25	15	15	25	15	15	25	
	2, 3, 4	500										
		690										
	<b>Ics</b> 1, 1P+N	133	15	18.7	20	18.7	18.7	20	18.7	18.7	20	4.5
		230	7.5	11.2	12.5	11.2	11.2	12.5	11.2	11.2	12.5	3
	2, 3, 4	230	15 ①	18.7	20	18.7	18.7	20	18.7	18.7	20	
		400	7.5	11.2	12.5	11.2	11.2	12.5	11.2	11.2	12.5	
	2, 3, 4	500										
		690										
IEC/EN 60947-2	<b>Icu</b> 1	24	20									
		60	10	10	15	10	10	15	10	10	15	6
Direct current	T=L/R≤5ms for all series, except for S280 UC series and S500 UC series where T=L/R<15ms	220										
		250										
	2	48	20									
		125	10	10	15	10	10	15	10	10	15	6
	440											
		500										
	3,4	750										
	<b>Ics</b> 1	24	20									
		60	10	10	15	10	10	15	10	10	15	6
	220											
		250										
	2	48	20									
		125	10	10	15	10	10	15	10	10	15	6
	440											
		500										
	3,4	750										
UL 1077/ C22.2	<b>Int.</b> 1, 1P+N	120	10	10	10	10						
		277	6									
No 235	<b>cap.</b>	240	10	10	10	10						
		480 Y/277	6									
Alternate current	2, 3, 4	240	10	10	10	10						
		480 Y/277	6									
UL 1077/ C22.2	<b>Int.</b> 1, 1P+N	60	10	10	10	10						
		125	10	10	10	10						
No 235	<b>cap.</b> 2, 3, 4	125	10	10	10	10						
Direct current	UL 489/ C22.2	<b>Int.</b> 1, 1P+N	120					10	10	10	10	
			277									
No 5	<b>cap.</b>	240					10	10	10	10		
		480 Y/277										
Alternate current	2, 3, 4	240					10	10	10	10		
		480 Y/277										

① only up to 40 A; 10 A up to 50/63 A

② only for "D" characteristic

																
<b>S 941N</b>	<b>S 951N</b>	<b>S 971N</b>	<b>S 280</b>	<b>S 280 UC</b>		<b>S 290</b>	<b>S 500</b>			<b>S 500 UC</b>						
B,C	B,C	B,C	B,C	B,C,K,Z		C, D	B,C,D			K adj.						
$2 \leq I_n \leq 40$	$2 \leq I_n \leq 40$	$2 \leq I_n \leq 40$	$80 \leq I_n \leq 100$	$0.5 \leq I_n \leq 40$	$50 \leq I_n \leq 63$	$80 \leq I_n \leq 125$	$6 \leq I_n \leq 63$	$0.1 \leq I_n \leq 11$	$10 \leq I_n \leq 45$	$1.6 \leq I_n \leq 63$	$6 \leq I_n \leq 63$	$0.1 \leq I_n \leq 45$				
4.5	6	10	6			10	25									
10	15	20	15	10	6		100									
6	10	10	6	6	4.5	20 (15) ②	50									
			10	10	6	25	100	50	30							
			6	6	4.5	20 (15) ②	50	50	30	25						
							15	20	15							
							6	6	6							
6	10	15	15	7.5	6		25									
4.5	6	7.5	6	6	4.5	10 (7.5) ②	25									
			10	7.5	6	12.5	25	30	25							
			6	6	4.5	10 (7.5) ②	25	30	25	12.5						
							11	15	11							
							3	3	3							
10	15	15	10			25										
				6	4.5						30	30				
10	15	15	10													
				6	4.5						30	30				
											30	30				
10	15	15	10			12.5										
				6	4.5						30	30				
10	15	15	10													
				6	4.5						30	30				
											30	30				
							14									
							5	14								
							14									
							5	14								
							0.4									
							0.6									

**MCBs** protect installations against overload and short-circuit, warranting reliability and safety for operations.

New System pro *M* compact S 200 series satisfies most common requirements in terms of MCBs, allowing the usage of them for domestic, industrial and commercial applications.

Three series – **S 200**, **S 200 M** and **S 200 P** – with three different breaking capacities up to 25 kA are available, in all characteristics (B, C, D, K and Z) and configurations (1P, 1P+N, 2P, 3P, 3P+N and 4P), in all the sizes up to 63 A.

All these MCBs comply to IEC/EN 60898 and IEC/EN 60947-2 Standards. The range includes also the new **S 200 U** and **S 200 UP** in accordance to UL 489/CSA-C22.2 N 05 Standard.

It is also available the new integrated auxiliary contact on the bottom side which permits to save 50% space.

Thought to be advanced, MCBs range also offers all the “plus” advantages which characterized the whole new System pro *M* compact range.

S 200 series devices obtained a lot of marks and approvals, so they can be used in all world's markets.



# ABB Miniature circuit-breakers S 200 series



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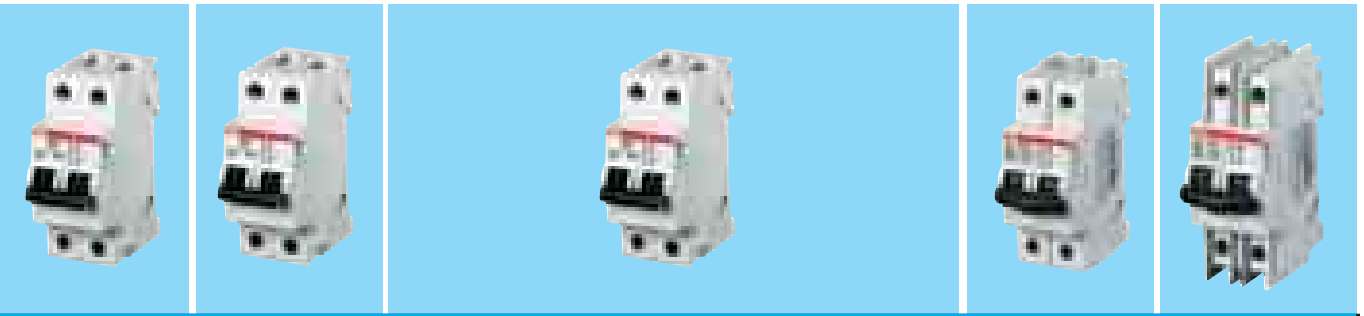
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<b>Selection tables of MCBs S 200 in accordance to UL 489/CSA-C22.2 N 05</b>	
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	Standards			
<b>Electrical features</b>	Rated current $I_n$		A	
	Poles			
	Rated voltage $U_e$	IEC 1P, 1P+N		V
		IEC 2P, 3P, 3P+N, 4P		V
		UL/CSA 1P, 1P+N		V
		UL/CSA 2P, 3P, 3P+N, 4P		V
	Insulation voltage $U_i$		V	
	Max. operating voltage $U_b$ max.	IEC AC		V
		UL/CSA AC		
		IEC/UL/CSA DC 1P		V
		IEC/UL/CSA DC 2P		V
	Min. operating voltage $U_b$ min.		V	
	Rated frequency		Hz	
	Rated breaking capacity acc. to IEC/EN 60898	ultimate $I_{cn}$		A
	Rated breaking capacity acc. to IEC/EN 60947-2 1P, 1P+N @ 230 VAC	ultimate $I_{cu}$		kA
		service $I_{cs}$		kA
	Rated impulse withstand voltage (1.2/50) $U_{imp}$			kV
Dielectric test voltage at ind. freq. for 1 min.			kV	
Overvoltage category				
Pollution degree				
Thermomagnetic release characteristic	B: $3 I_n \leq I_m \leq 5 I_n$			
	C: $5 I_n \leq I_m \leq 10 I_n$			
	D: $10 I_n \leq I_m \leq 20 I_n$			
	K: $10 I_n \leq I_m \leq 14 I_n$			
	Z: $2 I_n \leq I_m \leq 3 I_n$			
<b>Mechanical features</b>	Toggle			
	Electrical life			
	Mechanical life/operations			
	Protection degree/operations	housing terminals		
	Mechanical shock resistance			
	Resistance to vibrations acc. to IEC/EN 60068-2-6			
	Tropicalization acc. to IEC/EN 60068-2	humid heat		°C/RH
		constant climatic conditions		°C/RH
		variable climatic conditions		°C/RH
	Reference temperature for setting of thermal element			°C
Ambient temperature (with daily average $\leq +35$ °C)	IEC ①		°C	
Storage temperature			°C	
<b>Installation</b>	Terminal type			
	Terminal size top/bottom for cable	IEC		mm <sup>2</sup>
		UL/CSA		AWG
	Terminal size top/bottom for busbar	IEC		mm <sup>2</sup>
		UL/CSA		AWG
	Tightening torque	IEC		N*m
		UL/CSA		in-lbs.
	Tool			
Mounting				
Mounting position				
Connection				
<b>Dimensions and weight</b>	Pole dimensions (H x D x W)		mm	
	Pole weight		g	
<b>Combination with auxiliary elements</b>	Combinable with:	auxiliary contact		
		signal contact/auxiliary switch		
		shunt trip		
		undervoltage release		

① supplementary protection

② branch circuit protection

③ for S 200 acc. to UL 1077: -25...+70 °C



**2**

S 200	S 200 M	S 200 P			S 200 U	S 200 UP
IEC / EN 60898, IEC / EN 60947-2, VDE 0641 Part 11, UL 1077 ①, CSA 22.2 No. 235 ①					UL 489 ②, CSA22.2 No.5 ②, IEC/EN 60947-2	
0.5 ≤ In ≤ 63	0.5 ≤ In ≤ 63	0.5 ≤ In ≤ 25	32 ≤ In ≤ 40	50 ≤ In ≤ 63	0.5 ≤ In ≤ 63	0.2 ≤ In ≤ 25
		1P, 1P+N, 2P, 3P, 3P+N, 4P			1P, 2P, 3P, 4P	
120 - 240 - 277 480Y/277			230 - 240 230/400 - 240/415 120 - 240 - 277 480Y/277		120- 240 120- 240	120 - 240 - 277 480Y/277
480Y/277			250 254/440 480Y/277 60VDC 125VDC		240	480Y/277
12VAC - 12VDC					12VAC	
6000	10000	25000	50...60 15000	15000	-	-
10	15	25	20	15	10	10
7.5	11.2	12.5	15	11.2	7.5	7.5
			5 2.8 III 2			
■ ■ ■ ■	■ ■	■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■	■ ■
black sealable in ON-OFF position						
10000 20000 IP4X IP2X						
30 g - 3 shocks - duration 11 ms 5 g - 20 cycles at frequency 5...150...5 Hz with load 0.8 In 28 cycles with 55/95...100 23/83 - 40/93 - 55/20 25/95 - 40/95						
30 (20 for characteristics K,Z)					25	
-25...+55 -40...+70						
failsave bi-directional cylinder-lift terminal (shock protected)						
25/25 18-4 10/10 18-8 2.8 25						
Nr. 2 Pozidriv						
on DIN rail EN 60715 (35 mm) by means of fast clip device						
optional						
from top and bottom						
	125	85 x 68 x 17.5			140	88 x 68 x 17.5   100 x 68 x 17.5
			yes yes yes			
yes					no	

6000

B

2

### S 200 B characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

Applications: residential, commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

I<sub>cn</sub>=6 kA

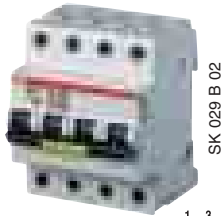
Number of poles	Rated current In A	Order details Type code	Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				EAN				
1	6	S 201-B 6	2CDS 251 001 R0065	46490 1			0.125	10
	10	S 201-B 10	2CDS 251 001 R0105	46380 5			0.125	10
	13	S 201-B 13	2CDS 251 001 R0135	46500 7			0.125	10
	16	S 201-B 16	2CDS 251 001 R1165	57863 9			0.125	10
	20 ①	S 201-B 20	2CDS 251 001 R0205	46510 6			0.125	10
	25	S 201-B 25	2CDS 251 001 R0255	46520 5			0.125	10
	32 ②	S 201-B 32	2CDS 251 001 R0325	46530 4			0.125	10
	40 ③	S 201-B 40	2CDS 251 001 R0405	46540 3			0.125	10
	50	S 201-B 50	2CDS 251 001 R0505	55092 5			0.125	10
	60 V ∴ 63	S 201-B 63	2CDS 251 001 R0635	55093 2			0.125	10
2	6	S 202-B 6	2CDS 252 001 R0065	46640 0			0.250	5
	10	S 202-B 10	2CDS 252 001 R0105	46660 8			0.250	5
	13	S 202-B 13	2CDS 252 001 R0135	46670 7			0.250	5
	16	S 202-B 16	2CDS 252 001 R0165	46690 5			0.250	5
	20	S 202-B 20	2CDS 252 001 R0205	46700 1			0.250	5
	25	S 202-B 25	2CDS 252 001 R0255	46710 0			0.250	5
	32	S 202-B 32	2CDS 252 001 R0325	46720 9			0.250	5
	40	S 202-B 40	2CDS 252 001 R0405	46740 7			0.250	5
	50	S 202-B 50	2CDS 252 001 R0505	55094 9			0.250	5
	125 V ∴ ④ 63	S 202-B 63	2CDS 252 001 R0635	55095 6			0.250	5
3	6	S 203-B 6	2CDS 253 001 R0065	46860 2			0.375	1
	10	S 203-B 10	2CDS 253 001 R0105	46870 1			0.375	1
	13	S 203-B 13	2CDS 253 001 R0135	46890 9			0.375	1
	16	S 203-B 16	2CDS 253 001 R0165	46900 5			0.375	1
	20 ①	S 203-B 20	2CDS 253 001 R0205	46910 4			0.375	1
	25	S 203-B 25	2CDS 253 001 R0255	46920 3			0.375	1
	32 ②	S 203-B 32	2CDS 253 001 R0325	46930 2			0.375	1
	40 ③	S 203-B 40	2CDS 253 001 R0405	46940 1			0.375	1
	50	S 203-B 50	2CDS 253 001 R0505	55096 3			0.375	1
	440 V ∴ 63	S 203-B 63	2CDS 253 001 R0635	55097 0			0.375	1
4	6	S 204-B 6	2CDS 254 001 R0065	52895 5			0.500	1
	10	S 204-B 10	2CDS 254 001 R0105	52896 2			0.500	1
	13	S 204-B 13	2CDS 254 001 R0135	52897 9			0.500	1
	16	S 204-B 16	2CDS 254 001 R0165	52898 6			0.500	1
	20	S 204-B 20	2CDS 254 001 R0205	52899 3			0.500	1
	25	S 204-B 25	2CDS 254 001 R0255	52900 6			0.500	1
	32	S 204-B 32	2CDS 254 001 R0325	52901 3			0.500	1
	40	S 204-B 40	2CDS 254 001 R0405	52902 0			0.500	1
	50	S 204-B 50	2CDS 254 001 R0505	55098 7			0.500	1
	125 V ∴ ④ 63	S 204-B 63	2CDS 254 001 R0635	55099 4			0.500	1

① suitable for flow-type heaters 12 kW  
② suitable for flow-type heaters 18 kW

③ suitable for flow-type heaters 21, 24 and 27 kW  
④ U<sub>Bmax</sub> 125 V ∴ with 2 poles connected in series

**6000**

**B**



With disconnecting neutral NA

Number of poles	Rated current In A	Order details Type code	Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779				
1 + NA	6	<b>S 201-B 6 NA</b>	2CDS 251 103 R0065	<b>53158 0</b>			0.250	5
	10	<b>S 201-B 10 NA</b>	2CDS 251 103 R0105	<b>53159 7</b>			0.250	5
	13	<b>S 201-B 13 NA</b>	2CDS 251 103 R0135	<b>53160 3</b>			0.250	5
	16	<b>S 201-B 16 NA</b>	2CDS 251 103 R0165	<b>53161 0</b>			0.250	5
	20 ①	<b>S 201-B 20 NA</b>	2CDS 251 103 R0205	<b>53162 7</b>			0.250	5
	25	<b>S 201-B 25 NA</b>	2CDS 251 103 R0255	<b>53163 4</b>			0.250	5
	32 ②	<b>S 201-B 32 NA</b>	2CDS 251 103 R0325	<b>53164 1</b>			0.250	5
	40 ③	<b>S 201-B 40 NA</b>	2CDS 251 103 R0405	<b>53165 8</b>			0.250	5
	50	<b>S 201-B 50 NA</b>	2CDS 251 103 R0505	<b>53615 8</b>			0.250	5
	63	<b>S 201-B 63 NA</b>	2CDS 251 103 R0635	<b>53614 1</b>			0.250	5
<b>U<sub>Bmax</sub></b> 440 V ~ 60 V ∴								
3 + NA	6	<b>S 203-B 6 NA</b>	2CDS 253 103 R0065	<b>53228 0</b>			0.500	1
	10	<b>S 203-B 10 NA</b>	2CDS 253 103 R0105	<b>53229 7</b>			0.500	1
	13	<b>S 203-B 13 NA</b>	2CDS 253 103 R0135	<b>53230 3</b>			0.500	1
	16	<b>S 203-B 16 NA</b>	2CDS 253 103 R0165	<b>53231 0</b>			0.500	1
	20 ①	<b>S 203-B 20 NA</b>	2CDS 253 103 R0205	<b>53232 7</b>			0.500	1
	25	<b>S 203-B 25 NA</b>	2CDS 253 103 R0255	<b>53233 4</b>			0.500	1
	32 ②	<b>S 203-B 32 NA</b>	2CDS 253 103 R0325	<b>53234 1</b>			0.500	1
	40 ③	<b>S 203-B 40 NA</b>	2CDS 253 103 R0405	<b>53235 8</b>			0.500	1
	50	<b>S 203-B 50 NA</b>	2CDS 253 103 R0505	<b>53616 5</b>			0.580	1
	63	<b>S 203-B 63 NA</b>	2CDS 253 103 R0635	<b>53617 2</b>			0.580	1
<b>U<sub>Bmax</sub></b> 440 V ~								

① suitable for flow-type heaters 12 kW  
② suitable for flow-type heaters 18 kW

③ suitable for flow-type heaters 21, 24 and 27 kW

**2**



6000

C

2



SK 018 B 01



SK 019 B 01



SK 020 B 01



### S 200 C characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

Applications: residential, commercial and industrial.

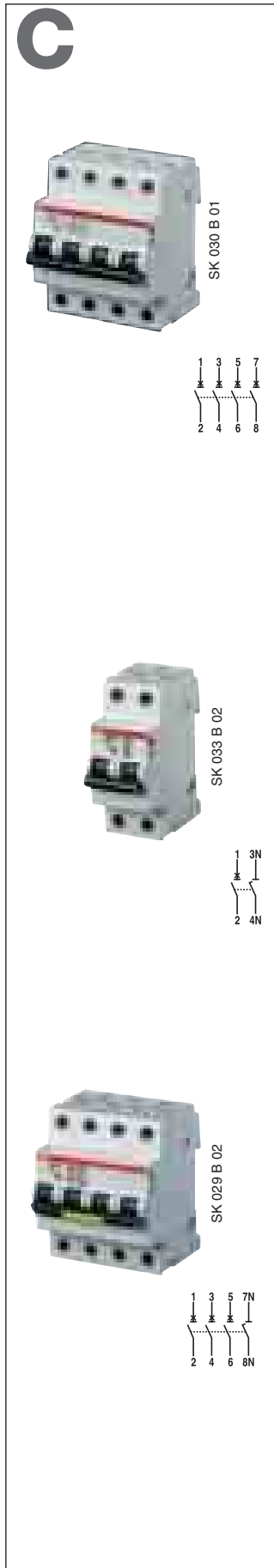
Standard: IEC/EN 60898, IEC/EN 60947-2

I<sub>cn</sub>=6 kA

Number of poles	Rated current In A	Order details Type code	Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				EAN				
1	0.5	S 201-C 0.5	2CDS 251 001 R0984	52329 5			0.125	10
	1	S 201-C 1	2CDS 251 001 R0014	52331 8			0.125	10
	1.6	S 201-C 1.6	2CDS 251 001 R0974	52330 1			0.125	10
	2	S 201-C 2	2CDS 251 001 R0024	52332 5			0.125	10
	3	S 201-C 3	2CDS 251 001 R0034	52333 2			0.125	10
	4	S 201-C 4	2CDS 251 001 R0044	52334 9			0.125	10
	6	S 201-C 6	2CDS 251 001 R0064	46400 0			0.125	10
	8	S 201-C 8	2CDS 251 001 R0084	46410 9			0.125	10
	10	S 201-C 10	2CDS 251 001 R0104	46420 8			0.125	10
	13	S 201-C 13	2CDS 251 001 R0134	46430 7			0.125	10
	16	S 201-C 16	2CDS 251 001 R0164	46440 6			0.125	10
	20 ①	S 201-C 20	2CDS 251 001 R0204	46450 5			0.125	10
	25	S 201-C 25	2CDS 251 001 R0254	46460 4			0.125	10
	32 ②	S 201-C 32	2CDS 251 001 R0324	46470 3			0.125	10
	40 ③	S 201-C 40	2CDS 251 001 R0404	46480 2			0.125	10
	50	S 201-C 50	2CDS 251 001 R0504	55100 7			0.125	10
60 V ... 63	S 201-C 63	2CDS 251 001 R0634	55101 4			0.125	10	
2	0.5	S 202-C 0.5	2CDS 252 001 R0984	52335 6			0.250	5
	1	S 202-C 1	2CDS 252 001 R0014	52336 3			0.250	5
	1.6	S 202-C 1.6	2CDS 252 001 R0974	52337 0			0.250	5
	2	S 202-C 2	2CDS 252 001 R0024	52338 7			0.250	5
	3	S 202-C 3	2CDS 252 001 R0034	52339 4			0.250	5
	4	S 202-C 4	2CDS 252 001 R0044	52340 0			0.250	5
	6	S 202-C 6	2CDS 252 001 R0064	46550 2			0.250	5
	8	S 202-C 8	2CDS 252 001 R0084	46560 1			0.250	5
	10	S 202-C 10	2CDS 252 001 R0104	46570 0			0.250	5
	13	S 202-C 13	2CDS 252 001 R0134	46580 9			0.250	5
	16	S 202-C 16	2CDS 252 001 R0164	46590 8			0.250	5
	20	S 202-C 20	2CDS 252 001 R0204	46600 4			0.250	5
	25	S 202-C 25	2CDS 252 001 R0254	46610 3			0.250	5
	32	S 202-C 32	2CDS 252 001 R0324	46620 2			0.250	5
	40	S 202-C 40	2CDS 252 001 R0404	46630 1			0.250	5
	50	S 202-C 50	2CDS 252 001 R0504	55104 5			0.250	5
④ 63	S 202-C 63	2CDS 252 001 R0634	55105 2			0.250	5	
3	0.5	S 203-C 0.5	2CDS 253 001 R0984	52341 7			0.375	1
	1	S 203-C 1	2CDS 253 001 R0014	52342 4			0.375	1
	1.6	S 203-C 1.6	2CDS 253 001 R0974	52343 1			0.375	1
	2	S 203-C 2	2CDS 253 001 R0024	52344 8			0.375	1
	3	S 203-C 3	2CDS 253 001 R0034	52345 5			0.375	1
	4	S 203-C 4	2CDS 253 001 R0044	52346 2			0.375	1
	6	S 203-C 6	2CDS 253 001 R0064	46750 6			0.375	1
	8	S 203-C 8	2CDS 253 001 R0084	46760 5			0.375	1
	10	S 203-C 10	2CDS 253 001 R0104	46780 3			0.375	1
	13	S 203-C 13	2CDS 253 001 R0134	46790 2			0.375	1
	16	S 203-C 16	2CDS 253 001 R0164	46800 8			0.375	1
	20 ①	S 203-C 20	2CDS 253 001 R0204	46810 7			0.375	1
	25	S 203-C 25	2CDS 253 001 R0254	46820 6			0.375	1
	32 ②	S 203-C 32	2CDS 253 001 R0324	46830 5			0.375	1
	40 ③	S 203-C 40	2CDS 253 001 R0404	46840 4			0.375	1
	50	S 203-C 50	2CDS 253 001 R0504	55106 9			0.375	1
U <sub>Bmax</sub> 440 V ~ 63	S 203-C 63	2CDS 253 001 R0634	55107 6			0.375	1	

**6000**

**2**



4	0.5	<b>S 204-C</b>	<b>0.5</b>	2CDS 254 001 R0984	<b>52911 2</b>	0.500	1
	1	<b>S 204-C</b>	<b>1</b>	2CDS 254 001 R0014	<b>52912 9</b>	0.500	1
	1.6	<b>S 204-C</b>	<b>1.6</b>	2CDS 254 001 R0974	<b>52913 6</b>	0.500	1
	2	<b>S 204-C</b>	<b>2</b>	2CDS 254 001 R0024	<b>52914 3</b>	0.500	1
	3	<b>S 204-C</b>	<b>3</b>	2CDS 254 001 R0034	<b>52915 0</b>	0.500	1
	4	<b>S 204-C</b>	<b>4</b>	2CDS 254 001 R0044	<b>52916 7</b>	0.500	1
	6	<b>S 204-C</b>	<b>6</b>	2CDS 254 001 R0064	<b>52917 4</b>	0.500	1
	8	<b>S 204-C</b>	<b>8</b>	2CDS 254 001 R0084	<b>52918 1</b>	0.500	1
	10	<b>S 204-C</b>	<b>10</b>	2CDS 254 001 R0104	<b>52919 8</b>	0.500	1
	13	<b>S 204-C</b>	<b>13</b>	2CDS 254 001 R0134	<b>52920 4</b>	0.500	1
	16	<b>S 204-C</b>	<b>16</b>	2CDS 254 001 R0164	<b>52921 1</b>	0.500	1
	20	<b>S 204-C</b>	<b>20</b>	2CDS 254 001 R0204	<b>52922 8</b>	0.500	1
	25	<b>S 204-C</b>	<b>25</b>	2CDS 254 001 R0254	<b>52923 5</b>	0.500	1
	32	<b>S 204-C</b>	<b>32</b>	2CDS 254 001 R0324	<b>52924 2</b>	0.500	1
40	<b>S 204-C</b>	<b>40</b>	2CDS 254 001 R0404	<b>52925 9</b>	0.500	1	
50	<b>S 204-C</b>	<b>50</b>	2CDS 254 001 R0504	<b>55110 6</b>	0.500	1	
④	63	<b>S 204-C</b>	<b>63</b>	2CDS 254 001 R0634	<b>55111 3</b>	0.500	1

U<sub>Bmax</sub>  
440 V ~  
125 V ∴

- ① suitable for flow-type heaters 12 kW      ③ suitable for flow-type heaters 21, 24 and 27 kW  
 ② suitable for flow-type heaters 18 kW      ④ U<sub>Bmax</sub> 125 V ∴ with 2 poles connected in series

**With disconnecting neutral NA**

Number of poles	Rated current In A	Order details		Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code			EAN				
1 + NA	0.5	<b>S 201-C</b>	<b>0.5 NA</b>	2CDS 251 103 R0984	<b>53166 5</b>			0.250	5
	1	<b>S 201-C</b>	<b>1 NA</b>	2CDS 251 103 R0014	<b>53167 2</b>			0.250	5
	1.6	<b>S 201-C</b>	<b>1.6 NA</b>	2CDS 251 103 R0974	<b>53168 9</b>			0.250	5
	2	<b>S 201-C</b>	<b>2 NA</b>	2CDS 251 103 R0024	<b>53169 6</b>			0.250	5
	3	<b>S 201-C</b>	<b>3 NA</b>	2CDS 251 103 R0034	<b>53170 2</b>			0.250	5
	4	<b>S 201-C</b>	<b>4 NA</b>	2CDS 251 103 R0044	<b>53172 6</b>			0.250	5
	6	<b>S 201-C</b>	<b>6 NA</b>	2CDS 251 103 R0064	<b>53173 3</b>			0.250	5
	8	<b>S 201-C</b>	<b>8 NA</b>	2CDS 251 103 R0084	<b>53174 0</b>			0.250	5
	10	<b>S 201-C</b>	<b>10 NA</b>	2CDS 251 103 R0104	<b>53175 7</b>			0.250	5
	13	<b>S 201-C</b>	<b>13 NA</b>	2CDS 251 103 R0134	<b>53176 4</b>			0.250	5
	16	<b>S 201-C</b>	<b>16 NA</b>	2CDS 251 103 R0164	<b>53177 1</b>			0.250	5
	20 ①	<b>S 201-C</b>	<b>20 NA</b>	2CDS 251 103 R0204	<b>53178 8</b>			0.250	5
	25	<b>S 201-C</b>	<b>25 NA</b>	2CDS 251 103 R0254	<b>53179 5</b>			0.250	5
	32 ②	<b>S 201-C</b>	<b>32 NA</b>	2CDS 251 103 R0324	<b>53180 1</b>			0.250	5
40 ③	<b>S 201-C</b>	<b>40 NA</b>	2CDS 251 103 R0404	<b>53181 8</b>			0.250	5	
50	<b>S 201-C</b>	<b>50 NA</b>	2CDS 251 103 R0504	<b>55102 1</b>			0.290	5	
63	<b>S 201-C</b>	<b>63 NA</b>	2CDS 251 103 R0634	<b>55103 8</b>			0.290	5	

U<sub>Bmax</sub>  
440 V ~  
60 V ∴

3 + NA	0.5	<b>S 203-C</b>	<b>0.5 NA</b>	2CDS 253 103 R0984	<b>53236 5</b>			0.500	1
	1	<b>S 203-C</b>	<b>1 NA</b>	2CDS 253 103 R0014	<b>53237 2</b>			0.500	1
	1.6	<b>S 203-C</b>	<b>1.6 NA</b>	2CDS 253 103 R0974	<b>53238 9</b>			0.500	1
	2	<b>S 203-C</b>	<b>2 NA</b>	2CDS 253 103 R0024	<b>53240 2</b>			0.500	1
	3	<b>S 203-C</b>	<b>3 NA</b>	2CDS 253 103 R0034	<b>53241 9</b>			0.500	1
	4	<b>S 203-C</b>	<b>4 NA</b>	2CDS 253 103 R0044	<b>53242 6</b>			0.500	1
	6	<b>S 203-C</b>	<b>6 NA</b>	2CDS 253 103 R0064	<b>53243 3</b>			0.500	1
	8	<b>S 203-C</b>	<b>8 NA</b>	2CDS 253 103 R0084	<b>53244 0</b>			0.500	1
	10	<b>S 203-C</b>	<b>10 NA</b>	2CDS 253 103 R0104	<b>53245 7</b>			0.500	1
	13	<b>S 203-C</b>	<b>13 NA</b>	2CDS 253 103 R0134	<b>53246 4</b>			0.500	1
	16	<b>S 203-C</b>	<b>16 NA</b>	2CDS 253 103 R0164	<b>53247 1</b>			0.500	1
	20 ①	<b>S 203-C</b>	<b>20 NA</b>	2CDS 253 103 R0204	<b>53248 8</b>			0.500	1
	25	<b>S 203-C</b>	<b>25 NA</b>	2CDS 253 103 R0254	<b>53249 5</b>			0.500	1
	32 ②	<b>S 203-C</b>	<b>32 NA</b>	2CDS 253 103 R0324	<b>53250 1</b>			0.500	1
40 ③	<b>S 203-C</b>	<b>40 NA</b>	2CDS 253 103 R0404	<b>53251 8</b>			0.500	1	
50	<b>S 203-C</b>	<b>50 NA</b>	2CDS 253 103 R0504	<b>55108 3</b>			0.580	1	
63	<b>S 203-C</b>	<b>63 NA</b>	2CDS 253 103 R0634	<b>55109 0</b>			0.580	1	

U<sub>Bmax</sub>  
440 V ~

- ① suitable for flow-type heaters 12 kW      ③ suitable for flow-type heaters 21, 24 and 27 kW  
 ② suitable for flow-type heaters 18 kW

D

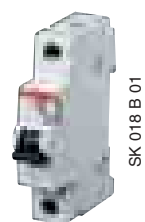
S 200 D characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for circuits which supply loads with high inrush current at the circuit closing (LV/LV transformers, breakdown lamps).

Applications: residential, commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

I<sub>cn</sub>=6 kA



SK 018 B 01



SK 019 B 01



SK 020 B 019



Number of poles	Rated current In A	Order details		Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	0.5	S 201-D 0.5	2CDS 251 001 R0981	52993 8			0.125	10
	1	S 201-D 1	2CDS 251 001 R0011	52994 5			0.125	10
	1.6	S 201-D 1.6	2CDS 251 001 R0971	52995 2			0.125	10
	2	S 201-D 2	2CDS 251 001 R0021	52996 9			0.125	10
	3	S 201-D 3	2CDS 251 001 R0031	52997 6			0.125	10
	4	S 201-D 4	2CDS 251 001 R0041	52998 3			0.125	10
	6	S 201-D 6	2CDS 251 001 R0061	52999 0			0.125	10
	8	S 201-D 8	2CDS 251 001 R0081	53000 2			0.125	10
	10	S 201-D 10	2CDS 251 001 R0101	53001 9			0.125	10
	13	S 201-D 13	2CDS 251 001 R0131	53002 6			0.125	10
	16	S 201-D 16	2CDS 251 001 R0161	53003 3			0.125	10
	20 ①	S 201-D 20	2CDS 251 001 R0201	53004 0			0.125	10
	25	S 201-D 25	2CDS 251 001 R0251	53005 7			0.125	10
	32 ②	S 201-D 32	2CDS 251 001 R0321	53006 4			0.125	10
	40 ③	S 201-D 40	2CDS 251 001 R0401	53007 1			0.125	10
	50	S 201-D 50	2CDS 251 001 R0501	55199 1			0.125	10
63	S 201-D 63	2CDS 251 001 R0631	55200 4			0.125	10	
2	0.5	S 202-D 0.5	2CDS 252 001 R0981	53048 4			0.250	5
	1	S 202-D 1	2CDS 252 001 R0011	53049 1			0.250	5
	1.6	S 202-D 1.6	2CDS 252 001 R0971	53050 7			0.250	5
	2	S 202-D 2	2CDS 252 001 R0021	53051 4			0.250	5
	3	S 202-D 3	2CDS 252 001 R0031	53052 1			0.250	5
	4	S 202-D 4	2CDS 252 001 R0041	53053 8			0.250	5
	6	S 202-D 6	2CDS 252 001 R0061	53054 5			0.250	5
	8	S 202-D 8	2CDS 252 001 R0081	53055 2			0.250	5
	10	S 202-D 10	2CDS 252 001 R0101	53058 3			0.250	5
	13	S 202-D 13	2CDS 252 001 R0131	53060 6			0.250	5
	16	S 202-D 16	2CDS 252 001 R0161	53061 3			0.250	5
	20	S 202-D 20	2CDS 252 001 R0201	53063 7			0.250	5
	25	S 202-D 25	2CDS 252 001 R0251	53064 4			0.250	5
	32	S 202-D 32	2CDS 252 001 R0321	53065 1			0.250	5
	40	S 202-D 40	2CDS 252 001 R0401	53066 8			0.250	5
	50	S 202-D 50	2CDS 252 001 R0501	55203 5			0.250	5
④ 63	S 202-D 63	2CDS 252 001 R0631	55204 2			0.250	5	
3	0.5	S 203-D 0.5	2CDS 253 001 R0981	53081 1			0.375	1
	1	S 203-D 1	2CDS 253 001 R0011	53082 8			0.375	1
	1.6	S 203-D 1.6	2CDS 253 001 R0971	53083 5			0.375	1
	2	S 203-D 2	2CDS 253 001 R0021	53084 2			0.375	1
	3	S 203-D 3	2CDS 253 001 R0031	53085 9			0.375	1
	4	S 203-D 4	2CDS 253 001 R0041	53086 6			0.375	1
	6	S 203-D 6	2CDS 253 001 R0061	53088 0			0.375	1
	8	S 203-D 8	2CDS 253 001 R0081	53089 7			0.375	1
	10	S 203-D 10	2CDS 253 001 R0101	53090 3			0.375	1
	13	S 203-D 13	2CDS 253 001 R0131	53091 0			0.375	1
	16	S 203-D 16	2CDS 253 001 R0161	53092 7			0.375	1
	20 ①	S 203-D 20	2CDS 253 001 R0201	53093 4			0.375	1
	25	S 203-D 25	2CDS 253 001 R0251	53094 1			0.375	1
	32 ②	S 203-D 32	2CDS 253 001 R0321	53095 8			0.375	1
	40 ③	S 203-D 40	2CDS 253 001 R0401	53096 5			0.375	1
	50	S 203-D 50	2CDS 253 001 R0501	55205 9			0.375	1
63	S 203-D 63	2CDS 253 001 R0631	55206 6			0.375	1	

U<sub>Bmax</sub>  
440 V ~  
60 V ∴

U<sub>Bmax</sub>  
440 V ~  
125 V ∴

U<sub>Bmax</sub>  
440 V ~

6000

2

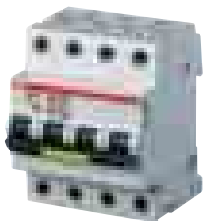
D



SK 030 B 01



SK 033 B 02



SK 029 B 02



4	0.5	<b>S 204-D 0.5</b>	2CDS 254 001 R0981	<b>53112 2</b>	0.500	1
	1	<b>S 204-D 1</b>	2CDS 254 001 R0011	<b>53113 9</b>	0.500	1
	1.6	<b>S 204-D 1.6</b>	2CDS 254 001 R0971	<b>53114 6</b>	0.500	1
	2	<b>S 204-D 2</b>	2CDS 254 001 R0021	<b>53115 3</b>	0.500	1
	3	<b>S 204-D 3</b>	2CDS 254 001 R0031	<b>53116 0</b>	0.500	1
	4	<b>S 204-D 4</b>	2CDS 254 001 R0041	<b>53117 7</b>	0.500	1
	6	<b>S 204-D 6</b>	2CDS 254 001 R0061	<b>53118 4</b>	0.500	1
	8	<b>S 204-D 8</b>	2CDS 254 001 R0081	<b>53119 1</b>	0.500	1
	10	<b>S 204-D 10</b>	2CDS 254 001 R0101	<b>53120 7</b>	0.500	1
	13	<b>S 204-D 13</b>	2CDS 254 001 R0131	<b>53121 4</b>	0.500	1
	16	<b>S 204-D 16</b>	2CDS 254 001 R0161	<b>53122 1</b>	0.500	1
	20	<b>S 204-D 20</b>	2CDS 254 001 R0201	<b>53123 8</b>	0.500	1
	25	<b>S 204-D 25</b>	2CDS 254 001 R0251	<b>53129 0</b>	0.500	1
	32	<b>S 204-D 32</b>	2CDS 254 001 R0321	<b>53130 6</b>	0.500	1
	40	<b>S 204-D 40</b>	2CDS 254 001 R0401	<b>53131 3</b>	0.500	1
	50	<b>S 204-D 50</b>	2CDS 254 001 R0501	<b>55209 7</b>	0.500	1
④	63	<b>S 204-D 63</b>	2CDS 254 001 R0631	<b>55210 3</b>	0.500	1

- ① suitable for flow-type heaters 12 kW
- ② suitable for flow-type heaters 18 kW

- ③ suitable for flow-type heaters 21, 24 and 27 kW
- ④  $U_{Bmax}$  125 V ... with 2 poles connected in series

With disconnecting neutral NA

Number of poles	Rated current In A	Order details Type code	Order code	Bbn 4016779 Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1 + NA	0.5	<b>S 201-D 0.5 NA</b>	2CDS 251 103 R0981	<b>53197 9</b>		0.250	5
	1	<b>S 201-D 1 NA</b>	2CDS 251 103 R0011	<b>53199 3</b>		0.250	5
	1.6	<b>S 201-D 1.6 NA</b>	2CDS 251 103 R0971	<b>53198 6</b>		0.250	5
	2	<b>S 201-D 2 NA</b>	2CDS 251 103 R0021	<b>53200 6</b>		0.250	5
	3	<b>S 201-D 3 NA</b>	2CDS 251 103 R0031	<b>53201 3</b>		0.250	5
	4	<b>S 201-D 4 NA</b>	2CDS 251 103 R0041	<b>53202 0</b>		0.250	5
	6	<b>S 201-D 6 NA</b>	2CDS 251 103 R0061	<b>53203 7</b>		0.250	5
	8	<b>S 201-D 8 NA</b>	2CDS 251 103 R0081	<b>53204 4</b>		0.250	5
	10	<b>S 201-D 10 NA</b>	2CDS 251 103 R0101	<b>53205 1</b>		0.250	5
	13	<b>S 201-D 13 NA</b>	2CDS 251 103 R0131	<b>53206 8</b>		0.250	5
	16	<b>S 201-D 16 NA</b>	2CDS 251 103 R0161	<b>53209 9</b>		0.250	5
	20 ①	<b>S 201-D 20 NA</b>	2CDS 251 103 R0201	<b>53210 5</b>		0.250	5
	25	<b>S 201-D 25 NA</b>	2CDS 251 103 R0251	<b>53211 2</b>		0.250	5
	32 ②	<b>S 201-D 32 NA</b>	2CDS 251 103 R0321	<b>53212 9</b>		0.250	5
40 ③	<b>S 201-D 40 NA</b>	2CDS 251 103 R0401	<b>53213 6</b>		0.250	5	
3 + NA	0.5	<b>S 203-D 0.5 NA</b>	2CDS 253 103 R0981	<b>53276 1</b>		0.500	2
	1	<b>S 203-D 1 NA</b>	2CDS 253 103 R0011	<b>53278 5</b>		0.500	2
	1.6	<b>S 203-D 1.6 NA</b>	2CDS 253 103 R0971	<b>53277 8</b>		0.500	2
	2	<b>S 203-D 2 NA</b>	2CDS 253 103 R0021	<b>53279 2</b>		0.500	2
	3	<b>S 203-D 3 NA</b>	2CDS 253 103 R0031	<b>53280 8</b>		0.500	2
	4	<b>S 203-D 4 NA</b>	2CDS 253 103 R0041	<b>53281 5</b>		0.500	2
	6	<b>S 203-D 6 NA</b>	2CDS 253 103 R0061	<b>53282 2</b>		0.500	2
	8	<b>S 203-D 8 NA</b>	2CDS 253 103 R0081	<b>53283 9</b>		0.500	2
	10	<b>S 203-D 10 NA</b>	2CDS 253 103 R0101	<b>53284 6</b>		0.500	2
	13	<b>S 203-D 13 NA</b>	2CDS 253 103 R0131	<b>53286 0</b>		0.500	2
	16	<b>S 203-D 16 NA</b>	2CDS 253 103 R0161	<b>53287 7</b>		0.500	2
	20 ①	<b>S 203-D 20 NA</b>	2CDS 253 103 R0201	<b>53288 4</b>		0.500	2
	25	<b>S 203-D 25 NA</b>	2CDS 253 103 R0251	<b>53289 1</b>		0.500	2
	32 ②	<b>S 203-D 32 NA</b>	2CDS 253 103 R0321	<b>53290 7</b>		0.500	2
40 ③	<b>S 203-D 40 NA</b>	2CDS 253 103 R0401	<b>53291 4</b>		0.500	2	
50	<b>S 203-D 50 NA</b>	2CDS 253 103 R0501	<b>55207 3</b>		0.580	2	
	63	<b>S 203-D 63 NA</b>	2CDS 253 103 R0631	<b>55208 0</b>	0.580	2	

- ① suitable for flow-type heaters 12 kW
- ② suitable for flow-type heaters 18 kW

- ③ suitable for flow-type heaters 21, 24 and 27 kW

K

2



SK 021 B 01



SK 022 B 01



SK 023 B 01



### S 200 K (power) characteristic

Function: protection and control of the circuits like motors, transformer and auxiliary circuits, against overloads and short-circuits.

Advantages: no nuisance tripping in the case of functional peak currents up to  $8xI_n$ , depending on the series; through its highly sensitive thermostatic bimetal trip, the K-type characteristic offers protection to damageable elements in the overcurrent range; it also provides the best protection to cables and lines.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2, VDE 0660 Part 101

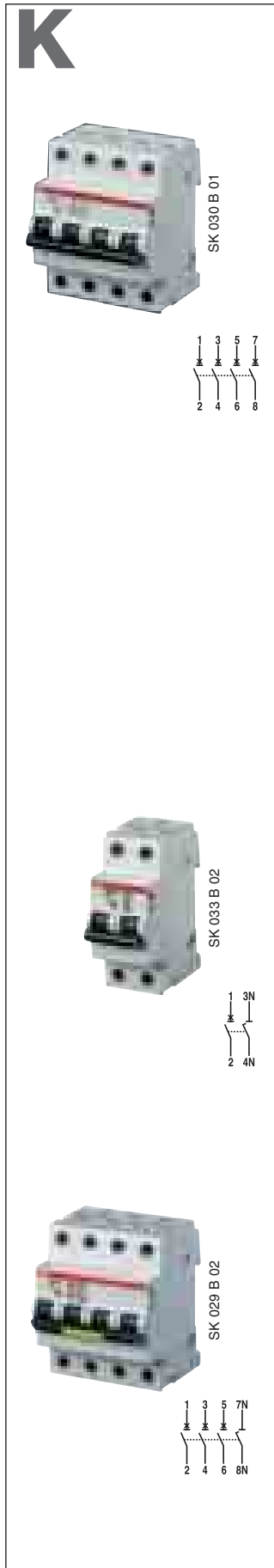
Icu=6 kA (acc. to VDE 0660 Part 101)

Number of poles	Rated current In A	Order details		Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code							
1	0.5	S 201-K	0.5	2CDS 251 001 R0157	50719 6			0.125	10
	1	S 201-K	1	2CDS 251 001 R0217	50720 2			0.125	10
	1.6	S 201-K	1.6	2CDS 251 001 R0257	50721 9			0.125	10
	2	S 201-K	2	2CDS 251 001 R0277	50722 6			0.125	10
	3	S 201-K	3	2CDS 251 001 R0317	50723 3			0.125	10
	4	S 201-K	4	2CDS 251 001 R0337	50724 0			0.125	10
	6	S 201-K	6	2CDS 251 001 R0377	50725 7			0.125	10
	8	S 201-K	8	2CDS 251 001 R0407	50726 4			0.125	10
	10	S 201-K	10	2CDS 251 001 R0427	49611 7			0.125	10
	13	S 201-K	13	2CDS 251 001 R0447	50727 1			0.125	10
	16	S 201-K	16	2CDS 251 001 R0467	49612 4			0.125	10
	20	S 201-K	20	2CDS 251 001 R0487	50728 8			0.125	10
	25	S 201-K	25	2CDS 251 001 R0517	50729 5			0.125	10
	32	S 201-K	32	2CDS 251 001 R0537	49613 1			0.125	10
	40	S 201-K	40	2CDS 251 001 R0557	50730 1			0.125	10
	U <sub>Bmax</sub> 440 V ~ 60 V ...	50	S 201-K	50	2CDS 251 001 R0577	55112 0			0.125
63		S 201-K	63	2CDS 251 001 R0607	55113 7			0.125	10
<hr/>									
2	0.5	S 202-K	0.5	2CDS 252 001 R0157	50731 8			0.250	5
	1	S 202-K	1	2CDS 252 001 R0217	50732 5			0.250	5
	1.6	S 202-K	1.6	2CDS 252 001 R0257	50733 2			0.250	5
	2	S 202-K	2	2CDS 252 001 R0277	50734 9			0.250	5
	3	S 202-K	3	2CDS 252 001 R0317	50735 6			0.250	5
	4	S 202-K	4	2CDS 252 001 R0337	50736 3			0.250	5
	6	S 202-K	6	2CDS 252 001 R0377	50737 0			0.250	5
	8	S 202-K	8	2CDS 252 001 R0407	50738 7			0.250	5
	10	S 202-K	10	2CDS 252 001 R0427	50739 4			0.250	5
	13	S 202-K	13	2CDS 252 001 R0447	50740 0			0.250	5
	16	S 202-K	16	2CDS 252 001 R0467	50741 7			0.250	5
	20	S 202-K	20	2CDS 252 001 R0487	50742 4			0.250	5
	25	S 202-K	25	2CDS 252 001 R0517	50743 1			0.250	5
	32	S 202-K	32	2CDS 252 001 R0537	50744 8			0.250	5
	40	S 202-K	40	2CDS 252 001 R0557	50745 5			0.250	5
	U <sub>Bmax</sub> 440 V ~ 125 V ...	50	S 202-K	50	2CDS 252 001 R0577	55116 8			0.250
63		S 202-K	63	2CDS 252 001 R0607	55117 5			0.250	5
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3	0.5	S 203-K	0.5	2CDS 253 001 R0157	50746 2			0.375	1
	1	S 203-K	1	2CDS 253 001 R0217	50747 9			0.375	1
	1.6	S 203-K	1.6	2CDS 253 001 R0257	50748 6			0.375	1
	2	S 203-K	2	2CDS 253 001 R0277	50749 3			0.375	1
	3	S 203-K	3	2CDS 253 001 R0317	50750 9			0.375	1
	4	S 203-K	4	2CDS 253 001 R0337	50751 6			0.375	1
	6	S 203-K	6	2CDS 253 001 R0377	50752 3			0.375	1
	8	S 203-K	8	2CDS 253 001 R0407	50753 0			0.375	1
	10	S 203-K	10	2CDS 253 001 R0427	49614 8			0.375	1
	13	S 203-K	13	2CDS 253 001 R0447	50754 7			0.375	1
	16	S 203-K	16	2CDS 253 001 R0467	49615 5			0.375	1
	20	S 203-K	20	2CDS 253 001 R0487	50755 4			0.375	1
	25	S 203-K	25	2CDS 253 001 R0517	50756 1			0.375	1
	32	S 203-K	32	2CDS 253 001 R0537	49616 2			0.375	1
	40	S 203-K	40	2CDS 253 001 R0557	50757 8			0.375	1
	U <sub>Bmax</sub> 440 V ~	50	S 203-K	50	2CDS 253 001 R0577	55118 2			0.375
63		S 203-K	63	2CDS 253 001 R0607	55119 9			0.375	1



**6000**

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4	0.5	<b>S 204-K 0.5</b>	2CDS 254 001 R0157	<b>52926 6</b>	0.500	1
	1	<b>S 204-K 1</b>	2CDS 254 001 R0217	<b>52927 3</b>	0.500	1
	1.6	<b>S 204-K 1.6</b>	2CDS 254 001 R0257	<b>52928 0</b>	0.500	1
	2	<b>S 204-K 2</b>	2CDS 254 001 R0277	<b>52929 7</b>	0.500	1
	3	<b>S 204-K 3</b>	2CDS 254 001 R0317	<b>52930 3</b>	0.500	1
	4	<b>S 204-K 4</b>	2CDS 254 001 R0337	<b>52931 0</b>	0.500	1
	6	<b>S 204-K 6</b>	2CDS 254 001 R0377	<b>52932 7</b>	0.500	1
	8	<b>S 204-K 8</b>	2CDS 254 001 R0407	<b>52933 4</b>	0.500	1
	10	<b>S 204-K 10</b>	2CDS 254 001 R0427	<b>52934 1</b>	0.500	1
	13	<b>S 204-K 13</b>	2CDS 254 001 R0447	<b>52935 8</b>	0.500	1
	16	<b>S 204-K 16</b>	2CDS 254 001 R0467	<b>52936 5</b>	0.500	1
	20	<b>S 204-K 20</b>	2CDS 254 001 R0487	<b>52937 2</b>	0.500	1
	25	<b>S 204-K 25</b>	2CDS 254 001 R0517	<b>52938 9</b>	0.500	1
	32	<b>S 204-K 32</b>	2CDS 254 001 R0537	<b>52939 6</b>	0.500	1
	40	<b>S 204-K 40</b>	2CDS 254 001 R0557	<b>52940 2</b>	0.500	1
	$U_{Bmax}$ 440 V ~	50	<b>S 204-K 50</b>	2CDS 254 001 R0577	<b>55122 9</b>	0.500
60 V ...		63	<b>S 204-K 63</b>	2CDS 254 001 R0607	<b>55123 6</b>	0.500

①  $U_{Bmax}$  125 V ... with 2 poles connected in series

With disconnecting neutral NA

Number of poles	Rated current In A	Order details		Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code			4016779				
1 + NA	0.5	<b>S 201-K 0.5 NA</b>	2CDS 251 103 R0157	<b>53182 5</b>	0.250	5			
	1	<b>S 201-K 1 NA</b>	2CDS 251 103 R0217	<b>53183 2</b>	0.250	5			
	1.6	<b>S 201-K 1.6 NA</b>	2CDS 251 103 R0257	<b>53184 9</b>	0.250	5			
	2	<b>S 201-K 2 NA</b>	2CDS 251 103 R0277	<b>53185 6</b>	0.250	5			
	3	<b>S 201-K 3 NA</b>	2CDS 251 103 R0317	<b>53186 3</b>	0.250	5			
	4	<b>S 201-K 4 NA</b>	2CDS 251 103 R0337	<b>53187 0</b>	0.250	5			
	6	<b>S 201-K 6 NA</b>	2CDS 251 103 R0377	<b>53188 7</b>	0.250	5			
	8	<b>S 201-K 8 NA</b>	2CDS 251 103 R0407	<b>53189 4</b>	0.250	5			
	10	<b>S 201-K 10 NA</b>	2CDS 251 103 R0427	<b>53190 0</b>	0.250	5			
	13	<b>S 201-K 13 NA</b>	2CDS 251 103 R0447	<b>53191 7</b>	0.250	5			
	16	<b>S 201-K 16 NA</b>	2CDS 251 103 R0467	<b>53192 4</b>	0.250	5			
	20	<b>S 201-K 20 NA</b>	2CDS 251 103 R0487	<b>53193 1</b>	0.250	5			
	25	<b>S 201-K 25 NA</b>	2CDS 251 103 R0517	<b>53194 8</b>	0.250	5			
	32	<b>S 201-K 32 NA</b>	2CDS 251 103 R0537	<b>53195 5</b>	0.250	5			
	40	<b>S 201-K 40 NA</b>	2CDS 251 103 R0557	<b>53196 2</b>	0.250	5			
	$U_{Bmax}$ 440 V ~	50	<b>S 201-K 50 NA</b>	2CDS 251 103 R0577	<b>55114 4</b>	0.250	5		
60 V ...		63	<b>S 201-K 63 NA</b>	2CDS 251 103 R0607	<b>55115 1</b>	0.250	5		
3 + NA	0.5	<b>S 203-K 0.5 NA</b>	2CDS 253 103 R0157	<b>53261 7</b>	0.500	1			
	1	<b>S 203-K 1 NA</b>	2CDS 253 103 R0217	<b>53262 4</b>	0.500	1			
	1.6	<b>S 203-K 1.6 NA</b>	2CDS 253 103 R0257	<b>53263 1</b>	0.500	1			
	2	<b>S 203-K 2 NA</b>	2CDS 253 103 R0277	<b>53264 8</b>	0.500	1			
	3	<b>S 203-K 3 NA</b>	2CDS 253 103 R0317	<b>53265 5</b>	0.500	1			
	4	<b>S 203-K 4 NA</b>	2CDS 253 103 R0337	<b>53266 2</b>	0.500	1			
	6	<b>S 203-K 6 NA</b>	2CDS 253 103 R0377	<b>53267 9</b>	0.500	1			
	8	<b>S 203-K 8 NA</b>	2CDS 253 103 R0407	<b>53268 6</b>	0.500	1			
	10	<b>S 203-K 10 NA</b>	2CDS 253 103 R0427	<b>53269 3</b>	0.500	1			
	13	<b>S 203-K 13 NA</b>	2CDS 253 103 R0447	<b>53270 0</b>	0.500	1			
	16	<b>S 203-K 16 NA</b>	2CDS 253 103 R0467	<b>53271 6</b>	0.500	1			
	20	<b>S 203-K 20 NA</b>	2CDS 253 103 R0487	<b>53272 3</b>	0.500	1			
	25	<b>S 203-K 25 NA</b>	2CDS 253 103 R0517	<b>53273 0</b>	0.500	1			
	32	<b>S 203-K 32 NA</b>	2CDS 253 103 R0537	<b>53274 7</b>	0.500	1			
	40	<b>S 203-K 40 NA</b>	2CDS 253 103 R0557	<b>53275 4</b>	0.500	1			
	$U_{Bmax}$ 440 V ~	50	<b>S 203-K 50 NA</b>	2CDS 253 103 R0577	<b>55120 5</b>	0.500	1		
63		<b>S 203-K 63 NA</b>	2CDS 253 103 R0607	<b>55121 2</b>	0.500	1			

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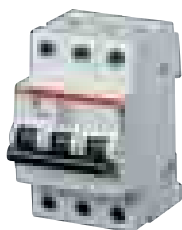
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SK 043 B 02



SK 022 B 01



SK 023 B 01



### S 200 Z characteristic

Function: protection and control of the electronic circuits against weak and long duration overloads and short-circuits.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2, VDE 0660 Part 101

Icu=6 kA (acc. to VDE 0660 Part 101)

Number of poles	Rated current In A	Order details		Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	0.5	S 201-Z 0.5	2CDS 251 001 R0158	53030 9			0.125	10
	1	S 201-Z 1	2CDS 251 001 R0218	53033 0			0.125	10
	1.6	S 201-Z 1.6	2CDS 251 001 R0258	53034 7			0.125	10
	2	S 201-Z 2	2CDS 251 001 R0278	53035 4			0.125	10
	3	S 201-Z 3	2CDS 251 001 R0318	53036 1			0.125	10
	4	S 201-Z 4	2CDS 251 001 R0338	53037 8			0.125	10
	6	S 201-Z 6	2CDS 251 001 R0378	53040 8			0.125	10
	8	S 201-Z 8	2CDS 251 001 R0408	53041 5			0.125	10
	10	S 201-Z 10	2CDS 251 001 R0428	53042 2			0.125	10
	16	S 201-Z 16	2CDS 251 001 R0468	53043 9			0.125	10
	20	S 201-Z 20	2CDS 251 001 R0488	53044 6			0.125	10
	25	S 201-Z 25	2CDS 251 001 R0518	53045 3			0.125	10
	32	S 201-Z 32	2CDS 251 001 R0538	53046 0			0.125	10
	40	S 201-Z 40	2CDS 251 001 R0558	53047 7			0.125	10
	50	S 201-Z 50	2CDS 251 001 R0578	55191 5			0.125	10
63	S 201-Z 63	2CDS 251 001 R0608	55192 2			0.125	10	
2	0.5	S 202-Z 0.5	2CDS 252 001 R0158	53068 2			0.250	5
	1	S 202-Z 1	2CDS 252 001 R0218	53067 5			0.250	5
	1.6	S 202-Z 1.6	2CDS 252 001 R0258	53069 9			0.250	5
	2	S 202-Z 2	2CDS 252 001 R0278	53070 5			0.250	5
	3	S 202-Z 3	2CDS 252 001 R0318	53071 2			0.250	5
	4	S 202-Z 4	2CDS 252 001 R0338	53072 9			0.250	5
	6	S 202-Z 6	2CDS 252 001 R0378	53073 6			0.250	5
	8	S 202-Z 8	2CDS 252 001 R0408	53074 3			0.250	5
	10	S 202-Z 10	2CDS 252 001 R0428	53075 0			0.250	5
	16	S 202-Z 16	2CDS 252 001 R0468	53076 7			0.250	5
	20	S 202-Z 20	2CDS 252 001 R0488	53077 4			0.250	5
	25	S 202-Z 25	2CDS 252 001 R0518	53078 1			0.250	5
	32	S 202-Z 32	2CDS 252 001 R0538	53079 8			0.250	5
	40	S 202-Z 40	2CDS 252 001 R0558	53080 4			0.250	5
	50	S 202-Z 50	2CDS 252 001 R0578	55193 9			0.250	5
63	S 202-Z 63	2CDS 252 001 R0608	55194 6			0.250	5	
3	0.5	S 203-Z 0.5	2CDS 253 001 R0158	53097 2			0.375	1
	1	S 203-Z 1	2CDS 253 001 R0218	53098 9			0.375	1
	1.6	S 203-Z 1.6	2CDS 253 001 R0258	53099 6			0.375	1
	2	S 203-Z 2	2CDS 253 001 R0278	53100 9			0.375	1
	3	S 203-Z 3	2CDS 253 001 R0318	53101 6			0.375	1
	4	S 203-Z 4	2CDS 253 001 R0338	53102 3			0.375	1
	6	S 203-Z 6	2CDS 253 001 R0378	53103 0			0.375	1
	8	S 203-Z 8	2CDS 253 001 R0408	53104 7			0.375	1
	10	S 203-Z 10	2CDS 253 001 R0428	53105 4			0.375	1
	16	S 203-Z 16	2CDS 253 001 R0468	53106 1			0.375	1
	20	S 203-Z 20	2CDS 253 001 R0488	53107 8			0.375	1
	25	S 203-Z 25	2CDS 253 001 R0518	53108 5			0.375	1
	32	S 203-Z 32	2CDS 253 001 R0538	53109 2			0.375	1
	40	S 203-Z 40	2CDS 253 001 R0558	53110 8			0.375	1
	50	S 203-Z 50	2CDS 253 001 R0578	55195 3			0.375	1
63	S 203-Z 63	2CDS 253 001 R0608	55196 0			0.375	1	

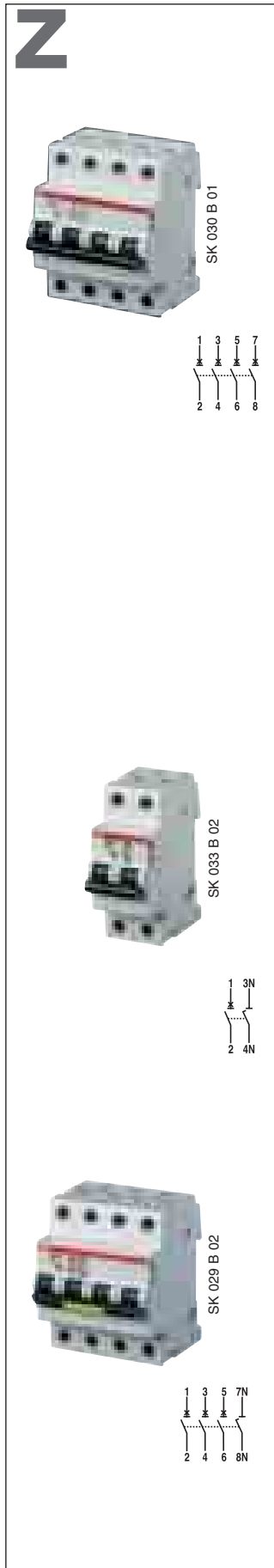
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440 V ~  
60 V ∴

U<sub>Bmax</sub>  
440 V ~  
125 V ∴  
①

U<sub>Bmax</sub>  
440 V ~

**6000**

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4	0.5	<b>S 204-Z 0.5</b>	2CDS 254 001 R0158	<b>53024 8</b>	0.500	1
	1	<b>S 204-Z 1</b>	2CDS 254 001 R0218	<b>53132 0</b>	0.500	1
	1.6	<b>S 204-Z 1.6</b>	2CDS 254 001 R0258	<b>53144 3</b>	0.500	1
	2	<b>S 204-Z 2</b>	2CDS 254 001 R0278	<b>53143 6</b>	0.500	1
	3	<b>S 204-Z 3</b>	2CDS 254 001 R0318	<b>53133 7</b>	0.500	1
	4	<b>S 204-Z 4</b>	2CDS 254 001 R0338	<b>53134 4</b>	0.500	1
	6	<b>S 204-Z 6</b>	2CDS 254 001 R0378	<b>53135 1</b>	0.500	1
	8	<b>S 204-Z 8</b>	2CDS 254 001 R0408	<b>53136 8</b>	0.500	1
	10	<b>S 204-Z 10</b>	2CDS 254 001 R0428	<b>53137 5</b>	0.500	1
	16	<b>S 204-Z 16</b>	2CDS 254 001 R0468	<b>53138 2</b>	0.500	1
	20	<b>S 204-Z 20</b>	2CDS 254 001 R0488	<b>53139 9</b>	0.500	1
	25	<b>S 204-Z 25</b>	2CDS 254 001 R0518	<b>53140 5</b>	0.500	1
	32	<b>S 204-Z 32</b>	2CDS 254 001 R0538	<b>53141 2</b>	0.500	1
	40	<b>S 204-Z 40</b>	2CDS 254 001 R0558	<b>53142 9</b>	0.500	1
50	<b>S 204-Z 50</b>	2CDS 254 001 R0578	<b>55197 7</b>	0.500	1	
63	<b>S 204-Z 63</b>	2CDS 254 001 R0608	<b>55198 4</b>	0.500	1	

U<sub>Bmax</sub>  
440 V ~  
125 V ...  
①

① U<sub>Bmax</sub> 125 V ... with 2 poles connected in series

With disconnecting neutral NA

Number of poles	Rated current In A	Order details		Order code	Bhn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code							
1 + NA	0.5	<b>S 201-Z 0.5 NA</b>		2CDS 251 103 R0158	<b>53214 3</b>			0.260	5
	1	<b>S 201-Z 1 NA</b>		2CDS 251 103 R0218	<b>53215 0</b>			0.260	5
	1.6	<b>S 201-Z 1.6 NA</b>		2CDS 251 103 R0258	<b>53216 7</b>			0.260	5
	2	<b>S 201-Z 2 NA</b>		2CDS 251 103 R0278	<b>53217 4</b>			0.260	5
	3	<b>S 201-Z 3 NA</b>		2CDS 251 103 R0318	<b>53218 1</b>			0.260	5
	4	<b>S 201-Z 4 NA</b>		2CDS 251 103 R0338	<b>53219 8</b>			0.260	5
	6	<b>S 201-Z 6 NA</b>		2CDS 251 103 R0378	<b>53220 4</b>			0.260	5
	8	<b>S 201-Z 8 NA</b>		2CDS 251 103 R0408	<b>53221 1</b>			0.260	5
	10	<b>S 201-Z 10 NA</b>		2CDS 251 103 R0428	<b>53222 8</b>			0.260	5
	16	<b>S 201-Z 16 NA</b>		2CDS 251 103 R0468	<b>53223 5</b>			0.260	5
	20	<b>S 201-Z 20 NA</b>		2CDS 251 103 R0488	<b>53224 2</b>			0.260	5
	25	<b>S 201-Z 25 NA</b>		2CDS 251 103 R0518	<b>53225 9</b>			0.260	5
	32	<b>S 201-Z 32 NA</b>		2CDS 251 103 R0538	<b>53226 6</b>			0.260	5
	40	<b>S 201-Z 40 NA</b>		2CDS 251 103 R0558	<b>53227 3</b>			0.260	5
50	<b>S 201-Z 50 NA</b>		2CDS 251 103 R0578	<b>55212 7</b>			0.320	5	
63	<b>S 201-Z 63 NA</b>		2CDS 251 103 R0608	<b>55213 4</b>			0.320	5	

U<sub>Bmax</sub>  
440 V ~  
60 V ...

3 + NA	0.5	<b>S 203-Z 0.5 NA</b>	2CDS 253 103 R0158	<b>53292 1</b>	0.520	1
	1	<b>S 203-Z 1 NA</b>	2CDS 253 103 R0218	<b>53293 8</b>	0.520	1
	1.6	<b>S 203-Z 1.6 NA</b>	2CDS 253 103 R0258	<b>53294 5</b>	0.520	1
	2	<b>S 203-Z 2 NA</b>	2CDS 253 103 R0278	<b>53295 2</b>	0.520	1
	3	<b>S 203-Z 3 NA</b>	2CDS 253 103 R0318	<b>53297 6</b>	0.520	1
	4	<b>S 203-Z 4 NA</b>	2CDS 253 103 R0338	<b>53298 3</b>	0.520	1
	6	<b>S 203-Z 6 NA</b>	2CDS 253 103 R0378	<b>53299 0</b>	0.520	1
	8	<b>S 203-Z 8 NA</b>	2CDS 253 103 R0408	<b>53300 3</b>	0.520	1
	10	<b>S 203-Z 10 NA</b>	2CDS 253 103 R0428	<b>53301 0</b>	0.520	1
	16	<b>S 203-Z 16 NA</b>	2CDS 253 103 R0468	<b>53302 7</b>	0.520	1
	20	<b>S 203-Z 20 NA</b>	2CDS 253 103 R0488	<b>53305 8</b>	0.520	1
	25	<b>S 203-Z 25 NA</b>	2CDS 253 103 R0518	<b>53306 5</b>	0.520	1
	32	<b>S 203-Z 32 NA</b>	2CDS 253 103 R0538	<b>53307 2</b>	0.520	1
	40	<b>S 203-Z 40 NA</b>	2CDS 253 103 R0558	<b>53308 9</b>	0.520	1
50	<b>S 203-Z 50 NA</b>	2CDS 253 103 R0578	<b>55214 1</b>	0.640	1	
63	<b>S 203-Z 63 NA</b>	2CDS 253 103 R0608	<b>55216 5</b>	0.640	1	

U<sub>Bmax</sub>  
440 V ~



10000

B

2



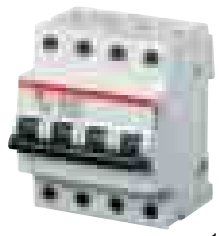
SK 019 B 99



SK 020 B 99



SK 021 B 99



SK 087 B 01



### S 200 M-B characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

Applications: residential, commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

I<sub>cn</sub>=10 kA

Number of poles	Rated current In A	Order details		Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	6	S 201 M-B 6	2CDS 271 001 R0065	54942 4			0.125	10
	10	S 201 M-B 10	2CDS 271 001 R0105	54943 1			0.125	10
	13	S 201 M-B 13	2CDS 271 001 R0135	54944 8			0.125	10
	16	S 201 M-B 16	2CDS 271 001 R0165	54945 5			0.125	10
	20 ①	S 201 M-B 20	2CDS 271 001 R0205	54946 2			0.125	10
	25	S 201 M-B 25	2CDS 271 001 R0255	54947 9			0.125	10
	32 ②	S 201 M-B 32	2CDS 271 001 R0325	54948 6			0.125	10
	40 ③	S 201 M-B 40	2CDS 271 001 R0405	54949 3			0.125	10
U <sub>Bmax</sub> 440 V ~ 60 V ∴	50	S 201 M-B 50	2CDS 271 001 R0505	54381 1			0.125	10
	63	S 201 M-B 63	2CDS 271 001 R0635	54382 8			0.125	10
	<hr/>							
2	6	S 202 M-B 6	2CDS 272 001 R0065	54958 5			0.250	5
	10	S 202 M-B 10	2CDS 272 001 R0105	54959 2			0.250	5
	13	S 202 M-B 13	2CDS 272 001 R0135	54960 8			0.250	5
	16	S 202 M-B 16	2CDS 272 001 R0165	54961 5			0.250	5
	20	S 202 M-B 20	2CDS 272 001 R0205	54962 2			0.250	5
	25	S 202 M-B 25	2CDS 272 001 R0255	54963 9			0.250	5
	32	S 202 M-B 32	2CDS 272 001 R0325	54964 6			0.250	5
	40	S 202 M-B 40	2CDS 272 001 R0405	54965 3			0.250	5
U <sub>Bmax</sub> 440 V ~ 125 V ∴	50	S 202 M-B 50	2CDS 272 001 R0505	54385 9			0.250	5
	④ 63	S 202 M-B 63	2CDS 272 001 R0635	54386 6			0.250	5
	<hr/>							
3	6	S 203 M-B 6	2CDS 273 001 R0065	54966 0			0.375	1
	10	S 203 M-B 10	2CDS 273 001 R0105	54967 7			0.375	1
	13	S 203 M-B 13	2CDS 273 001 R0135	54968 4			0.375	1
	16	S 203 M-B 16	2CDS 273 001 R0165	54969 1			0.375	1
	20 ①	S 203 M-B 20	2CDS 273 001 R0205	54970 7			0.375	1
	25	S 203 M-B 25	2CDS 273 001 R0255	54971 4			0.375	1
	32 ②	S 203 M-B 32	2CDS 273 001 R0325	54972 1			0.375	1
	40 ③	S 203 M-B 40	2CDS 273 001 R0405	54973 8			0.375	1
U <sub>Bmax</sub> 440 V ~	50	S 203 M-B 50	2CDS 273 001 R0505	54387 3			0.375	1
	63	S 203 M-B 63	2CDS 273 001 R0635	54388 0			0.375	1
	<hr/>							
4	6	S 204 M-B 6	2CDS 274 001 R0065	54982 0			0.500	1
	10	S 204 M-B 10	2CDS 274 001 R0105	54983 7			0.500	1
	13	S 204 M-B 13	2CDS 274 001 R0135	54984 4			0.500	1
	16	S 204 M-B 16	2CDS 274 001 R0165	54985 1			0.500	1
	20	S 204 M-B 20	2CDS 274 001 R0205	54986 8			0.500	1
	25	S 204 M-B 25	2CDS 274 001 R0255	54987 5			0.500	1
	32	S 204 M-B 32	2CDS 274 001 R0325	54988 2			0.500	1
	40	S 204 M-B 40	2CDS 274 001 R0405	54989 9			0.500	1
U <sub>Bmax</sub> 440 V ~ 125 V ∴	50	S 204 M-B 50	2CDS 274 001 R0505	54391 0			0.500	1
	④ 63	S 204 M-B 63	2CDS 274 001 R0635	54392 7			0.500	1

① suitable for flow-type heaters 12 kW  
② suitable for flow-type heaters 18 kW

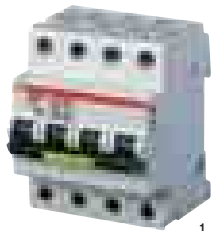
③ suitable for flow-type heaters 21, 24 and 27 kW  
④ U<sub>Bmax</sub> 125 V ∴ with 2 poles connected in series

10000

**B**



SK 033 B 02



SK 029 B 02



With disconnecting neutral NA

Number of poles	Rated current In A	Order details		Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code			EAN				
1 + NA	6	<b>S 201 M-B 6 NA</b>		2CDS 271 103 R0065	<b>54950 9</b>			0.250	5
	10	<b>S 201 M-B 10 NA</b>		2CDS 271 103 R0105	<b>54951 6</b>			0.250	5
	13	<b>S 201 M-B 13 NA</b>		2CDS 271 103 R0135	<b>54952 3</b>			0.250	5
	16	<b>S 201 M-B 16 NA</b>		2CDS 271 103 R0165	<b>54953 0</b>			0.250	5
	20 ①	<b>S 201 M-B 20 NA</b>		2CDS 271 103 R0205	<b>54954 7</b>			0.250	5
	25	<b>S 201 M-B 25 NA</b>		2CDS 271 103 R0255	<b>54955 4</b>			0.250	5
	32 ②	<b>S 201 M-B 32 NA</b>		2CDS 271 103 R0325	<b>54956 1</b>			0.250	5
	40 ③	<b>S 201 M-B 40 NA</b>		2CDS 271 103 R0405	<b>54957 8</b>			0.250	5
	50	<b>S 201 M-B 50 NA</b>		2CDS 271 103 R0505	<b>54383 5</b>			0.250	5
	63	<b>S 201 M-B 63 NA</b>		2CDS 271 103 R0635	<b>54384 2</b>			0.250	5
$U_{Bmax}$ 440 V ~ 60 V ∴									
3 + NA	6	<b>S 203 M-B 6 NA</b>		2CDS 273 103 R0065	<b>54974 5</b>			0.500	1
	10	<b>S 203 M-B 10 NA</b>		2CDS 273 103 R0105	<b>54975 2</b>			0.500	1
	13	<b>S 203 M-B 13 NA</b>		2CDS 273 103 R0135	<b>54976 9</b>			0.500	1
	16	<b>S 203 M-B 16 NA</b>		2CDS 273 103 R0165	<b>54977 6</b>			0.500	1
	20 ①	<b>S 203 M-B 20 NA</b>		2CDS 273 103 R0205	<b>54978 3</b>			0.500	1
	25	<b>S 203 M-B 25 NA</b>		2CDS 273 103 R0255	<b>54979 0</b>			0.500	1
	32 ②	<b>S 203 M-B 32 NA</b>		2CDS 273 103 R0325	<b>54980 6</b>			0.500	1
	40 ③	<b>S 203 M-B 40 NA</b>		2CDS 273 103 R0405	<b>54981 3</b>			0.500	1
	50	<b>S 203 M-B 50 NA</b>		2CDS 273 103 R0505	<b>54389 7</b>			0.500	1
	63	<b>S 203 M-B 63 NA</b>		2CDS 273 103 R0635	<b>54390 3</b>			0.580	1
$U_{Bmax}$ 440 V ~									

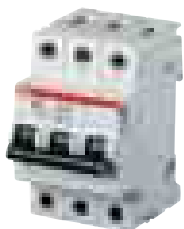
① suitable for flow-type heaters 12 kW  
② suitable for flow-type heaters 18 kW

③ suitable for flow-type heaters 21, 24 and 27 kW

2

10000

C



### S 200 M-C characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

Applications: residential, commercial and industrial.

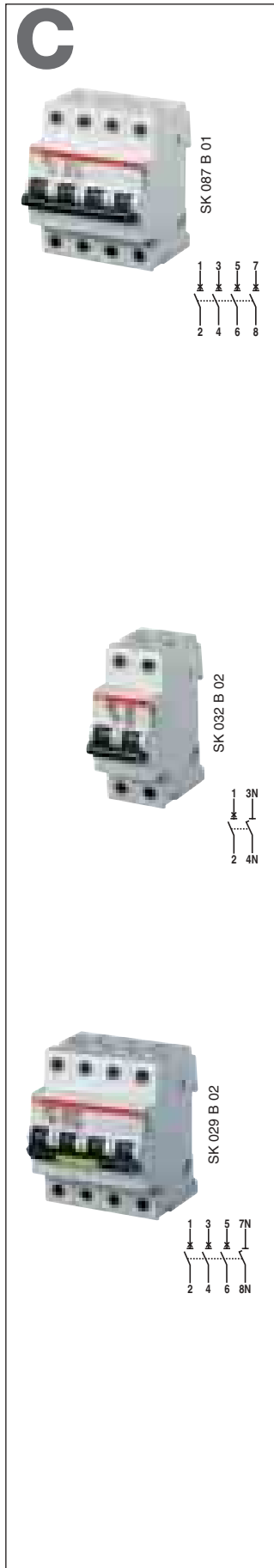
Standard: IEC/EN 60898, IEC/EN 60947-2

I<sub>cn</sub>=10 kA

Number of poles	Rated current In A	Order details Type code	Order code	Bhn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779 EAN				
1	0.5	S 201 M-C 0.5	2CDS 271 001 R0984	54990 5			0.125	10
	1	S 201 M-C 1	2CDS 271 001 R0014	54992 9			0.125	10
	1.6	S 201 M-C 1.6	2CDS 271 001 R0974	54991 2			0.125	10
	2	S 201 M-C 2	2CDS 271 001 R0024	54993 6			0.125	10
	3	S 201 M-C 3	2CDS 271 001 R0034	54994 3			0.125	10
	4	S 201 M-C 4	2CDS 271 001 R0044	54995 0			0.125	10
	6	S 201 M-C 6	2CDS 271 001 R0064	54996 7			0.125	10
	8	S 201 M-C 8	2CDS 271 001 R0084	54997 4			0.125	10
	10	S 201 M-C 10	2CDS 271 001 R0104	54998 1			0.125	10
	13	S 201 M-C 13	2CDS 271 001 R0134	54999 8			0.125	10
	16	S 201 M-C 16	2CDS 271 001 R0164	55000 0			0.125	10
	20 ①	S 201 M-C 20	2CDS 271 001 R0204	55001 7			0.125	10
	25	S 201 M-C 25	2CDS 271 001 R0254	55002 4			0.125	10
	32 ②	S 201 M-C 32	2CDS 271 001 R0324	55003 1			0.125	10
	40 ③	S 201 M-C 40	2CDS 271 001 R0404	55004 8			0.125	10
	50	S 201 M-C 50	2CDS 271 001 R0504	54393 4			0.125	10
60 V ∴ 63	S 201 M-C 63	2CDS 271 001 R0634	54394 1			0.125	10	
2	0.5	S 202 M-C 0.5	2CDS 272 001 R0984	55020 8			0.250	5
	1	S 202 M-C 1	2CDS 272 001 R0014	55022 2			0.250	5
	1.6	S 202 M-C 1.6	2CDS 272 001 R0974	55021 5			0.250	5
	2	S 202 M-C 2	2CDS 272 001 R0024	55023 9			0.250	5
	3	S 202 M-C 3	2CDS 272 001 R0034	55024 6			0.250	5
	4	S 202 M-C 4	2CDS 272 001 R0044	55025 3			0.250	5
	6	S 202 M-C 6	2CDS 272 001 R0064	55026 0			0.250	5
	8	S 202 M-C 8	2CDS 272 001 R0084	55027 7			0.250	5
	10	S 202 M-C 10	2CDS 272 001 R0104	55028 4			0.250	5
	13	S 202 M-C 13	2CDS 272 001 R0134	55029 1			0.250	5
	16	S 202 M-C 16	2CDS 272 001 R0164	55030 7			0.250	5
	20	S 202 M-C 20	2CDS 272 001 R0204	55031 4			0.250	5
	25	S 202 M-C 25	2CDS 272 001 R0254	55032 1			0.250	5
	32	S 202 M-C 32	2CDS 272 001 R0324	55033 8			0.250	5
	40	S 202 M-C 40	2CDS 272 001 R0404	55034 5			0.250	5
	50	S 202 M-C 50	2CDS 272 001 R0504	54397 2			0.250	5
④ 63	S 202 M-C 63	2CDS 272 001 R0634	54398 9			0.250	5	
3	0.5	S 203 M-C 0.5	2CDS 273 001 R0984	55035 2			0.375	1
	1	S 203 M-C 1	2CDS 273 001 R0014	55037 6			0.375	1
	1.6	S 203 M-C 1.6	2CDS 273 001 R0974	55036 9			0.375	1
	2	S 203 M-C 2	2CDS 273 001 R0024	55038 3			0.375	1
	3	S 203 M-C 3	2CDS 273 001 R0034	55039 0			0.375	1
	4	S 203 M-C 4	2CDS 273 001 R0044	55040 6			0.375	1
	6	S 203 M-C 6	2CDS 273 001 R0064	55041 3			0.375	1
	8	S 203 M-C 8	2CDS 273 001 R0084	55042 0			0.375	1
	10	S 203 M-C 10	2CDS 273 001 R0104	55043 7			0.375	1
	13	S 203 M-C 13	2CDS 273 001 R0134	55044 4			0.375	1
	16	S 203 M-C 16	2CDS 273 001 R0164	55045 1			0.375	1
	20 ①	S 203 M-C 20	2CDS 273 001 R0204	55046 8			0.375	1
	25	S 203 M-C 25	2CDS 273 001 R0254	55047 5			0.375	1
	32 ②	S 203 M-C 32	2CDS 273 001 R0324	55048 2			0.375	1
	40 ③	S 203 M-C 40	2CDS 273 001 R0404	55049 9			0.375	1
	50	S 203 M-C 50	2CDS 273 001 R0504	54399 6			0.375	1
U <sub>Bmax</sub> 440 V ~ 63	S 203 M-C 63	2CDS 273 001 R0634	54400 9			0.375	1	

**10000**

**2**



4	0.5	<b>S 204 M-C 0.5</b>	2CDS 274 001 R0984	<b>55065 9</b>	0.500	1
	1	<b>S 204 M-C 1</b>	2CDS 274 001 R0014	<b>55067 3</b>	0.500	1
	1.6	<b>S 204 M-C 1.6</b>	2CDS 274 001 R0974	<b>55066 6</b>	0.500	1
	2	<b>S 204 M-C 2</b>	2CDS 274 001 R0024	<b>55068 0</b>	0.500	1
	3	<b>S 204 M-C 3</b>	2CDS 274 001 R0034	<b>55069 7</b>	0.500	1
	4	<b>S 204 M-C 4</b>	2CDS 274 001 R0044	<b>55070 3</b>	0.500	1
	6	<b>S 204 M-C 6</b>	2CDS 274 001 R0064	<b>55071 0</b>	0.500	1
	8	<b>S 204 M-C 8</b>	2CDS 274 001 R0084	<b>55072 7</b>	0.500	1
	10	<b>S 204 M-C 10</b>	2CDS 274 001 R0104	<b>55073 4</b>	0.500	1
	13	<b>S 204 M-C 13</b>	2CDS 274 001 R0134	<b>55074 1</b>	0.500	1
	16	<b>S 204 M-C 16</b>	2CDS 274 001 R0164	<b>55075 8</b>	0.500	1
	20	<b>S 204 M-C 20</b>	2CDS 274 001 R0204	<b>55076 5</b>	0.500	1
	25	<b>S 204 M-C 25</b>	2CDS 274 001 R0254	<b>55077 2</b>	0.500	1
	32	<b>S 204 M-C 32</b>	2CDS 274 001 R0324	<b>55078 9</b>	0.500	1
$U_{Bmax}$ 440 V ~	40	<b>S 204 M-C 40</b>	2CDS 274 001 R0404	<b>55079 6</b>	0.500	1
	50	<b>S 204 M-C 50</b>	2CDS 274 001 R0504	<b>54403 0</b>	0.500	1
④	63	<b>S 204 M-C 63</b>	2CDS 274 001 R0634	<b>54404 7</b>	0.500	1

- ① suitable for flow-type heaters 12 kW
- ② suitable for flow-type heaters 18 kW
- ③ suitable for flow-type heaters 21, 24 and 27 kW
- ④  $U_{Bmax}$  125 V ∴ with 2 poles connected in series

**With disconnecting neutral NA**

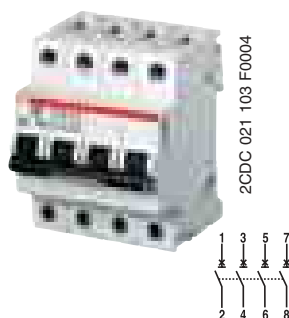
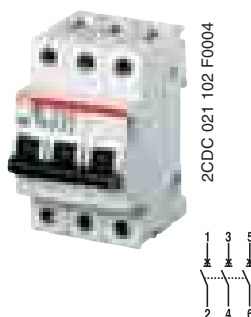
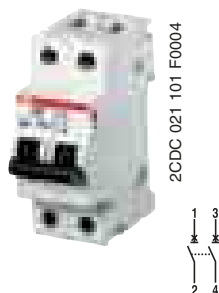
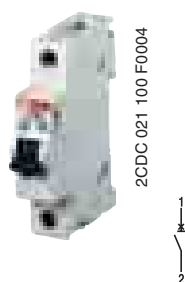
Number of poles	Rated current In A	Order details Type code	Order code	Bhn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779				
1 + NA	0.5	<b>S 201 M-C 0.5 NA</b>	2CDS 271 103 R0984	<b>55005 5</b>			0.250	5
	1	<b>S 201 M-C 1 NA</b>	2CDS 271 103 R0014	<b>55007 9</b>			0.250	5
	1.6	<b>S 201 M-C 1.6 NA</b>	2CDS 271 103 R0974	<b>55006 2</b>			0.250	5
	2	<b>S 201 M-C 2 NA</b>	2CDS 271 103 R0024	<b>55008 6</b>			0.250	5
	3	<b>S 201 M-C 3 NA</b>	2CDS 271 103 R0034	<b>55009 3</b>			0.250	5
	4	<b>S 201 M-C 4 NA</b>	2CDS 271 103 R0044	<b>55010 9</b>			0.250	5
	6	<b>S 201 M-C 6 NA</b>	2CDS 271 103 R0064	<b>55011 6</b>			0.250	5
	8	<b>S 201 M-C 8 NA</b>	2CDS 271 103 R0084	<b>55012 3</b>			0.250	5
	10	<b>S 201 M-C 10 NA</b>	2CDS 271 103 R0104	<b>55013 0</b>			0.250	5
	13	<b>S 201 M-C 13 NA</b>	2CDS 271 103 R0134	<b>55014 7</b>			0.250	5
	16	<b>S 201 M-C 16 NA</b>	2CDS 271 103 R0164	<b>55015 4</b>			0.250	5
	20 ①	<b>S 201 M-C 20 NA</b>	2CDS 271 103 R0204	<b>55016 1</b>			0.250	5
	25	<b>S 201 M-C 25 NA</b>	2CDS 271 103 R0254	<b>55017 8</b>			0.250	5
	32 ②	<b>S 201 M-C 32 NA</b>	2CDS 271 103 R0324	<b>55018 5</b>			0.250	5
$U_{Bmax}$ 440 V ~	40 ③	<b>S 201 M-C 40 NA</b>	2CDS 271 103 R0404	<b>55019 2</b>			0.250	5
	50	<b>S 201 M-C 50 NA</b>	2CDS 271 103 R0504	<b>54395 8</b>			0.250	5
	60 ∴	<b>S 201 M-C 63 NA</b>	2CDS 271 103 R0634	<b>54396 5</b>			0.250	5

3 + NA	0.5	<b>S 203 M-C 0.5 NA</b>	2CDS 273 103 R0984	<b>55051 2</b>	0.500	1
	1	<b>S 203 M-C 1 NA</b>	2CDS 273 103 R0014	<b>55052 9</b>	0.500	1
	1.6	<b>S 203 M-C 1.6 NA</b>	2CDS 273 103 R0974	<b>55050 5</b>	0.500	1
	2	<b>S 203 M-C 2 NA</b>	2CDS 273 103 R0024	<b>55053 6</b>	0.500	1
	3	<b>S 203 M-C 3 NA</b>	2CDS 273 103 R0034	<b>55054 3</b>	0.500	1
	4	<b>S 203 M-C 4 NA</b>	2CDS 273 103 R0044	<b>55055 0</b>	0.500	1
	6	<b>S 203 M-C 6 NA</b>	2CDS 273 103 R0064	<b>55056 7</b>	0.500	1
	8	<b>S 203 M-C 8 NA</b>	2CDS 273 103 R0084	<b>55057 4</b>	0.500	1
	10	<b>S 203 M-C 10 NA</b>	2CDS 273 103 R0104	<b>55058 1</b>	0.500	1
	13	<b>S 203 M-C 13 NA</b>	2CDS 273 103 R0134	<b>55059 8</b>	0.500	1
	16	<b>S 203 M-C 16 NA</b>	2CDS 273 103 R0164	<b>55060 4</b>	0.500	1
	20 ①	<b>S 203 M-C 20 NA</b>	2CDS 273 103 R0204	<b>55061 1</b>	0.500	1
	25	<b>S 203 M-C 25 NA</b>	2CDS 273 103 R0254	<b>55062 8</b>	0.500	1
	32 ②	<b>S 203 M-C 32 NA</b>	2CDS 273 103 R0324	<b>55063 5</b>	0.500	1
$U_{Bmax}$ 440 V ~	40 ③	<b>S 203 M-C 40 NA</b>	2CDS 273 103 R0404	<b>55064 2</b>	0.500	1
	50	<b>S 203 M-C 50 NA</b>	2CDS 273 103 R0504	<b>54401 6</b>	0.580	1
	63	<b>S 203 M-C 63 NA</b>	2CDS 273 103 R0634	<b>54402 3</b>	0.580	1

- ① suitable for flow-type heaters 12 kW
- ② suitable for flow-type heaters 18 kW
- ③ suitable for flow-type heaters 21, 24 and 27 kW

B

2



### S 200 P-B characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

Applications: commercial and industrial.

Standard: IEC/EN 60898

$I_{cn}=25 \text{ kA}$  for  $0.5 \text{ A} \leq I_n \leq 25 \text{ A}$

$I_{cn}=15 \text{ kA}$  for  $32 \text{ A} \leq I_n \leq 63 \text{ A}$

Number of poles	Rated current In A	Order details Type code	Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779				
1	6	S 201 P-B 6	2CDS 281 001 R0065	589574			0.14	10
	10	S 201 P-B 10	2CDS 281 001 R0105	589581			0.14	10
	13	S 201 P-B 13	2CDS 281 001 R0135	589598			0.14	10
	16	S 201 P-B 16	2CDS 281 001 R0165	589260			0.14	10
	20	S 201 P-B 20	2CDS 281 001 R0205	589604			0.14	10
	25	S 201 P-B 25	2CDS 281 001 R0255	589611			0.14	10
	32	S 201 P-B 32	2CDS 281 001 R0325	589628			0.14	10
	40	S 201 P-B 40	2CDS 281 001 R0405	589635			0.14	10
	50	S 201 P-B 50	2CDS 281 001 R0505	589659			0.14	10
60 V ∴	63	S 201 P-B 63	2CDS 281 001 R0635	589666			0.14	10

2	6	S 202 P-B 6	2CDS 282 001 R0065	589673			0.28	5
	10	S 202 P-B 10	2CDS 282 001 R0105	589680			0.28	5
	13	S 202 P-B 13	2CDS 282 001 R0135	589697			0.28	5
	16	S 202 P-B 16	2CDS 282 001 R0165	589703			0.28	5
	20	S 202 P-B 20	2CDS 282 001 R0205	589710			0.28	5
	25	S 202 P-B 25	2CDS 282 001 R0255	589727			0.28	5
	32	S 202 P-B 32	2CDS 282 001 R0325	589734			0.28	5
	40	S 202 P-B 40	2CDS 282 001 R0405	589741			0.28	5
	50	S 202 P-B 50	2CDS 282 001 R0505	589758			0.28	5
①	63	S 202 P-B 63	2CDS 282 001 R0635	589765			0.28	5

3	6	S 203 P-B 6	2CDS 283 001 R0065	589772			0.42	1
	10	S 203 P-B 10	2CDS 283 001 R0105	589789			0.42	1
	13	S 203 P-B 13	2CDS 283 001 R0135	589796			0.42	1
	16	S 203 P-B 16	2CDS 283 001 R0165	589802			0.42	1
	20	S 203 P-B 20	2CDS 283 001 R0205	589819			0.42	1
	25	S 203 P-B 25	2CDS 283 001 R0255	589826			0.42	1
	32	S 203 P-B 32	2CDS 283 001 R0325	589833			0.42	1
	40	S 203 P-B 40	2CDS 283 001 R0405	589840			0.42	1
	50	S 203 P-B 50	2CDS 283 001 R0505	589857			0.42	1
440 V ∴	63	S 203 P-B 63	2CDS 283 001 R0635	589864			0.42	1

4	6	S 204 P-B 6	2CDS 284 001 R0065	589871			0.56	1
	10	S 204 P-B 10	2CDS 284 001 R0105	589888			0.56	1
	13	S 204 P-B 13	2CDS 284 001 R0135	589895			0.56	1
	16	S 204 P-B 16	2CDS 284 001 R0165	589901			0.56	1
	20	S 204 P-B 20	2CDS 284 001 R0205	589918			0.56	1
	25	S 204 P-B 25	2CDS 284 001 R0255	589925			0.56	1
	32	S 204 P-B 32	2CDS 284 001 R0325	589932			0.56	1
	40	S 204 P-B 40	2CDS 284 001 R0405	589949			0.56	1
	50	S 204 P-B 50	2CDS 284 001 R0505	589956			0.56	1
①	63	S 204 P-B 63	2CDS 284 001 R0635	589963			0.56	1

①  $U_{Bmax}$  125 V ∴ with 2 poles connected in series

**B**



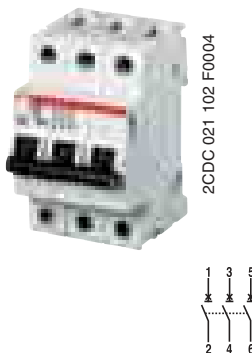
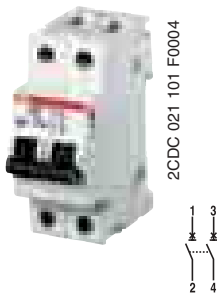
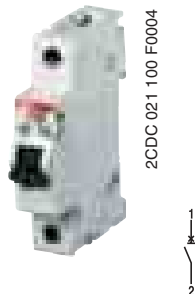
With disconnecting neutral NA

Number of poles	Rated current In A	Order details		Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.	
		Type code	Order code						
1	6	<b>S 201 P-B 6 NA</b>	2CDS 281 103 R0065	<b>589970</b>			0.28	5	
	10	<b>S 201 P-B 10 NA</b>	2CDS 281 103 R0105	<b>589987</b>			0.28	5	
	NA	13	<b>S 201 P-B 13 NA</b>	2CDS 281 103 R0135	<b>589994</b>			0.28	5
		16	<b>S 201 P-B 16 NA</b>	2CDS 281 103 R0165	<b>590006</b>			0.28	5
		20	<b>S 201 P-B 20 NA</b>	2CDS 281 103 R0205	<b>590013</b>			0.28	5
		25	<b>S 201 P-B 25 NA</b>	2CDS 281 103 R0255	<b>590020</b>			0.28	5
		32	<b>S 201 P-B 32 NA</b>	2CDS 281 103 R0325	<b>590037</b>			0.28	5
		40	<b>S 201 P-B 40 NA</b>	2CDS 281 103 R0405	<b>590044</b>			0.28	5
		50	<b>S 201 P-B 50 NA</b>	2CDS 281 103 R0505	<b>590051</b>			0.28	5
		63	<b>S 201 P-B 63 NA</b>	2CDS 281 103 R0635	<b>590068</b>			0.28	5
$U_{Bmax}$ 440 V ~									
60 V ---									
3	6	<b>S 203 P-B 6 NA</b>	2CDS 283 103 R0065	<b>590075</b>			0.56	1	
	10	<b>S 203 P-B 10 NA</b>	2CDS 283 103 R0105	<b>590082</b>			0.56	1	
	NA	13	<b>S 203 P-B 13 NA</b>	2CDS 283 103 R0135	<b>590099</b>			0.56	1
		16	<b>S 203 P-B 16 NA</b>	2CDS 283 103 R0165	<b>590105</b>			0.56	1
		20	<b>S 203 P-B 20 NA</b>	2CDS 283 103 R0205	<b>590112</b>			0.56	1
		25	<b>S 203 P-B 25 NA</b>	2CDS 283 103 R0255	<b>590129</b>			0.56	1
		32	<b>S 203 P-B 32 NA</b>	2CDS 283 103 R0325	<b>590136</b>			0.56	1
		40	<b>S 203 P-B 40 NA</b>	2CDS 283 103 R0405	<b>590143</b>			0.56	1
		50	<b>S 203 P-B 50 NA</b>	2CDS 283 103 R0505	<b>590150</b>			0.56	1
		63	<b>S 203 P-B 63 NA</b>	2CDS 283 103 R0635	<b>590167</b>			0.56	1
$U_{Bmax}$ 440 V ~									



C

2



### S 200 P-C characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

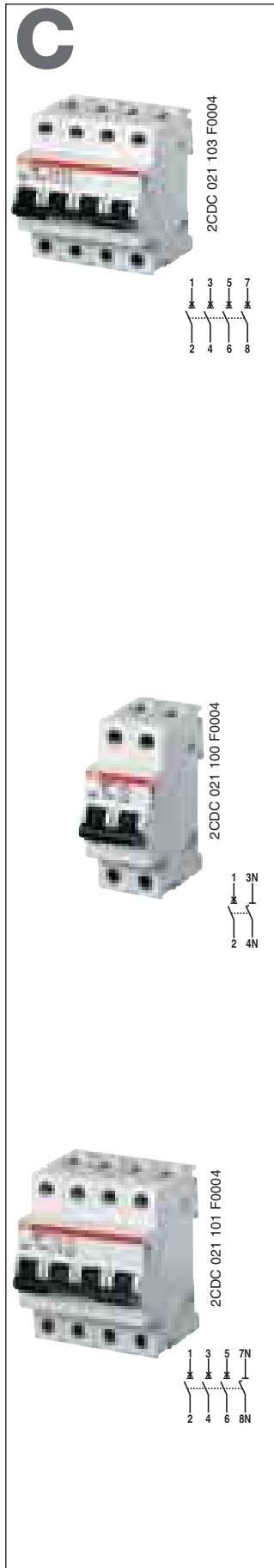
Applications: commercial and industrial.

Standard: IEC/EN 60898

$I_{cn}=25 \text{ kA}$  for  $0.5 \text{ A} \leq I_n \leq 25 \text{ A}$

$I_{cn}=15 \text{ kA}$  for  $32 \text{ A} \leq I_n \leq 63 \text{ A}$

Number of poles	Rated current In A	Order details Type code	Order code	Bhn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				EAN				
1	0.5	S 201 P-C 0.5	2CDS 281 001 R0984	590174			0.14	10
	1	S 201 P-C 1	2CDS 281 001 R0014	590181			0.14	10
	1.6	S 201 P-C 1.6	2CDS 281 001 R0974	590198			0.14	10
	2	S 201 P-C 2	2CDS 281 001 R0024	590204			0.14	10
	3	S 201 P-C 3	2CDS 281 001 R0034	590211			0.14	10
	4	S 201 P-C 4	2CDS 281 001 R0044	590228			0.14	10
	6	S 201 P-C 6	2CDS 281 001 R0064	590235			0.14	10
	8	S 201 P-C 8	2CDS 281 001 R0084	590242			0.14	10
	10	S 201 P-C 10	2CDS 281 001 R0104	590259			0.14	10
	13	S 201 P-C 13	2CDS 281 001 R0134	590266			0.14	10
	16	S 201 P-C 16	2CDS 281 001 R0164	590273			0.14	10
	20	S 201 P-C 20	2CDS 281 001 R0204	590280			0.14	10
	25	S 201 P-C 25	2CDS 281 001 R0254	590297			0.14	10
	32	S 201 P-C 32	2CDS 281 001 R0324	590303			0.14	10
	40	S 201 P-C 40	2CDS 281 001 R0404	590310			0.14	10
	50	S 201 P-C 50	2CDS 281 001 R0504	590327			0.14	10
63	S 201 P-C 63	2CDS 281 001 R0634	590334			0.14	10	
2	0.5	S 202 P-C 0.5	2CDS 282 001 R0984	590341			0.28	5
	1	S 202 P-C 1	2CDS 282 001 R0014	590358			0.28	5
	1.6	S 202 P-C 1.6	2CDS 282 001 R0974	590365			0.28	5
	2	S 202 P-C 2	2CDS 282 001 R0024	590372			0.28	5
	3	S 202 P-C 3	2CDS 282 001 R0034	590389			0.28	5
	4	S 202 P-C 4	2CDS 282 001 R0044	590396			0.28	5
	6	S 202 P-C 6	2CDS 282 001 R0064	590402			0.28	5
	8	S 202 P-C 8	2CDS 282 001 R0084	590419			0.28	5
	10	S 202 P-C 10	2CDS 282 001 R0104	590426			0.28	5
	13	S 202 P-C 13	2CDS 282 001 R0134	590433			0.28	5
	16	S 202 P-C 16	2CDS 282 001 R0164	590440			0.28	5
	20	S 202 P-C 20	2CDS 282 001 R0204	590457			0.28	5
	25	S 202 P-C 25	2CDS 282 001 R0254	590464			0.28	5
	32	S 202 P-C 32	2CDS 282 001 R0324	590471			0.28	5
	40	S 202 P-C 40	2CDS 282 001 R0404	590488			0.28	5
	50	S 202 P-C 50	2CDS 282 001 R0504	590495			0.28	5
63	S 202 P-C 63	2CDS 282 001 R0634	590501			0.28	5	
3	0.5	S 203 P-C 0.5	2CDS 283 001 R0984	590518			0.42	1
	1	S 203 P-C 1	2CDS 283 001 R0014	590525			0.42	1
	1.6	S 203 P-C 1.6	2CDS 283 001 R0974	590532			0.42	1
	2	S 203 P-C 2	2CDS 283 001 R0024	590549			0.42	1
	3	S 203 P-C 3	2CDS 283 001 R0034	590556			0.42	1
	4	S 203 P-C 4	2CDS 283 001 R0044	590563			0.42	1
	6	S 203 P-C 6	2CDS 283 001 R0064	590570			0.42	1
	8	S 203 P-C 8	2CDS 283 001 R0084	590587			0.42	1
	10	S 203 P-C 10	2CDS 283 001 R0104	590594			0.42	1
	13	S 203 P-C 13	2CDS 283 001 R0134	590600			0.42	1
	16	S 203 P-C 16	2CDS 283 001 R0164	590617			0.42	1
	20	S 203 P-C 20	2CDS 283 001 R0204	590624			0.42	1
	25	S 203 P-C 25	2CDS 283 001 R0254	590631			0.42	1
	32	S 203 P-C 32	2CDS 283 001 R0324	590648			0.42	1
	40	S 203 P-C 40	2CDS 283 001 R0404	590655			0.42	1
	50	S 203 P-C 50	2CDS 283 001 R0504	590662			0.42	1
63	S 203 P-C 63	2CDS 283 001 R0634	590679			0.42	1	



4	0.5	<b>S 204 P-C 0.5</b>	2CDS 284 001 R0984	<b>590686</b>	0.56	1
	1	<b>S 204 P-C 1</b>	2CDS 284 001 R0014	<b>590693</b>	0.56	1
	1.6	<b>S 204 P-C 1.6</b>	2CDS 284 001 R0974	<b>590709</b>	0.56	1
	2	<b>S 204 P-C 2</b>	2CDS 284 001 R0024	<b>590716</b>	0.56	1
	3	<b>S 204 P-C 3</b>	2CDS 284 001 R0034	<b>590723</b>	0.56	1
	4	<b>S 204 P-C 4</b>	2CDS 284 001 R0044	<b>590730</b>	0.56	1
	6	<b>S 204 P-C 6</b>	2CDS 284 001 R0064	<b>590747</b>	0.56	1
	8	<b>S 204 P-C 8</b>	2CDS 284 001 R0084	<b>590754</b>	0.56	1
	10	<b>S 204 P-C 10</b>	2CDS 284 001 R0104	<b>590761</b>	0.56	1
	13	<b>S 204 P-C 13</b>	2CDS 284 001 R0134	<b>590778</b>	0.56	1
	16	<b>S 204 P-C 16</b>	2CDS 284 001 R0164	<b>590785</b>	0.56	1
	20	<b>S 204 P-C 20</b>	2CDS 284 001 R0204	<b>590792</b>	0.56	1
	25	<b>S 204 P-C 25</b>	2CDS 284 001 R0254	<b>590808</b>	0.56	1
	32	<b>S 204 P-C 32</b>	2CDS 284 001 R0324	<b>590815</b>	0.56	1
	40	<b>S 204 P-C 40</b>	2CDS 284 001 R0404	<b>590822</b>	0.56	1
	50	<b>S 204 P-C 50</b>	2CDS 284 001 R0504	<b>590839</b>	0.56	1
④	63	<b>S 204 P-C 63</b>	2CDS 284 001 R0634	<b>590846</b>	0.56	1

- ① suitable for flow-type heaters 12 kW
- ② suitable for flow-type heaters 18 kW
- ③ suitable for flow-type heaters 21, 24 and 27 kW
- ④  $U_{Bmax}$  125 V ∴ with 2 poles connected in series

With disconnecting neutral NA

Number of poles	Rated current In A	Order details Type code	Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				EAN				
1 + NA	0.5	<b>S 201 P-C 0.5 NA</b>	2CDS 281 103 R0984	<b>590853</b>			0.28	5
	1	<b>S 201 P-C 1 NA</b>	2CDS 281 103 R0014	<b>590860</b>			0.28	5
	1.6	<b>S 201 P-C 1.6 NA</b>	2CDS 281 103 R0974	<b>590877</b>			0.28	5
	2	<b>S 201 P-C 2 NA</b>	2CDS 281 103 R0024	<b>590884</b>			0.28	5
	3	<b>S 201 P-C 3 NA</b>	2CDS 281 103 R0034	<b>590891</b>			0.28	5
	4	<b>S 201 P-C 4 NA</b>	2CDS 281 103 R0044	<b>590907</b>			0.28	5
	6	<b>S 201 P-C 6 NA</b>	2CDS 281 103 R0064	<b>590914</b>			0.28	5
	8	<b>S 201 P-C 8 NA</b>	2CDS 281 103 R0084	<b>590921</b>			0.28	5
	10	<b>S 201 P-C 10 NA</b>	2CDS 281 103 R0104	<b>590938</b>			0.28	5
	13	<b>S 201 P-C 13 NA</b>	2CDS 281 103 R0134	<b>590945</b>			0.28	5
	16	<b>S 201 P-C 16 NA</b>	2CDS 281 103 R0164	<b>590952</b>			0.28	5
	20	<b>S 201 P-C 20 NA</b>	2CDS 281 103 R0204	<b>590969</b>			0.28	5
	25	<b>S 201 P-C 25 NA</b>	2CDS 281 103 R0254	<b>590976</b>			0.28	5
	32	<b>S 201 P-C 32 NA</b>	2CDS 281 103 R0324	<b>590983</b>			0.28	5
	40	<b>S 201 P-C 40 NA</b>	2CDS 281 103 R0404	<b>590990</b>			0.28	5
	50	<b>S 201 P-C 50 NA</b>	2CDS 281 103 R0504	<b>591003</b>			0.28	5
60 V ∴	63	<b>S 201 P-C 63 NA</b>	2CDS 281 103 R0634	<b>591010</b>			0.28	5

3 + NA	0.5	<b>S 203 P-C 0.5 NA</b>	2CDS 283 103 R0984	<b>591027</b>			0.56	1
	1	<b>S 203 P-C 1 NA</b>	2CDS 283 103 R0014	<b>591034</b>			0.56	1
	1.6	<b>S 203 P-C 1.6 NA</b>	2CDS 283 103 R0974	<b>591041</b>			0.56	1
	2	<b>S 203 P-C 2 NA</b>	2CDS 283 103 R0024	<b>591058</b>			0.56	1
	3	<b>S 203 P-C 3 NA</b>	2CDS 283 103 R0034	<b>591065</b>			0.56	1
	4	<b>S 203 P-C 4 NA</b>	2CDS 283 103 R0044	<b>591072</b>			0.56	1
	6	<b>S 203 P-C 6 NA</b>	2CDS 283 103 R0064	<b>591089</b>			0.56	1
	8	<b>S 203 P-C 8 NA</b>	2CDS 283 103 R0084	<b>591096</b>			0.56	1
	10	<b>S 203 P-C 10 NA</b>	2CDS 283 103 R0104	<b>591102</b>			0.56	1
	13	<b>S 203 P-C 13 NA</b>	2CDS 283 103 R0134	<b>591119</b>			0.56	1
	16	<b>S 203 P-C 16 NA</b>	2CDS 283 103 R0164	<b>591126</b>			0.56	1
	20	<b>S 203 P-C 20 NA</b>	2CDS 283 103 R0204	<b>591133</b>			0.56	1
	25	<b>S 203 P-C 25 NA</b>	2CDS 283 103 R0254	<b>591140</b>			0.56	1
	32	<b>S 203 P-C 32 NA</b>	2CDS 283 103 R0324	<b>591157</b>			0.56	1
	40	<b>S 203 P-C 40 NA</b>	2CDS 283 103 R0404	<b>591164</b>			0.56	1
	50	<b>S 203 P-C 50 NA</b>	2CDS 283 103 R0504	<b>591171</b>			0.56	1
63	<b>S 203 P-C 63 NA</b>	2CDS 283 103 R0634	<b>591188</b>			0.56	1	



25000 - 15000

D

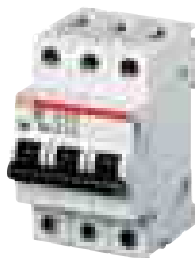
2



2CDC 021 100 F0004



2CDC 021 101 F0004



2CDC 021 102 F0004



### S 200 P-D characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for circuits which supply loads with high inrush current at the circuit closing (LV/LV transformers, breakdown lamps).

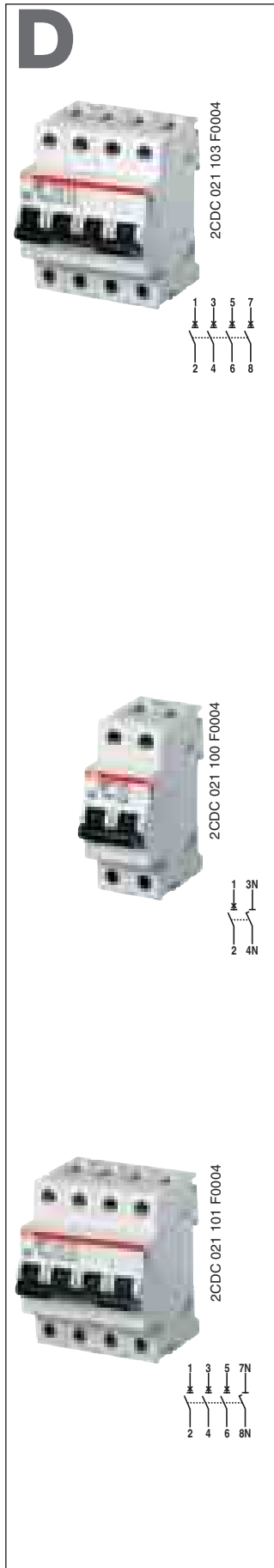
Applications: commercial and industrial.

Standard: IEC/EN 60898

I<sub>cn</sub>=25 kA for 0.5 A ≤ I<sub>n</sub> ≤ 25 A

I<sub>cn</sub>=15 kA for 32 A ≤ I<sub>n</sub> ≤ 63 A

Number of poles	Rated current In A	Order details Type code	Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779				
1	0.5	S 201 P-D 0.5	2CDS 281 001 R0981	591195			0.14	10
	1	S 201 P-D 1	2CDS 281 001 R0011	591201			0.14	10
	1.6	S 201 P-D 1.6	2CDS 281 001 R0971	591218			0.14	10
	2	S 201 P-D 2	2CDS 281 001 R0021	591225			0.14	10
	3	S 201 P-D 3	2CDS 281 001 R0031	591232			0.14	10
	4	S 201 P-D 4	2CDS 281 001 R0041	591249			0.14	10
	6	S 201 P-D 6	2CDS 281 001 R0061	591256			0.14	10
	8	S 201 P-D 8	2CDS 281 001 R0081	591263			0.14	10
	10	S 201 P-D 10	2CDS 281 001 R0101	591270			0.14	10
	13	S 201 P-D 13	2CDS 281 001 R0131	591287			0.14	10
	16	S 201 P-D 16	2CDS 281 001 R0161	591294			0.14	10
	20	S 201 P-D 20	2CDS 281 001 R0201	591300			0.14	10
	25	S 201 P-D 25	2CDS 281 001 R0251	591317			0.14	10
	32	S 201 P-D 32	2CDS 281 001 R0321	591324			0.14	10
	40	S 201 P-D 40	2CDS 281 001 R0401	591331			0.14	10
50	S 201 P-D 50	2CDS 281 001 R0501	591348			0.14	10	
60 V ...	63	S 201 P-D 63	2CDS 281 001 R0631	591355			0.14	10
2	0.5	S 202 P-D 0.5	2CDS 282 001 R0981	591362			0.28	5
	1	S 202 P-D 1	2CDS 282 001 R0011	591379			0.28	5
	1.6	S 202 P-D 1.6	2CDS 282 001 R0971	591386			0.28	5
	2	S 202 P-D 2	2CDS 282 001 R0021	591393			0.28	5
	3	S 202 P-D 3	2CDS 282 001 R0031	591409			0.28	5
	4	S 202 P-D 4	2CDS 282 001 R0041	591416			0.28	5
	6	S 202 P-D 6	2CDS 282 001 R0061	591423			0.28	5
	8	S 202 P-D 8	2CDS 282 001 R0081	591430			0.28	5
	10	S 202 P-D 10	2CDS 282 001 R0101	591447			0.28	5
	13	S 202 P-D 13	2CDS 282 001 R0131	591454			0.28	5
	16	S 202 P-D 16	2CDS 282 001 R0161	591461			0.28	5
	20	S 202 P-D 20	2CDS 282 001 R0201	591478			0.28	5
	25	S 202 P-D 25	2CDS 282 001 R0251	591485			0.28	5
	32	S 202 P-D 32	2CDS 282 001 R0321	591492			0.28	5
	40	S 202 P-D 40	2CDS 282 001 R0401	591508			0.28	5
125 V ...	50	S 202 P-D 50	2CDS 282 001 R0501	591515			0.28	5
④	63	S 202 P-D 63	2CDS 282 001 R0631	591522			0.28	5
3	0.5	S 203 P-D 0.5	2CDS 283 001 R0981	591539			0.42	1
	1	S 203 P-D 1	2CDS 283 001 R0011	591546			0.42	1
	1.6	S 203 P-D 1.6	2CDS 283 001 R0971	591553			0.42	1
	2	S 203 P-D 2	2CDS 283 001 R0021	591560			0.42	1
	3	S 203 P-D 3	2CDS 283 001 R0031	591577			0.42	1
	4	S 203 P-D 4	2CDS 283 001 R0041	591584			0.42	1
	6	S 203 P-D 6	2CDS 283 001 R0061	591591			0.42	1
	8	S 203 P-D 8	2CDS 283 001 R0081	591607			0.42	1
	10	S 203 P-D 10	2CDS 283 001 R0101	591614			0.42	1
	13	S 203 P-D 13	2CDS 283 001 R0131	591621			0.42	1
	16	S 203 P-D 16	2CDS 283 001 R0161	591638			0.42	1
	20	S 203 P-D 20	2CDS 283 001 R0201	591645			0.42	1
	25	S 203 P-D 25	2CDS 283 001 R0251	591652			0.42	1
	32	S 203 P-D 32	2CDS 283 001 R0321	591669			0.42	1
	40	S 203 P-D 40	2CDS 283 001 R0401	591676			0.42	1
50	S 203 P-D 50	2CDS 283 001 R0501	591683			0.42	1	
440 V ~	63	S 203 P-D 63	2CDS 283 001 R0631	591690			0.42	1



Number of poles	Rated current In A	Order details	Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
4	0.5	S 204 P-D 0.5	2CDS 284 001 R0981	591706	0.56	1		
	1	S 204 P-D 1	2CDS 284 001 R0011	591713	0.56	1		
	1.6	S 204 P-D 1.6	2CDS 284 001 R0971	591720	0.56	1		
	2	S 204 P-D 2	2CDS 284 001 R0021	591737	0.56	1		
	3	S 204 P-D 3	2CDS 284 001 R0031	591744	0.56	1		
	4	S 204 P-D 4	2CDS 284 001 R0041	591751	0.56	1		
	6	S 204 P-D 6	2CDS 284 001 R0061	591768	0.56	1		
	8	S 204 P-D 8	2CDS 284 001 R0081	591775	0.56	1		
	10	S 204 P-D 10	2CDS 284 001 R0101	591782	0.56	1		
	13	S 204 P-D 13	2CDS 284 001 R0131	591799	0.56	1		
	16	S 204 P-D 16	2CDS 284 001 R0161	591805	0.56	1		
	20	S 204 P-D 20	2CDS 284 001 R0201	591812	0.56	1		
	25	S 204 P-D 25	2CDS 284 001 R0251	591829	0.56	1		
	32	S 204 P-D 32	2CDS 284 001 R0321	591836	0.56	1		
U <sub>Bmax</sub> 440 V ~	40	S 204 P-D 40	2CDS 284 001 R0401	591843	0.56	1		
	50	S 204 P-D 50	2CDS 284 001 R0501	591850	0.56	1		
	63	S 204 P-D 63	2CDS 284 001 R0631	591867	0.56	1		

- ① suitable for flow-type heaters 12 kW
- ② suitable for flow-type heaters 18 kW
- ③ suitable for flow-type heaters 21, 24 and 27 kW
- ④ U<sub>Bmax</sub> 125 V ... with 2 poles connected in series

With disconnecting neutral NA

Number of poles	Rated current In A	Order details	Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1 + NA	0.5	S 201 P-D 0.5 NA	2CDS 281 103 R0981	591874	0.28	5		
	1	S 201 P-D 1 NA	2CDS 281 103 R0011	591881	0.28	5		
	1.6	S 201 P-D 1.6 NA	2CDS 281 103 R0971	591898	0.28	5		
	2	S 201 P-D 2 NA	2CDS 281 103 R0021	591904	0.28	5		
	3	S 201 P-D 3 NA	2CDS 281 103 R0031	591911	0.28	5		
	4	S 201 P-D 4 NA	2CDS 281 103 R0041	591928	0.28	5		
	6	S 201 P-D 6 NA	2CDS 281 103 R0061	591935	0.28	5		
	8	S 201 P-D 8 NA	2CDS 281 103 R0081	591942	0.28	5		
	10	S 201 P-D 10 NA	2CDS 281 103 R0101	591959	0.28	5		
	13	S 201 P-D 13 NA	2CDS 281 103 R0131	591966	0.28	5		
	16	S 201 P-D 16 NA	2CDS 281 103 R0161	591973	0.28	5		
	20	S 201 P-D 20 NA	2CDS 281 103 R0201	591980	0.28	5		
	25	S 201 P-D 25 NA	2CDS 281 103 R0251	591997	0.28	5		
	32	S 201 P-D 32 NA	2CDS 281 103 R0321	592000	0.28	5		
U <sub>Bmax</sub> 440 V ~	40	S 201 P-D 40 NA	2CDS 281 103 R0401	592017	0.28	5		
	50	S 201 P-D 50 NA	2CDS 281 103 R0501	592024	0.28	5		
	63	S 201 P-D 63 NA	2CDS 281 103 R0631	592031	0.28	5		
3 + NA	0.5	S 203 P-D 0.5 NA	2CDS 283 103 R0981	592048	0.56	1		
	1	S 203 P-D 1 NA	2CDS 283 103 R0011	592055	0.56	1		
	1.6	S 203 P-D 1.6 NA	2CDS 283 103 R0971	592062	0.56	1		
	2	S 203 P-D 2 NA	2CDS 283 103 R0021	592079	0.56	1		
	3	S 203 P-D 3 NA	2CDS 283 103 R0031	592086	0.56	1		
	4	S 203 P-D 4 NA	2CDS 283 103 R0041	592093	0.56	1		
	6	S 203 P-D 6 NA	2CDS 283 103 R0061	592109	0.56	1		
	8	S 203 P-D 8 NA	2CDS 283 103 R0081	592116	0.56	1		
	10	S 203 P-D 10 NA	2CDS 283 103 R0101	592123	0.56	1		
	13	S 203 P-D 13 NA	2CDS 283 103 R0131	592130	0.56	1		
	16	S 203 P-D 16 NA	2CDS 283 103 R0161	592147	0.56	1		
	20	S 203 P-D 20 NA	2CDS 283 103 R0201	592154	0.56	1		
	25	S 203 P-D 25 NA	2CDS 283 103 R0251	592161	0.56	1		
	32	S 203 P-D 32 NA	2CDS 283 103 R0321	592178	0.56	1		
U <sub>Bmax</sub> 440 V ~	40	S 203 P-D 40 NA	2CDS 283 103 R0401	592185	0.56	1		
	50	S 203 P-D 50 NA	2CDS 283 103 R0501	592192	0.56	1		
	63	S 203 P-D 63 NA	2CDS 283 103 R0631	592208	0.56	1		

K

2



1  
2



1 3  
2 4



1 3 5  
2 4 6

### S 200 P-K characteristic

Function: protection and control of the circuits like motors, transformers and auxiliary circuits, against overloads and short-circuits.

Advantages: no nuisance tripping in the case of functional peak currents up to  $8I_n$ , depending on the series; through its highly sensitive thermostatic bimetal trip, the K-type characteristic offers protection to damageable elements in the overcurrent range; it also provides the best protection to cables and lines.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2, VDE 0660 Part 101

$I_{cu}=25$  kA for  $0.5 A \leq I_n \leq 25 A$ ;  $I_{cu}=15$  kA for  $32 A \leq I_n \leq 63 A$  (acc. to VDE 0660 Part 101)

Number of poles	Rated current In A	Order details Type code	Order code	Bhn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779 EAN				
1	0.2	S 201 P-K 0.2	2CDS 281 001 R0087	592215			0.14	10
	0.3	S 201 P-K 0.3	2CDS 281 001 R0117	592222			0.14	10
	0.5	S 201 P-K 0.5	2CDS 281 001 R0157	592239			0.14	10
	0.75	S 201 P-K 0.75	2CDS 281 001 R0187	592246			0.14	10
	1	S 201 P-K 1	2CDS 281 001 R0217	592253			0.14	10
	1.6	S 201 P-K 1.6	2CDS 281 001 R0257	592260			0.14	10
	2	S 201 P-K 2	2CDS 281 001 R0277	592277			0.14	10
	3	S 201 P-K 3	2CDS 281 001 R0317	592284			0.14	10
	4	S 201 P-K 4	2CDS 281 001 R0337	592291			0.14	10
	6	S 201 P-K 6	2CDS 281 001 R0377	592307			0.14	10
	8	S 201 P-K 8	2CDS 281 001 R0407	592314			0.14	10
	10	S 201 P-K 10	2CDS 281 001 R0427	592321			0.14	10
	13	S 201 P-K 13	2CDS 281 001 R0447	592338			0.14	10
	16	S 201 P-K 16	2CDS 281 001 R0467	592345			0.14	10
	20	S 201 P-K 20	2CDS 281 001 R0487	592352			0.14	10
	25	S 201 P-K 25	2CDS 281 001 R0517	592369			0.14	10
	32	S 201 P-K 32	2CDS 281 001 R0537	592376			0.14	10
	40	S 201 P-K 40	2CDS 281 001 R0557	592383			0.14	10
	50	S 201 P-K 50	2CDS 281 001 R0577	592390			0.14	10
	63	S 201 P-K 63	2CDS 281 001 R0607	592406			0.14	10
2	0.2	S 202 P-K 0.2	2CDS 282 001 R0087	592413			0.28	5
	0.3	S 202 P-K 0.3	2CDS 282 001 R0117	592420			0.28	5
	0.5	S 202 P-K 0.5	2CDS 282 001 R0157	592437			0.28	5
	0.75	S 202 P-K 0.75	2CDS 282 001 R0187	592444			0.28	5
	1	S 202 P-K 1	2CDS 282 001 R0217	592451			0.28	5
	1.6	S 202 P-K 1.6	2CDS 282 001 R0257	592468			0.28	5
	2	S 202 P-K 2	2CDS 282 001 R0277	592475			0.28	5
	3	S 202 P-K 3	2CDS 282 001 R0317	592482			0.28	5
	4	S 202 P-K 4	2CDS 282 001 R0337	592499			0.28	5
	6	S 202 P-K 6	2CDS 282 001 R0377	592505			0.28	5
	8	S 202 P-K 8	2CDS 282 001 R0407	592512			0.28	5
	10	S 202 P-K 10	2CDS 282 001 R0427	592529			0.28	5
	13	S 202 P-K 13	2CDS 282 001 R0447	592536			0.28	5
	16	S 202 P-K 16	2CDS 282 001 R0467	592543			0.28	5
	20	S 202 P-K 20	2CDS 282 001 R0487	592550			0.28	5
	25	S 202 P-K 25	2CDS 282 001 R0517	592567			0.28	5
	32	S 202 P-K 32	2CDS 282 001 R0537	592574			0.28	5
	40	S 202 P-K 40	2CDS 282 001 R0557	592581			0.28	5
	50	S 202 P-K 50	2CDS 282 001 R0577	592598			0.28	5
	63	S 202 P-K 63	2CDS 282 001 R0607	592604			0.28	5
3	0.2	S 203 P-K 0.2	2CDS 283 001 R0087	592611			0.42	1
	0.3	S 203 P-K 0.3	2CDS 283 001 R0117	592628			0.42	1
	0.5	S 203 P-K 0.5	2CDS 283 001 R0157	592635			0.42	1
	0.75	S 203 P-K 0.75	2CDS 283 001 R0187	592642			0.42	1
	1	S 203 P-K 1	2CDS 283 001 R0217	592659			0.42	1
	1.6	S 203 P-K 1.6	2CDS 283 001 R0257	592666			0.42	1
	2	S 203 P-K 2	2CDS 283 001 R0277	592673			0.42	1
	3	S 203 P-K 3	2CDS 283 001 R0317	592680			0.42	1
	4	S 203 P-K 4	2CDS 283 001 R0337	592697			0.42	1
	6	S 203 P-K 6	2CDS 283 001 R0377	592703			0.42	1
	8	S 203 P-K 8	2CDS 283 001 R0407	592710			0.42	1
	10	S 203 P-K 10	2CDS 283 001 R0427	592727			0.42	1
	13	S 203 P-K 13	2CDS 283 001 R0447	592734			0.42	1
	16	S 203 P-K 16	2CDS 283 001 R0467	592741			0.42	1
20	S 203 P-K 20	2CDS 283 001 R0487	592758			0.42	1	

$U_{Bmax}$   
440 V ~  
60 V ...

$U_{Bmax}$   
440 V ~  
125 V ...  
①

$U_{Bmax}$   
440 V ~

**25000 - 15000**



25	<b>S 203 P-K 25</b>	2CDS 283 001 R0517	<b>592765</b>	0.42	1
32	<b>S 203 P-K 32</b>	2CDS 283 001 R0537	<b>592772</b>	0.42	1
40	<b>S 203 P-K 40</b>	2CDS 283 001 R0557	<b>592789</b>	0.42	1
50	<b>S 203 P-K 50</b>	2CDS 283 001 R0577	<b>592796</b>	0.42	1
63	<b>S 203 P-K 63</b>	2CDS 283 001 R0607	<b>592802</b>	0.42	1
<hr/>					
4	0.2 <b>S 204 P-K 0.2</b>	2CDS 284 001 R0087	<b>592819</b>	0.56	1
	0.3 <b>S 204 P-K 0.3</b>	2CDS 284 001 R0117	<b>592826</b>	0.56	1
	0.5 <b>S 204 P-K 0.5</b>	2CDS 284 001 R0157	<b>592833</b>	0.56	1
	0.75 <b>S 204 P-K 0.75</b>	2CDS 284 001 R0187	<b>592840</b>	0.56	1
	1 <b>S 204 P-K 1</b>	2CDS 284 001 R0217	<b>592857</b>	0.56	1
	1.6 <b>S 204 P-K 1.6</b>	2CDS 284 001 R0257	<b>592864</b>	0.56	1
	2 <b>S 204 P-K 2</b>	2CDS 284 001 R0277	<b>592871</b>	0.56	1
	3 <b>S 204 P-K 3</b>	2CDS 284 001 R0317	<b>592888</b>	0.56	1
	4 <b>S 204 P-K 4</b>	2CDS 284 001 R0337	<b>592895</b>	0.56	1
	6 <b>S 204 P-K 6</b>	2CDS 284 001 R0377	<b>592901</b>	0.56	1
	8 <b>S 204 P-K 8</b>	2CDS 284 001 R0407	<b>592918</b>	0.56	1
	10 <b>S 204 P-K 10</b>	2CDS 284 001 R0427	<b>592925</b>	0.56	1
	13 <b>S 204 P-K 13</b>	2CDS 284 001 R0447	<b>592932</b>	0.56	1
	16 <b>S 204 P-K 16</b>	2CDS 284 001 R0467	<b>592949</b>	0.56	1
	20 <b>S 204 P-K 20</b>	2CDS 284 001 R0487	<b>592956</b>	0.56	1
	25 <b>S 204 P-K 25</b>	2CDS 284 001 R0517	<b>592963</b>	0.56	1
	32 <b>S 204 P-K 32</b>	2CDS 284 001 R0537	<b>592970</b>	0.56	1
	40 <b>S 204 P-K 40</b>	2CDS 284 001 R0557	<b>592987</b>	0.56	1
	50 <b>S 204 P-K 50</b>	2CDS 284 001 R0577	<b>592994</b>	0.56	1
	63 <b>S 204 P-K 63</b>	2CDS 284 001 R0607	<b>593007</b>	0.56	1

$U_{Bmax}$   
440 V ~  
60 V ∴

①  $U_{Bmax}$  125 V ∴ with 2 poles connected in series

With disconnecting neutral NA

Number of poles	Rated current In A	Order details Type code	Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779 EAN				
1 + NA	0.2	<b>S 201 P-K 0.2 NA</b>	2CDS 281 103 R0087	<b>593014</b>			0.28	5
	0.3	<b>S 201 P-K 0.3 NA</b>	2CDS 281 103 R0117	<b>593021</b>			0.28	5
	0.5	<b>S 201 P-K 0.5 NA</b>	2CDS 281 103 R0157	<b>593038</b>			0.28	5
	0.75	<b>S 201 P-K 0.75 NA</b>	2CDS 281 103 R0187	<b>593045</b>			0.28	5
	1	<b>S 201 P-K 1 NA</b>	2CDS 281 103 R0217	<b>593052</b>			0.28	5
	1.6	<b>S 201 P-K 1.6 NA</b>	2CDS 281 103 R0257	<b>593069</b>			0.28	5
	2	<b>S 201 P-K 2 NA</b>	2CDS 281 103 R0277	<b>593076</b>			0.28	5
	3	<b>S 201 P-K 3 NA</b>	2CDS 281 103 R0317	<b>593083</b>			0.28	5
	4	<b>S 201 P-K 4 NA</b>	2CDS 281 103 R0337	<b>593090</b>			0.28	5
	6	<b>S 201 P-K 6 NA</b>	2CDS 281 103 R0377	<b>593106</b>			0.28	5
	8	<b>S 201 P-K 8 NA</b>	2CDS 281 103 R0407	<b>593113</b>			0.28	5
	10	<b>S 201 P-K 10 NA</b>	2CDS 281 103 R0427	<b>593120</b>			0.28	5
	13	<b>S 201 P-K 13 NA</b>	2CDS 281 103 R0447	<b>593137</b>			0.28	5
	16	<b>S 201 P-K 16 NA</b>	2CDS 281 103 R0467	<b>593144</b>			0.28	5
20	<b>S 201 P-K 20 NA</b>	2CDS 281 103 R0487	<b>593151</b>			0.28	5	
25	<b>S 201 P-K 25 NA</b>	2CDS 281 103 R0517	<b>593168</b>			0.28	5	
32	<b>S 201 P-K 32 NA</b>	2CDS 281 103 R0537	<b>593175</b>			0.28	5	
40	<b>S 201 P-K 40 NA</b>	2CDS 281 103 R0557	<b>593182</b>			0.28	5	
50	<b>S 201 P-K 50 NA</b>	2CDS 281 103 R0577	<b>593199</b>			0.28	5	
63	<b>S 201 P-K 63 NA</b>	2CDS 281 103 R0607	<b>593205</b>			0.28	5	
<hr/>								
3 + NA	0.2	<b>S 203 P-K 0.2 NA</b>	2CDS 283 103 R0087	<b>593212</b>			0.56	2
	0.3	<b>S 203 P-K 0.3 NA</b>	2CDS 283 103 R0117	<b>593229</b>			0.56	2
	0.5	<b>S 203 P-K 0.5 NA</b>	2CDS 283 103 R0157	<b>593236</b>			0.56	2
	0.75	<b>S 203 P-K 0.75 NA</b>	2CDS 283 103 R0187	<b>593243</b>			0.56	2
	1	<b>S 203 P-K 1 NA</b>	2CDS 283 103 R0217	<b>593250</b>			0.56	2
	1.6	<b>S 203 P-K 1.6 NA</b>	2CDS 283 103 R0257	<b>593267</b>			0.56	2
	2	<b>S 203 P-K 2 NA</b>	2CDS 283 103 R0277	<b>593274</b>			0.56	2
	3	<b>S 203 P-K 3 NA</b>	2CDS 283 103 R0317	<b>593281</b>			0.56	2
	4	<b>S 203 P-K 4 NA</b>	2CDS 283 103 R0337	<b>593298</b>			0.56	2
	6	<b>S 203 P-K 6 NA</b>	2CDS 283 103 R0377	<b>593304</b>			0.56	2
	8	<b>S 203 P-K 8 NA</b>	2CDS 283 103 R0407	<b>593311</b>			0.56	2
	10	<b>S 203 P-K 10 NA</b>	2CDS 283 103 R0427	<b>593328</b>			0.56	2
	13	<b>S 203 P-K 13 NA</b>	2CDS 283 103 R0447	<b>593335</b>			0.56	2
	16	<b>S 203 P-K 16 NA</b>	2CDS 283 103 R0467	<b>593342</b>			0.56	2
20	<b>S 203 P-K 20 NA</b>	2CDS 283 103 R0487	<b>593359</b>			0.56	2	
25	<b>S 203 P-K 25 NA</b>	2CDS 283 103 R0517	<b>593366</b>			0.56	2	
32	<b>S 203 P-K 32 NA</b>	2CDS 283 103 R0537	<b>593373</b>			0.56	2	
40	<b>S 203 P-K 40 NA</b>	2CDS 283 103 R0557	<b>593380</b>			0.56	2	
50	<b>S 203 P-K 50 NA</b>	2CDS 283 103 R0577	<b>593397</b>			0.56	2	
63	<b>S 203 P-K 63 NA</b>	2CDS 283 103 R0607	<b>593403</b>			0.56	2	

$U_{Bmax}$   
440 V ~

Z

2

### S 200 P-Z characteristic

Function: protection and control of the electronic circuits against weak and long duration overloads and short-circuits.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2, VDE 0660 Part 101

I<sub>cu</sub>=25 kA for 0.5 A ≤ I<sub>n</sub> ≤ 25 A; I<sub>cu</sub>=15 kA for 32 A ≤ I<sub>n</sub> ≤ 63 A (acc. to VDE 0660 Part 101)

Number of poles	Rated current In A	Order details Type code	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1	0.5	S 201 P-Z 0.5	2CDS 281 001 R0158	593410			0.14	10
	1	S 201 P-Z 1	2CDS 281 001 R0218	593427			0.14	10
	1.6	S 201 P-Z 1.6	2CDS 281 001 R0258	593434			0.14	10
	2	S 201 P-Z 2	2CDS 281 001 R0278	593441			0.14	10
	3	S 201 P-Z 3	2CDS 281 001 R0318	593458			0.14	10
	4	S 201 P-Z 4	2CDS 281 001 R0338	593465			0.14	10
	6	S 201 P-Z 6	2CDS 281 001 R0378	593472			0.14	10
	8	S 201 P-Z 8	2CDS 281 001 R0408	593489			0.14	10
	10	S 201 P-Z 10	2CDS 281 001 R0428	593496			0.14	10
	16	S 201 P-Z 16	2CDS 281 001 R0468	593502			0.14	10
	20	S 201 P-Z 20	2CDS 281 001 R0488	593519			0.14	10
	25	S 201 P-Z 25	2CDS 281 001 R0518	593526			0.14	10
	32	S 201 P-Z 32	2CDS 281 001 R0538	593533			0.14	10
	40	S 201 P-Z 40	2CDS 281 001 R0558	593540			0.14	10
	50	S 201 P-Z 50	2CDS 281 001 R0578	593557			0.14	10
63	S 201 P-Z 63	2CDS 281 001 R0608	593564			0.14	10	
U <sub>Bmax</sub> 440 V ~ 60 V ...								
2	0.5	S 202 P-Z 0.5	2CDS 282 001 R0158	593571			0.28	5
	1	S 202 P-Z 1	2CDS 282 001 R0218	593588			0.28	5
	1.6	S 202 P-Z 1.6	2CDS 282 001 R0258	593595			0.28	5
	2	S 202 P-Z 2	2CDS 282 001 R0278	593601			0.28	5
	3	S 202 P-Z 3	2CDS 282 001 R0318	593618			0.28	5
	4	S 202 P-Z 4	2CDS 282 001 R0338	593625			0.28	5
	6	S 202 P-Z 6	2CDS 282 001 R0378	593632			0.28	5
	8	S 202 P-Z 8	2CDS 282 001 R0408	593649			0.28	5
	10	S 202 P-Z 10	2CDS 282 001 R0428	593656			0.28	5
	16	S 202 P-Z 16	2CDS 282 001 R0468	593663			0.28	5
	20	S 202 P-Z 20	2CDS 282 001 R0488	593670			0.28	5
	25	S 202 P-Z 25	2CDS 282 001 R0518	593687			0.28	5
	32	S 202 P-Z 32	2CDS 282 001 R0538	593694			0.28	5
	40	S 202 P-Z 40	2CDS 282 001 R0558	593700			0.28	5
	50	S 202 P-Z 50	2CDS 282 001 R0578	593717			0.28	5
63	S 202 P-Z 63	2CDS 282 001 R0608	593724			0.28	5	
U <sub>Bmax</sub> 440 V ~ 125 V ...								
3	0.5	S 203 P-Z 0.5	2CDS 283 001 R0158	593731			0.42	1
	1	S 203 P-Z 1	2CDS 283 001 R0218	593748			0.42	1
	1.6	S 203 P-Z 1.6	2CDS 283 001 R0258	593755			0.42	1
	2	S 203 P-Z 2	2CDS 283 001 R0278	593762			0.42	1
	3	S 203 P-Z 3	2CDS 283 001 R0318	593779			0.42	1
	4	S 203 P-Z 4	2CDS 283 001 R0338	593786			0.42	1
	6	S 203 P-Z 6	2CDS 283 001 R0378	593793			0.42	1
	8	S 203 P-Z 8	2CDS 283 001 R0408	593809			0.42	1
	10	S 203 P-Z 10	2CDS 283 001 R0428	593816			0.42	1
	16	S 203 P-Z 16	2CDS 283 001 R0468	593823			0.42	1
	20	S 203 P-Z 20	2CDS 283 001 R0488	593830			0.42	1
	25	S 203 P-Z 25	2CDS 283 001 R0518	593847			0.42	1
	32	S 203 P-Z 32	2CDS 283 001 R0538	593854			0.42	1
	40	S 203 P-Z 40	2CDS 283 001 R0558	593861			0.42	1
	50	S 203 P-Z 50	2CDS 283 001 R0578	593878			0.42	1
63	S 203 P-Z 63	2CDS 283 001 R0608	593885			0.42	1	
U <sub>Bmax</sub> 440 V ~								



25000 - 15000



4	0.5	S 204 P-Z 0.5	2CDS 284 001 R0158	593892	0.56	1
	1	S 204 P-Z 1	2CDS 284 001 R0218	593908	0.56	1
	1.6	S 204 P-Z 1.6	2CDS 284 001 R0258	593915	0.56	1
	2	S 204 P-Z 2	2CDS 284 001 R0278	593922	0.56	1
	3	S 204 P-Z 3	2CDS 284 001 R0318	593939	0.56	1
	4	S 204 P-Z 4	2CDS 284 001 R0338	593946	0.56	1
	6	S 204 P-Z 6	2CDS 284 001 R0378	593953	0.56	1
	8	S 204 P-Z 8	2CDS 284 001 R0408	593960	0.56	1
	10	S 204 P-Z 10	2CDS 284 001 R0428	593977	0.56	1
	16	S 204 P-Z 16	2CDS 284 001 R0468	593984	0.56	1
	20	S 204 P-Z 20	2CDS 284 001 R0488	593991	0.56	1
	25	S 204 P-Z 25	2CDS 284 001 R0518	594004	0.56	1
	32	S 204 P-Z 32	2CDS 284 001 R0538	594011	0.56	1
	40	S 204 P-Z 40	2CDS 284 001 R0558	594028	0.56	1
	50	S 204 P-Z 50	2CDS 284 001 R0578	594035	0.56	1
	63	S 204 P-Z 63	2CDS 284 001 R0608	594042	0.56	1

$U_{Bmax}$   
440 V ~  
125 V ...

①

①  $U_{Bmax}$  125 V ... with 2 poles connected in series

With disconnecting neutral NA

Number of poles	Rated current In A	Order details Type code	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1 + NA	0.5	S 201 P-Z 0.5 NA	2CDS 281 103 R0158	594059			0.28	5
	1	S 201 P-Z 1 NA	2CDS 281 103 R0218	594066			0.28	5
	1.6	S 201 P-Z 1.6 NA	2CDS 281 103 R0258	594073			0.28	5
	2	S 201 P-Z 2 NA	2CDS 281 103 R0278	594080			0.28	5
	3	S 201 P-Z 3 NA	2CDS 281 103 R0318	594097			0.28	5
	4	S 201 P-Z 4 NA	2CDS 281 103 R0338	594103			0.28	5
	6	S 201 P-Z 6 NA	2CDS 281 103 R0378	594110			0.28	5
	8	S 201 P-Z 8 NA	2CDS 281 103 R0408	594127			0.28	5
	10	S 201 P-Z 10 NA	2CDS 281 103 R0428	594134			0.28	5
	16	S 201 P-Z 16 NA	2CDS 281 103 R0468	594141			0.28	5
3 + NA	0.5	S 203 P-Z 0.5 NA	2CDS 283 103 R0158	594219			0.56	1
	1	S 203 P-Z 1 NA	2CDS 283 103 R0218	594226			0.56	1
	1.6	S 203 P-Z 1.6 NA	2CDS 283 103 R0258	594233			0.56	1
	2	S 203 P-Z 2 NA	2CDS 283 103 R0278	594240			0.56	1
	3	S 203 P-Z 3 NA	2CDS 283 103 R0318	594257			0.56	1
	4	S 203 P-Z 4 NA	2CDS 283 103 R0338	594264			0.56	1
	6	S 203 P-Z 6 NA	2CDS 283 103 R0378	594271			0.56	1
	8	S 203 P-Z 8 NA	2CDS 283 103 R0408	594288			0.56	1
	10	S 203 P-Z 10 NA	2CDS 283 103 R0428	594295			0.56	1
	16	S 203 P-Z 16 NA	2CDS 283 103 R0468	594301			0.56	1
50 + NA	20	S 203 P-Z 20 NA	2CDS 283 103 R0488	594318			0.56	1
	25	S 203 P-Z 25 NA	2CDS 283 103 R0518	594325			0.56	1
	32	S 203 P-Z 32 NA	2CDS 283 103 R0538	594332			0.56	1
	40	S 203 P-Z 40 NA	2CDS 283 103 R0558	594349			0.56	1
	50	S 203 P-Z 50 NA	2CDS 283 103 R0578	594356			0.56	1
	63	S 203 P-Z 63 NA	2CDS 283 103 R0608	594363			0.56	1

$U_{Bmax}$   
440 V ~  
60 V ...

$U_{Bmax}$   
440 V ~

10000

K

S 200 U-K characteristic

Function: protection and control of the electronic circuits against weak and long duration overloads and short-circuits.

Applications: commercial and industrial.

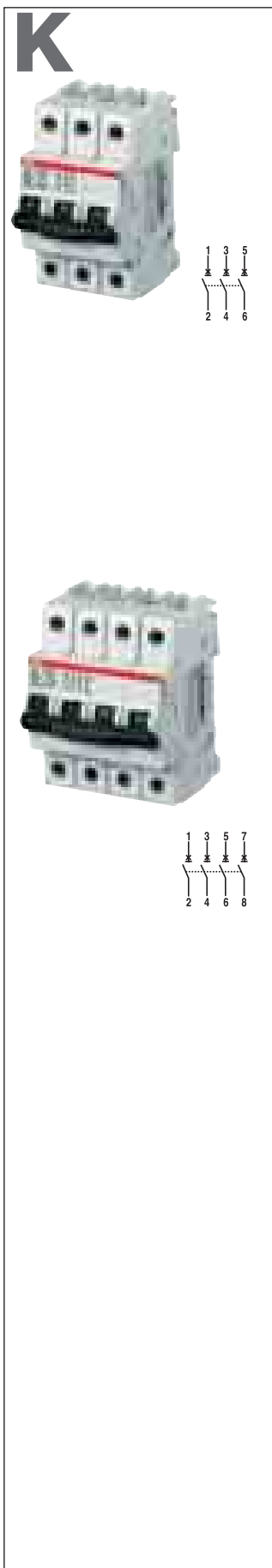
Standard: IEC/EN 60947-2, UL 489, CSA 22.2 No. 5

Number of poles	Rated current In A	Order details		Order code	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code			EAN				
1	0.2	S 201 U-K	0.2	2CDS 271 417 R0087	619226			0.14	10
	0.3	S 201 U-K	0.3	2CDS 271 417 R0117	619233			0.14	10
	0.5	S 201 U-K	0.5	2CDS 271 417 R0157	619240			0.14	10
	0.75	S 201 U-K	0.75	2CDS 271 417 R0187	619257			0.14	10
	1	S 201 U-K	1	2CDS 271 417 R0217	619264			0.14	10
	1.6	S 201 U-K	1.6	2CDS 271 417 R0257	619271			0.14	10
	2	S 201 U-K	2	2CDS 271 417 R0277	619288			0.14	10
	3	S 201 U-K	3	2CDS 271 417 R0317	619295			0.14	10
	4	S 201 U-K	4	2CDS 271 417 R0337	619301			0.14	10
	5	S 201 U-K	5	2CDS 271 417 R0357	619318			0.14	10
	6	S 201 U-K	6	2CDS 271 417 R0377	619325			0.14	10
	8	S 201 U-K	8	2CDS 271 417 R0407	619332			0.14	10
	10	S 201 U-K	10	2CDS 271 417 R0427	619349			0.14	10
	13	S 201 U-K	13	2CDS 271 417 R0447	619356			0.14	10
	15	S 201 U-K	15	2CDS 271 417 R0457	619363			0.14	10
	16	S 201 U-K	16	2CDS 271 417 R0467	619370			0.14	10
	20	S 201 U-K	20	2CDS 271 417 R0487	619387			0.14	10
	25	S 201 U-K	25	2CDS 271 417 R0517	619394			0.14	10
	30	S 201 U-K	30	2CDS 271 417 R0527	619400			0.14	10
	32	S 201 U-K	32	2CDS 271 417 R0537	619417			0.14	10
40	S 201 U-K	40	2CDS 271 417 R0557	619424			0.14	10	
50	S 201 U-K	50	2CDS 271 417 R0577	619431			0.14	10	
60	S 201 U-K	60	2CDS 271 417 R0587	619448			0.14	10	
63	S 201 U-K	63	2CDS 271 417 R0607	619455			0.14	10	
2	0.2	S 202 U-K	0.2	2CDS 272 417 R0087	619462			0.28	5
	0.3	S 202 U-K	0.3	2CDS 272 417 R0117	619479			0.28	5
	0.5	S 202 U-K	0.5	2CDS 272 417 R0157	619486			0.28	5
	0.75	S 202 U-K	0.75	2CDS 272 417 R0187	619493			0.28	5
	1	S 202 U-K	1	2CDS 272 417 R0217	619509			0.28	5
	1.6	S 202 U-K	1.6	2CDS 272 417 R0257	619516			0.28	5
	2	S 202 U-K	2	2CDS 272 417 R0277	619523			0.28	5
	3	S 202 U-K	3	2CDS 272 417 R0317	619530			0.28	5
	4	S 202 U-K	4	2CDS 272 417 R0337	619547			0.28	5
	5	S 202 U-K	5	2CDS 272 417 R0357	619554			0.28	5
	6	S 202 U-K	6	2CDS 272 417 R0377	619561			0.28	5
	8	S 202 U-K	8	2CDS 272 417 R0407	619578			0.28	5
	10	S 202 U-K	10	2CDS 272 417 R0427	619585			0.28	5
	13	S 202 U-K	13	2CDS 272 417 R0447	619592			0.28	5
	15	S 202 U-K	15	2CDS 272 417 R0457	619608			0.28	5
	16	S 202 U-K	16	2CDS 272 417 R0467	619615			0.28	5
	20	S 202 U-K	20	2CDS 272 417 R0487	619622			0.28	5
	25	S 202 U-K	25	2CDS 272 417 R0517	619639			0.28	5
	30	S 202 U-K	30	2CDS 272 417 R0527	619646			0.28	5
	32	S 202 U-K	32	2CDS 272 417 R0537	619653			0.28	5
40	S 202 U-K	40	2CDS 272 417 R0557	619660			0.28	5	
50	S 202 U-K	50	2CDS 272 417 R0577	619677			0.28	5	
60	S 202 U-K	60	2CDS 272 417 R0587	619684			0.28	5	
63	S 202 U-K	63	2CDS 272 417 R0607	619691			0.28	5	



10000

2



3	0.2	S 203 U-K 0.2	2CDS 273 417 R0087	619707	0.42	3
	0.3	S 203 U-K 0.3	2CDS 273 417 R0117	619714	0.42	3
	0.5	S 203 U-K 0.5	2CDS 273 417 R0157	619721	0.42	3
	0.75	S 203 U-K 0.75	2CDS 273 417 R0187	619738	0.42	3
	1	S 203 U-K 1	2CDS 273 417 R0217	619745	0.42	3
	1.6	S 203 U-K 1.6	2CDS 273 417 R0257	619752	0.42	3
	2	S 203 U-K 2	2CDS 273 417 R0277	619769	0.42	3
	3	S 203 U-K 3	2CDS 273 417 R0317	619776	0.42	3
	4	S 203 U-K 4	2CDS 273 417 R0337	619783	0.42	3
	5	S 203 U-K 5	2CDS 273 417 R0357	619790	0.42	3
	6	S 203 U-K 6	2CDS 273 417 R0377	619806	0.42	3
	8	S 203 U-K 8	2CDS 273 417 R0407	619813	0.42	3
	10	S 203 U-K 10	2CDS 273 417 R0427	619820	0.42	3
	13	S 203 U-K 13	2CDS 273 417 R0447	619837	0.42	3
	15	S 203 U-K 15	2CDS 273 417 R0457	619844	0.42	3
	16	S 203 U-K 16	2CDS 273 417 R0467	619851	0.42	3
	20	S 203 U-K 20	2CDS 273 417 R0487	619868	0.42	3
	25	S 203 U-K 25	2CDS 273 417 R0517	619875	0.42	3
	30	S 203 U-K 30	2CDS 273 417 R0527	619882	0.42	3
	32	S 203 U-K 32	2CDS 273 417 R0537	619899	0.42	3
40	S 203 U-K 40	2CDS 273 417 R0557	619905	0.42	3	
50	S 203 U-K 50	2CDS 273 417 R0577	619912	0.42	3	
60	S 203 U-K 60	2CDS 273 417 R0587	619929	0.42	3	
63	S 203 U-K 63	2CDS 273 417 R0607	619936	0.42	3	

4	0.2	S 204 U-K 0.2	2CDS 274 417 R0087	619943	0.56	2
	0.3	S 204 U-K 0.3	2CDS 274 417 R0117	619479	0.56	2
	0.5	S 204 U-K 0.5	2CDS 274 417 R0157	619967	0.56	2
	0.75	S 204 U-K 0.75	2CDS 274 417 R0187	619974	0.56	2
	1	S 204 U-K 1	2CDS 274 417 R0217	619509	0.56	2
	1.6	S 204 U-K 1.6	2CDS 274 417 R0257	619998	0.56	2
	2	S 204 U-K 2	2CDS 274 417 R0277	620000	0.56	2
	3	S 204 U-K 3	2CDS 274 417 R0317	620017	0.56	2
	4	S 204 U-K 4	2CDS 274 417 R0337	620024	0.56	2
	5	S 204 U-K 5	2CDS 274 417 R0357	620031	0.56	2
	6	S 204 U-K 6	2CDS 274 417 R0377	620048	0.56	2
	8	S 204 U-K 8	2CDS 274 417 R0407	620055	0.56	2
	10	S 204 U-K 10	2CDS 274 417 R0427	620062	0.56	2
	13	S 204 U-K 13	2CDS 274 417 R0447	620079	0.56	2
	15	S 204 U-K 15	2CDS 274 417 R0457	620086	0.56	2
	16	S 204 U-K 16	2CDS 274 417 R0467	620093	0.56	2
	20	S 204 U-K 20	2CDS 274 417 R0487	620109	0.56	2
	25	S 204 U-K 25	2CDS 274 417 R0517	620116	0.56	2
	30	S 204 U-K 30	2CDS 274 417 R0527	620123	0.56	2
	32	S 204 U-K 32	2CDS 274 417 R0537	620130	0.56	2
40	S 204 U-K 40	2CDS 274 417 R0557	620147	0.56	2	
50	S 204 U-K 50	2CDS 274 417 R0577	620154	0.56	2	
60	S 204 U-K 60	2CDS 274 417 R0587	620161	0.56	2	
63	S 204 U-K 63	2CDS 274 417 R0607	620178	0.56	2	



10000

Z

### S 200 U-Z characteristic

Function: protection and control of the electronic circuits against weak and long duration overloads and short-circuits.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2, UL 489, CSA 22.2 No. 5

Number of poles	Rated current In A	Order details		Order code	Bhn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code			EAN				
1	0.5	S 201 U-Z	0.5	2CDS 271 417 R0158	620185			0.14	10
	1	S 201 U-Z	1	2CDS 271 417 R0218	620192			0.14	10
	1.6	S 201 U-Z	1.6	2CDS 271 417 R0258	620208			0.14	10
	2	S 201 U-Z	2	2CDS 271 417 R0278	620215			0.14	10
	3	S 201 U-Z	3	2CDS 271 417 R0318	620222			0.14	10
	4	S 201 U-Z	4	2CDS 271 417 R0338	620239			0.14	10
	5	S 201 U-Z	5	2CDS 271 417 R0358	620246			0.14	10
	6	S 201 U-Z	6	2CDS 271 417 R0378	620253			0.14	10
	8	S 201 U-Z	8	2CDS 271 417 R0408	620260			0.14	10
	10	S 201 U-Z	10	2CDS 271 417 R0428	620277			0.14	10
	15	S 201 U-Z	15	2CDS 271 417 R0458	620291			0.14	10
	16	S 201 U-Z	16	2CDS 271 417 R0468	620307			0.14	10
	20	S 201 U-Z	20	2CDS 271 417 R0488	620314			0.14	10
	25	S 201 U-Z	25	2CDS 271 417 R0518	620321			0.14	10
	30	S 201 U-Z	30	2CDS 271 417 R0528	622851			0.14	10
32	S 201 U-Z	32	2CDS 271 417 R0538	620345			0.14	10	
40	S 201 U-Z	40	2CDS 271 417 R0558	620352			0.14	10	
50	S 201 U-Z	50	2CDS 271 417 R0578	620369			0.14	10	
60	S 201 U-Z	60	2CDS 271 417 R0588	620376			0.14	10	
63	S 201 U-Z	63	2CDS 271 417 R0608	620383			0.14	10	
2	0.5	S 202 U-Z	0.5	2CDS 272 417 R0158	620390			0.28	5
	1	S 202 U-Z	1	2CDS 272 417 R0218	620406			0.28	5
	1.6	S 202 U-Z	1.6	2CDS 272 417 R0258	620413			0.28	5
	2	S 202 U-Z	2	2CDS 272 417 R0278	620420			0.28	5
	3	S 202 U-Z	3	2CDS 272 417 R0318	620437			0.28	5
	4	S 202 U-Z	4	2CDS 272 417 R0338	620444			0.28	5
	5	S 202 U-Z	5	2CDS 272 417 R0358	620451			0.28	5
	6	S 202 U-Z	6	2CDS 272 417 R0378	620468			0.28	5
	8	S 202 U-Z	8	2CDS 272 417 R0408	620475			0.28	5
	10	S 202 U-Z	10	2CDS 272 417 R0428	620482			0.28	5
	15	S 202 U-Z	15	2CDS 272 417 R0458	620505			0.28	5
	16	S 202 U-Z	16	2CDS 272 417 R0468	620512			0.28	5
	20	S 202 U-Z	20	2CDS 272 417 R0488	620529			0.28	5
	25	S 202 U-Z	25	2CDS 272 417 R0518	620536			0.28	5
	30	S 202 U-Z	30	2CDS 272 417 R0528	620543			0.28	5
32	S 202 U-Z	32	2CDS 272 417 R0538	620550			0.28	5	
40	S 202 U-Z	40	2CDS 272 417 R0558	620567			0.28	5	
50	S 202 U-Z	50	2CDS 272 417 R0578	620574			0.28	5	
60	S 202 U-Z	60	2CDS 272 417 R0588	620581			0.28	5	
63	S 202 U-Z	63	2CDS 272 417 R0608	620598			0.28	5	



10000

2



3	0.5	S 203 U-Z 0.5	2CDS 273 417 R0158	620604	0.42	3
	1	S 203 U-Z 1	2CDS 273 417 R0218	620611	0.42	3
	1.6	S 203 U-Z 1.6	2CDS 273 417 R0258	620628	0.42	3
	2	S 203 U-Z 2	2CDS 273 417 R0278	620635	0.42	3
	3	S 203 U-Z 3	2CDS 273 417 R0318	620624	0.42	3
	4	S 203 U-Z 4	2CDS 273 417 R0338	620659	0.42	3
	5	S 203 U-Z 5	2CDS 273 417 R0358	620666	0.42	3
	6	S 203 U-Z 6	2CDS 273 417 R0378	620673	0.42	3
	8	S 203 U-Z 8	2CDS 273 417 R0408	620680	0.42	3
	10	S 203 U-Z 10	2CDS 273 417 R0428	620697	0.42	3
	15	S 203 U-Z 15	2CDS 273 417 R0458	620710	0.42	3
	16	S 203 U-Z 16	2CDS 273 417 R0468	620727	0.42	3
	20	S 203 U-Z 20	2CDS 273 417 R0488	620734	0.42	3
	25	S 203 U-Z 25	2CDS 273 417 R0518	620741	0.42	3
	30	S 203 U-Z 30	2CDS 273 417 R0528	620758	0.42	3
	32	S 203 U-Z 32	2CDS 273 417 R0538	620765	0.42	3
40	S 203 U-Z 40	2CDS 273 417 R0558	620772	0.42	3	
50	S 203 U-Z 50	2CDS 273 417 R0578	620789	0.42	3	
60	S 203 U-Z 60	2CDS 273 417 R0588	620796	0.42	3	
63	S 203 U-Z 63	2CDS 273 417 R0608	620802	0.42	3	
4	0.5	S 204 U-Z 0.5	2CDS 274 417 R0158	620819	0.56	2
	1	S 204 U-Z 1	2CDS 274 417 R0218	620826	0.56	2
	1.6	S 204 U-Z 1.6	2CDS 274 417 R0258	620833	0.56	2
	2	S 204 U-Z 2	2CDS 274 417 R0278	620840	0.56	2
	3	S 204 U-Z 3	2CDS 274 417 R0318	620857	0.56	2
	4	S 204 U-Z 4	2CDS 274 417 R0338	620864	0.56	2
	5	S 204 U-Z 5	2CDS 274 417 R0358	620871	0.56	2
	6	S 204 U-Z 6	2CDS 274 417 R0378	620888	0.56	2
	8	S 204 U-Z 8	2CDS 274 417 R0408	620895	0.56	2
	10	S 204 U-Z 10	2CDS 274 417 R0428	620901	0.56	2
	15	S 204 U-Z 15	2CDS 274 417 R0458	620925	0.56	2
	16	S 204 U-Z 16	2CDS 274 417 R0468	620932	0.56	2
	20	S 204 U-Z 20	2CDS 274 417 R0488	620949	0.56	2
	25	S 204 U-Z 25	2CDS 274 417 R0518	620956	0.56	2
	30	S 204 U-Z 30	2CDS 274 417 R0528	620963	0.56	2
	32	S 204 U-Z 32	2CDS 274 417 R0538	620970	0.56	2
40	S 204 U-Z 40	2CDS 274 417 R0558	620987	0.56	2	
50	S 204 U-Z 50	2CDS 274 417 R0578	620994	0.56	2	
60	S 204 U-Z 60	2CDS 274 417 R0588	621007	0.56	2	
63	S 204 U-Z 63	2CDS 274 417 R0608	621014	0.56	2	

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K

### S 200 UP-K characteristic

Function: protection and control of the electronic circuits against weak and long duration overloads and short-circuits.

Applications: commercial and industrial.

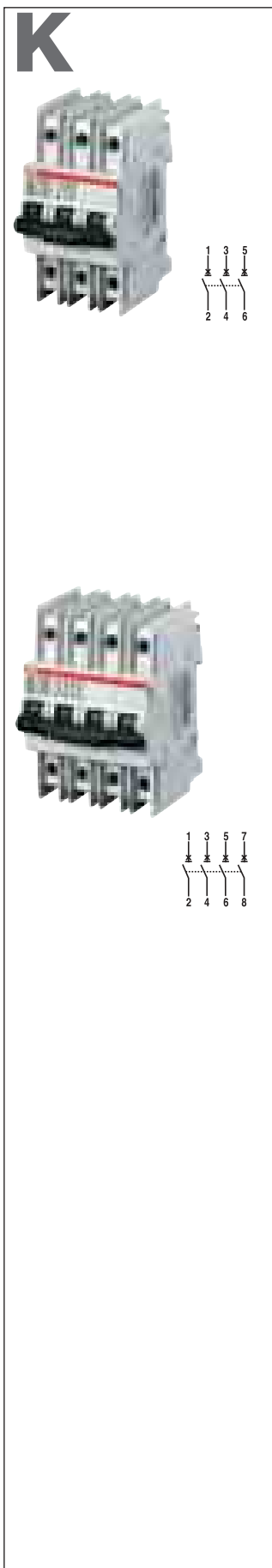
Standard: IEC/EN 60947-2, UL 489, CSA 22.2 No. 5

Number of poles	Rated current In A	Order details		Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	0.2	S 201 UP-K 0.2	2CDS 271 317 R0087	615631			0.14	10
	0.3	S 201 UP-K 0.3	2CDS 271 317 R0117	615648			0.14	10
	0.5	S 201 UP-K 0.5	2CDS 271 317 R0157	615655			0.14	10
	0.75	S 201 UP-K 0.75	2CDS 271 317 R0187	615662			0.14	10
	1	S 201 UP-K 1	2CDS 271 317 R0217	615679			0.14	10
	1.6	S 201 UP-K 1.6	2CDS 271 317 R0257	615686			0.14	10
	2	S 201 UP-K 2	2CDS 271 317 R0277	615693			0.14	10
	3	S 201 UP-K 3	2CDS 271 317 R0317	615709			0.14	10
	4	S 201 UP-K 4	2CDS 271 317 R0337	615716			0.14	10
	5	S 201 UP-K 5	2CDS 271 317 R0357	615723			0.14	10
	6	S 201 UP-K 6	2CDS 271 317 R0377	615730			0.14	10
	8	S 201 UP-K 8	2CDS 271 317 R0407	615747			0.14	10
	10	S 201 UP-K 10	2CDS 271 317 R0427	615754			0.14	10
	13	S 201 UP-K 13	2CDS 271 317 R0447	615761			0.14	10
	15	S 201 UP-K 15	2CDS 271 317 R0457	615778			0.14	10
16	S 201 UP-K 16	2CDS 271 317 R0467	615785			0.14	10	
20	S 201 UP-K 20	2CDS 271 317 R0487	615792			0.14	10	
25	S 201 UP-K 25	2CDS 271 317 R0517	615808			0.14	10	
2	0.2	S 202 UP-K 0.2	2CDS 272 317 R0087	615877			0.28	5
	0.3	S 202 UP-K 0.3	2CDS 272 317 R0117	615884			0.28	5
	0.5	S 202 UP-K 0.5	2CDS 272 317 R0157	615891			0.28	5
	0.75	S 202 UP-K 0.75	2CDS 272 317 R0187	615907			0.28	5
	1	S 202 UP-K 1	2CDS 272 317 R0217	615914			0.28	5
	1.6	S 202 UP-K 1.6	2CDS 272 317 R0257	615921			0.28	5
	2	S 202 UP-K 2	2CDS 272 317 R0277	615938			0.28	5
	3	S 202 UP-K 3	2CDS 272 317 R0317	615945			0.28	5
	4	S 202 UP-K 4	2CDS 272 317 R0337	615952			0.28	5
	5	S 202 UP-K 5	2CDS 272 317 R0357	615969			0.28	5
	6	S 202 UP-K 6	2CDS 272 317 R0377	615976			0.28	5
	8	S 202 UP-K 8	2CDS 272 317 R0407	615983			0.28	5
	10	S 202 UP-K 10	2CDS 272 317 R0427	615990			0.28	5
	13	S 202 UP-K 13	2CDS 272 317 R0447	616003			0.28	5
	15	S 202 UP-K 15	2CDS 272 317 R0457	616010			0.28	5
16	S 202 UP-K 16	2CDS 272 317 R0467	616027			0.28	5	
20	S 202 UP-K 20	2CDS 272 317 R0487	616034			0.28	5	
25	S 202 UP-K 25	2CDS 272 317 R0517	616041			0.28	5	



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2



3	0.2	<b>S 203 UP-K</b>	0.2	2CDS 273 317 R0087	<b>616119</b>	0.42	3
	0.3	<b>S 203 UP-K</b>	0.3	2CDS 273 317 R0117	<b>616126</b>	0.42	3
	0.5	<b>S 203 UP-K</b>	0.5	2CDS 273 317 R0157	<b>616133</b>	0.42	3
	0.75	<b>S 203 UP-K</b>	0.75	2CDS 273 317 R0187	<b>616140</b>	0.42	3
	1	<b>S 203 UP-K</b>	1	2CDS 273 317 R0217	<b>616157</b>	0.42	3
	1.6	<b>S 203 UP-K</b>	1.6	2CDS 273 317 R0257	<b>616164</b>	0.42	3
	2	<b>S 203 UP-K</b>	2	2CDS 273 317 R0277	<b>616171</b>	0.42	3
	3	<b>S 203 UP-K</b>	3	2CDS 273 317 R0317	<b>616188</b>	0.42	3
	4	<b>S 203 UP-K</b>	4	2CDS 273 317 R0337	<b>616195</b>	0.42	3
	5	<b>S 203 UP-K</b>	5	2CDS 273 317 R0357	<b>616201</b>	0.42	3
	6	<b>S 203 UP-K</b>	6	2CDS 273 317 R0377	<b>616218</b>	0.42	3
	8	<b>S 203 UP-K</b>	8	2CDS 273 317 R0407	<b>616225</b>	0.42	3
	10	<b>S 203 UP-K</b>	10	2CDS 273 317 R0427	<b>616232</b>	0.42	3
	13	<b>S 203 UP-K</b>	13	2CDS 273 317 R0447	<b>616249</b>	0.42	3
	15	<b>S 203 UP-K</b>	15	2CDS 273 317 R0457	<b>616256</b>	0.42	3
16	<b>S 203 UP-K</b>	16	2CDS 273 317 R0467	<b>616263</b>	0.42	3	
20	<b>S 203 UP-K</b>	20	2CDS 273 317 R0487	<b>616270</b>	0.42	3	
25	<b>S 203 UP-K</b>	25	2CDS 273 317 R0517	<b>616287</b>	0.42	3	

4	0.2	<b>S 204 UP-K</b>	0.2	2CDS 274 317 R0087	<b>616355</b>	0.56	2
	0.3	<b>S 204 UP-K</b>	0.3	2CDS 274 317 R0117	<b>616362</b>	0.56	2
	0.5	<b>S 204 UP-K</b>	0.5	2CDS 274 317 R0157	<b>616379</b>	0.56	2
	0.75	<b>S 204 UP-K</b>	0.75	2CDS 274 317 R0187	<b>616386</b>	0.56	2
	1	<b>S 204 UP-K</b>	1	2CDS 274 317 R0217	<b>616393</b>	0.56	2
	1.6	<b>S 204 UP-K</b>	1.6	2CDS 274 317 R0257	<b>616409</b>	0.56	2
	2	<b>S 204 UP-K</b>	2	2CDS 274 317 R0277	<b>616416</b>	0.56	2
	3	<b>S 204 UP-K</b>	3	2CDS 274 317 R0317	<b>616423</b>	0.56	2
	4	<b>S 204 UP-K</b>	4	2CDS 274 317 R0337	<b>616430</b>	0.56	2
	5	<b>S 204 UP-K</b>	5	2CDS 274 317 R0357	<b>616447</b>	0.56	2
	6	<b>S 204 UP-K</b>	6	2CDS 274 317 R0377	<b>616454</b>	0.56	2
	8	<b>S 204 UP-K</b>	8	2CDS 274 317 R0407	<b>616461</b>	0.56	2
	10	<b>S 204 UP-K</b>	10	2CDS 274 317 R0427	<b>616478</b>	0.56	2
	13	<b>S 204 UP-K</b>	13	2CDS 274 317 R0447	<b>616485</b>	0.56	2
	15	<b>S 204 UP-K</b>	15	2CDS 274 317 R0457	<b>616492</b>	0.56	2
16	<b>S 204 UP-K</b>	16	2CDS 274 317 R0467	<b>616508</b>	0.56	2	
20	<b>S 204 UP-K</b>	20	2CDS 274 317 R0487	<b>616515</b>	0.56	2	
25	<b>S 204 UP-K</b>	25	2CDS 274 317 R0517	<b>616522</b>	0.56	2	

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Z

### S 200 UP-Z characteristic

Function: protection and control of the electronic circuits against weak and long duration overloads and short-circuits.

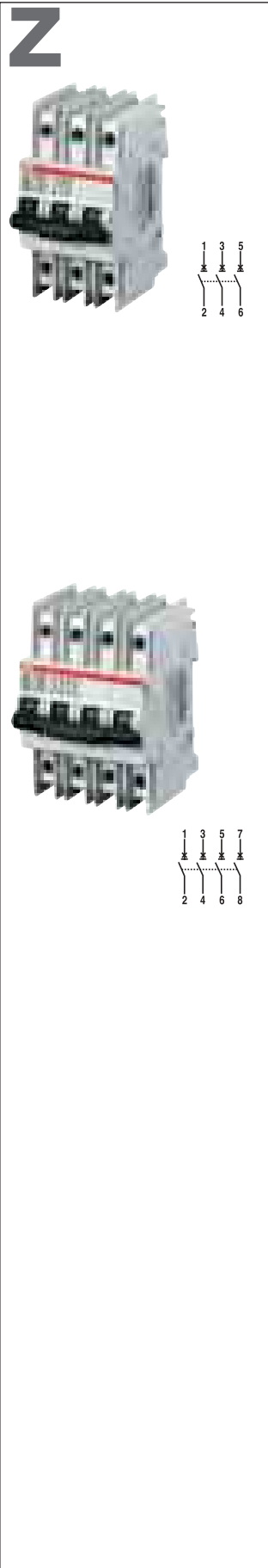
Applications: commercial and industrial.

Standard: IEC/EN 60947-2, UL 489, CSA 22.2 No. 5



Number of poles	Rated current In A	Order details Type code	Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				4016779				
1	0.5	S 201 UP-Z 0.5	2CDS 271 317 R0158	616591			0.14	10
	1	S 201 UP-Z 1	2CDS 271 317 R0218	616607			0.14	10
	1.6	S 201 UP-Z 1.6	2CDS 271 317 R0258	616614			0.14	10
	2	S 201 UP-Z 2	2CDS 271 317 R0278	616621			0.14	10
	3	S 201 UP-Z 3	2CDS 271 317 R0318	616638			0.14	10
	4	S 201 UP-Z 4	2CDS 271 317 R0338	616645			0.14	10
	5	S 201 UP-Z 5	2CDS 271 317 R0358	616652			0.14	10
	6	S 201 UP-Z 6	2CDS 271 317 R0378	616669			0.14	10
	8	S 201 UP-Z 8	2CDS 271 317 R0408	616676			0.14	10
	10	S 201 UP-Z 10	2CDS 271 317 R0428	616683			0.14	10
	13	S 201 UP-Z 13	2CDS 271 317 R0448	616690			0.14	10
	15	S 201 UP-Z 15	2CDS 271 317 R0458	616706			0.14	10
	16	S 201 UP-Z 16	2CDS 271 317 R0468	616713			0.14	10
	20	S 201 UP-Z 20	2CDS 271 317 R0488	616720			0.14	10
	25	S 201 UP-Z 25	2CDS 271 317 R0518	616737			0.14	10
2	0.5	S 202 UP-Z 0.5	2CDS 272 317 R0158	616805			0.28	5
	1	S 202 UP-Z 1	2CDS 272 317 R0218	616812			0.28	5
	1.6	S 202 UP-Z 1.6	2CDS 272 317 R0258	616829			0.28	5
	2	S 202 UP-Z 2	2CDS 272 317 R0278	616836			0.28	5
	3	S 202 UP-Z 3	2CDS 272 317 R0318	616843			0.28	5
	4	S 202 UP-Z 4	2CDS 272 317 R0338	616850			0.28	5
	5	S 202 UP-Z 5	2CDS 272 317 R0358	616867			0.28	5
	6	S 202 UP-Z 6	2CDS 272 317 R0378	616874			0.28	5
	8	S 202 UP-Z 8	2CDS 272 317 R0408	616881			0.28	5
	10	S 202 UP-Z 10	2CDS 272 317 R0428	616898			0.28	5
	13	S 202 UP-Z 13	2CDS 272 317 R0448	616904			0.28	5
	15	S 202 UP-Z 15	2CDS 272 317 R0458	616911			0.28	5
	16	S 202 UP-Z 16	2CDS 272 317 R0468	616928			0.28	5
	20	S 202 UP-Z 20	2CDS 272 317 R0488	616935			0.28	5
	25	S 202 UP-Z 25	2CDS 272 317 R0518	616942			0.28	5

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3	0.5	S 203 UP-Z 0.5	2CDS 273 317 R0158	617017	0.42	3
	1	S 203 UP-Z 1	2CDS 273 317 R0218	617024	0.42	3
	1.6	S 203 UP-Z 1.6	2CDS 273 317 R0258	617031	0.42	3
	2	S 203 UP-Z 2	2CDS 273 317 R0278	617048	0.42	3
	3	S 203 UP-Z 3	2CDS 273 317 R0318	617055	0.42	3
	4	S 203 UP-Z 4	2CDS 273 317 R0338	617062	0.42	3
	5	S 203 UP-Z 5	2CDS 273 317 R0358	617079	0.42	3
	6	S 203 UP-Z 6	2CDS 273 317 R0378	617086	0.42	3
	8	S 203 UP-Z 8	2CDS 273 317 R0408	617093	0.42	3
	10	S 203 UP-Z 10	2CDS 273 317 R0428	617109	0.42	3
	13	S 203 UP-Z 13	2CDS 273 317 R0448	617116	0.42	3
15	S 203 UP-Z 15	2CDS 273 317 R0458	617123	0.42	3	
16	S 203 UP-Z 16	2CDS 273 317 R0468	617130	0.42	3	
20	S 203 UP-Z 20	2CDS 273 317 R0488	617147	0.42	3	
25	S 203 UP-Z 25	2CDS 273 317 R0518	617154	0.42	3	

4	0.5	S 204 UP-Z 0.5	2CDS 274 317 R0158	617222	0.56	2
	1	S 204 UP-Z 1	2CDS 274 317 R0218	617239	0.56	2
	1.6	S 204 UP-Z 1.6	2CDS 274 317 R0258	617246	0.56	2
	2	S 204 UP-Z 2	2CDS 274 317 R0278	617253	0.56	2
	3	S 204 UP-Z 3	2CDS 274 317 R0318	617260	0.56	2
	4	S 204 UP-Z 4	2CDS 274 317 R0338	617277	0.56	2
	5	S 204 UP-Z 5	2CDS 274 317 R0358	617284	0.56	2
	6	S 204 UP-Z 6	2CDS 274 317 R0378	617291	0.56	2
	8	S 204 UP-Z 8	2CDS 274 317 R0408	617307	0.56	2
	10	S 204 UP-Z 10	2CDS 274 317 R0428	617314	0.56	2
	13	S 204 UP-Z 13	2CDS 274 317 R0448	617321	0.56	2
	15	S 204 UP-Z 15	2CDS 274 317 R0458	617338	0.56	2
	16	S 204 UP-Z 16	2CDS 274 317 R0468	617345	0.56	2
	20	S 204 UP-Z 20	2CDS 274 317 R0488	617352	0.56	2
25	S 204 UP-Z 25	2CDS 274 317 R0518	617369	0.56	2	

2



The S 9.. range of circuit-breakers is the widest range of 1P+N MCBs in one module.

These circuit-breakers are available with rated currents from 2 to 40 A when using the characteristic C and with rated currents from 6 to 40 A when using the characteristic B.

For each current there are also four different breaking capacities available:

3 kA (S 931 N series) 4.5 kA (S 941 N series), 6 kA (S 951 N series) and 10 kA (S 971 N series).

These circuit-breakers have been designed so that they ensure, in the last closing section, that the closing speed of the contacts is independent of the rotating

speed of the knob. The trip device (ABB international patent) ensures perfect closure every time thus considerably improving the performance of these devices and extending the average life

cycle. A redesigned red/green toggle makes the ON/OFF status immediately evident. The terminals have also been designed for safe and easy use and, to this end, new high capacity cage type terminals

(16 mm<sup>2</sup> on all versions) have been developed.

The S 9.. range circuit-breakers have been designed for wiring with the ABB SACE Unifix rapid system using special connections.

These circuit-breakers are also supported by a complete group of auxiliary elements which effect many functions and configurations such as auxiliary contacts, signal contacts, undervoltage releases and shunt trips.



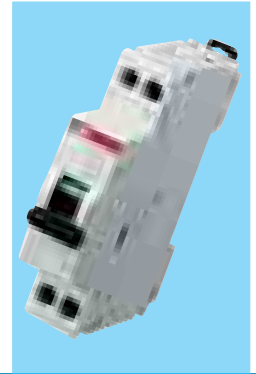
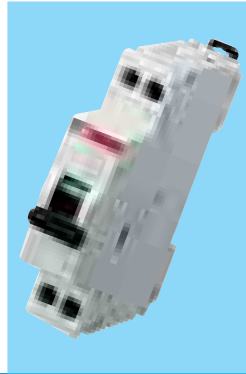
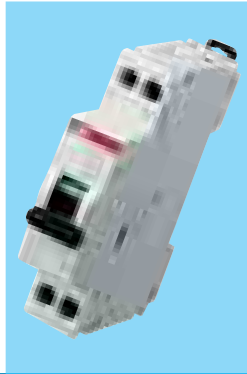
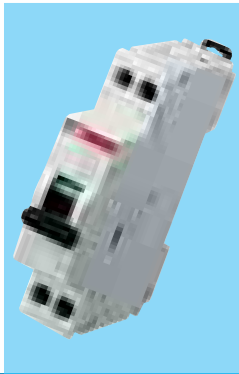


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TECHNICAL FEATURES			
<b>Standards</b>			
Electrical features	Rated current $I_n$	A	
	Poles		
	Rated voltage $U_e$	V	
	Insulation voltage $U_i$	V	
	Max. operating voltage $U_b$ max.	IEC AC	V
		IEC DC 1P	V
		IEC DC 1P+N	V
	Min. operating voltage $U_b$ min.	V	
	Rated frequency	Hz	
	Rated breaking capacity acc. to IEC/EN 60898	ultimate $I_{cn}$	A
	Rated making and breaking capacity of an individual pole	$I_{cn1}$	kA
	Rated breaking capacity	ultimate $I_{cu}$	kA
	acc. to IEC/EN 60947-2 1P, 1P+N @ 230 VAC	service $I_{cs}$	kA
	Rated impulse withstand voltage (1.2/50) $U_{imp}$		kV
	Dielectric test voltage at ind. freq. for 1 min.		kV
Overvoltage category			
Thermomagnetic release characteristic	B: $3 I_n \leq I_m \leq 5 I_n$		
	C: $5 I_n \leq I_m \leq 10 I_n$		
Mechanical features	Toggle		
	Electrical life		
	Mechanical life		
	Protection degree	housing	
		terminals	
	Tropicalization acc. to IEC/EN 60068-2	humid heat	°C/RH
		constant climatic conditions	°C/RH
		variable climatic conditions	°C/RH
Reference temperature for setting of thermal element		°C	
Ambient temperature (with daily average $\leq +35$ °C)		°C	
Storage temperature		°C	
Installation	Terminal type		
	Terminal size top/bottom for cable		mm <sup>2</sup>
	Tightening torque		N*m
	Mounting Connection		
Dimensions and weight	Pole dimensions (H x D x W)		mm
	Pole weight		g
Combination with auxiliary elements	Combinable with:	auxiliary contact	
		signal contact	
		shunt trip	
		undervoltage release	



S 931N

S 941N

S 951N

S 971N

IEC/EN 60898; IEC/EN 60947-2

2 ≤ In ≤ 40

1P+N

230

500

254

60

125

12VAC - 12VDC

50...60

3000

4500

6000

10000

3

4.5

3

3

6

4.5

3

10

6

3

15

10

5

2.5

III



black sealable in ON-OFF position

10000

20000

IP4X

IP2X

28 cycles with 55/95...100

23/83 - 40/93 - 55/20

25/95 - 40/95

30 (20 for characteristics K,Z)

-25...+55

-40...+70

cage (shock resistant)

16/16

1.2

on DIN rail EN 60715 (35 mm) by means of fast clip device

from top and bottom

83 x 68 x 17.8

110

yes

yes

yes

yes

C



TEPM0060



2

### S 931N C characteristic

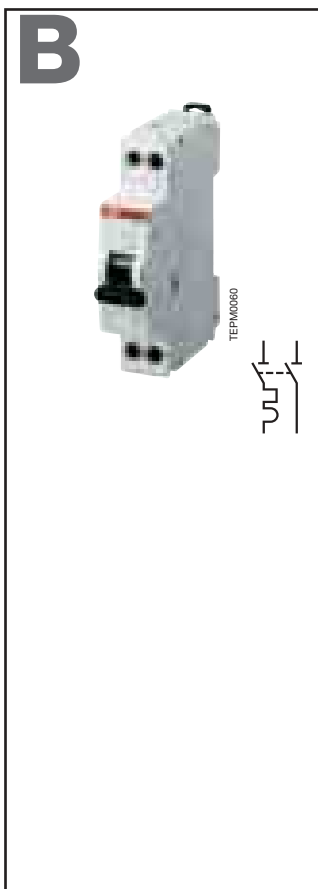
Function: protection and control of the circuits against overloads and short-circuits in final distribution; protection for resistive and inductive loads with low inrush current.

Applications: residential.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=3 kA

Number of poles	Nominal current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type	Order code					
1+N	2	S 931N C2	11861114	496908			0.110	6
	4	S 931N C4	11861115	497004			0.110	6
	6	S 931N C6	11861116	497103			0.110	6
	10	S 931N C10	11861117	497202			0.110	6
	16	S 931N C16	11861118	497301			0.110	6
	20	S 931N C20	11861119	497400			0.110	6
	25	S 931N C25	11861120	497509			0.110	6
	32	S 931N C32	11861121	497608			0.110	6
	40	S 931N C40	11861122	497707			0.110	6



### S 941N B characteristic

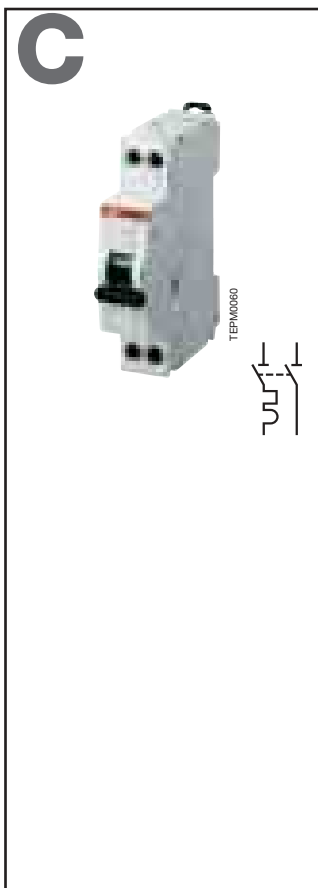
Function: protection and control of the circuits against overloads and short-circuits in final distribution; protection for people and big length cables in TN and IT systems.

Applications: residential.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=4.5 kA

Number of poles	Nominal current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type	Order code					
1+N	6	S 941N B6	16055409	353607			0.110	6
	10	S 941N B10	16055417	353706			0.110	6
	16	S 941N B16	16055425	353805			0.110	6
	20	S 941N B20	16055433	353904			0.110	6
	25	S 941N B25	16055441	354000			0.110	6
	32	S 941N B32	16055458	354109			0.110	6
	40	S 941N B40	16055466	354208			0.110	6



### S 941N C characteristic

Function: protection and control of the circuits against overloads and short-circuits in final distribution; protection for resistive and inductive loads with low inrush current.

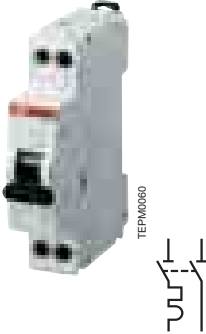
Applications: residential.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=4.5 kA

Number of poles	Nominal current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type	Order code					
1+N	2	S 941N C2	16055508	354307			0.110	6
	4	S 941N C4	16055516	354406			0.110	6
	6	S 941N C6	16055524	354505			0.110	6
	10	S 941N C10	16055532	354604			0.110	6
	16	S 941N C16	16055540	354703			0.110	6
	20	S 941N C20	16055557	354802			0.110	6
	25	S 941N C25	16055565	354901			0.110	6
	32	S 941N C32	16055573	355007			0.110	6
	40	S 941N C40	16055581	355106			0.110	6

**B**



**S 951N B characteristic**

Function: protection and control of the circuits against overloads and short-circuits in final distribution; protection for people and big length cables in TN and IT systems.

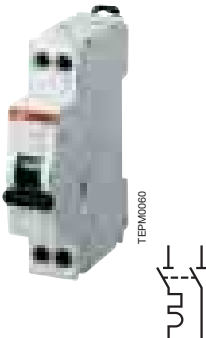
Applications: residential and commercial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=6 kA

Number of poles	Nominal current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type	Order code					
1+N	6	S 951N B6	16055607	355205			0.110	6
	10	S 951N B10	16055615	355304			0.110	6
	16	S 951N B16	16055623	355403			0.110	6
	20	S 951N B20	16055631	355502			0.110	6
	25	S 951N B25	16055649	355601			0.110	6
	32	S 951N B32	16055656	355700			0.110	6
	40	S 951N B40	16055664	355809			0.110	6

**C**



**S 951N C characteristic**

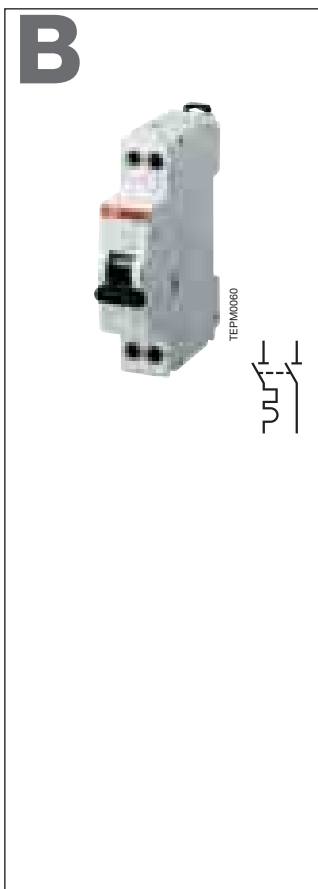
Function: protection and control of the circuits against overloads and short-circuits in final distribution; protection for resistive and inductive loads with low inrush current.

Applications: residential and commercial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=6 kA

Number of poles	Nominal current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type	Order code					
1+N	2	S 951N C2	16055706	355908			0.110	6
	4	S 951N C4	16055714	356004			0.110	6
	6	S 951N C6	16055722	356103			0.110	6
	10	S 951N C10	16055730	356202			0.110	6
	16	S 951N C16	16055748	356301			0.110	6
	20	S 951N C20	16055755	356400			0.110	6
	25	S 951N C25	16055763	356509			0.110	6
	32	S 951N C32	16055771	356608			0.110	6
	40	S 951N C40	16055789	356707			0.110	6



### S 971N B characteristic

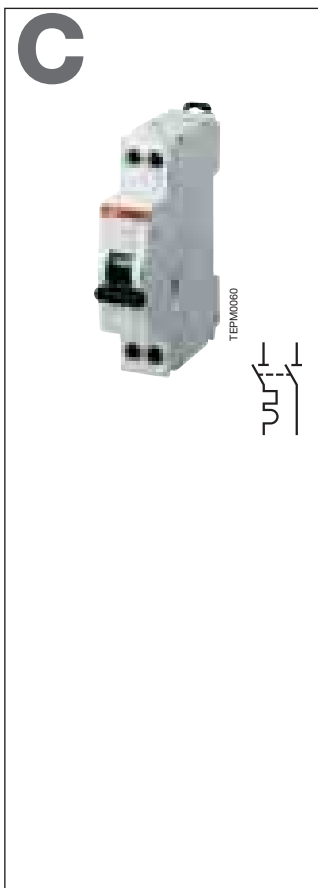
Function: protection and control of the circuits against overloads and short-circuits in final distribution; protection for people and big length cables in TN and IT systems.

Applications: residential and commercial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=10 kA

Number of poles	Nominal current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type	Order code					
1+N	6	S 971N B6	16055805	356806			0.110	6
	10	S 971N B10	16055813	356905			0.110	6
	16	S 971N B16	16055821	357001			0.110	6
	20	S 971N B20	16055839	357100			0.110	6
	25	S 971N B25	16055847	357209			0.110	6
	32	S 971N B32	16055854	357308			0.110	6
	40	S 971N B40	16055862	357407			0.110	6



### S 971N C characteristic

Function: protection and control of the circuits against overloads and short-circuits in final distribution; protection for resistive and inductive loads with low inrush current.

Applications: residential and commercial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=10 kA

Number of poles	Nominal current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type	Order code					
1+N	2	S 971N C2	16055904	357506			0.110	6
	4	S 971N C4	16055912	357605			0.110	6
	6	S 971N C6	16055920	357704			0.110	6
	10	S 971N C10	16055938	357803			0.110	6
	16	S 971N C16	16055946	357902			0.110	6
	20	S 971N C20	16055953	358008			0.110	6
	25	S 971N C25	16055961	358107			0.110	6
	32	S 971N C32	16055979	358206			0.110	6
	40	S 971N C40	16055987	358305			0.110	6

MCBs for heavy-duty industrial protection consist of three different ranges.

**S 280** series, which includes the 80 A and 100 A rated current versions (one pole, one module), available in B and C characteristics, 6 kA breaking capacity according to IEC/EN 60898 Standard and 35 mm<sup>2</sup> size of the terminals. The range includes also the S 280 UC series that protects direct current circuits with high voltages.

In all circuit-breakers of the range there is no specific mechanical constraint between the case and the internal mechanical components which form three independent functional blocks: in this way, any distortion of the case, in the event of thermal shock, does not affect the correct functioning of the circuit-breaker. The supply lines of the protected circuit can be connected to either the upper or lower terminals of the circuit-breakers (reversibility of connections). The double terminal of these circuit-breakers enables simultaneous connection of cables and busbars.

**S 290** series, for the use in switchboards and consumer



units for modular devices with 45 mm slotting and rated currents up to 125 A. They can be mounted alongside standard modular circuit-breakers because of their modular design and ability to be installed on 35 mm DIN EN 50022 rails. The circuit-breakers are available in 1-2-3-4 pole versions with a width equal to 1 module and a half per pole (27 mm); the characteristic curves are C and D.

**S 500** series, with a high breaking capacity thanks to the

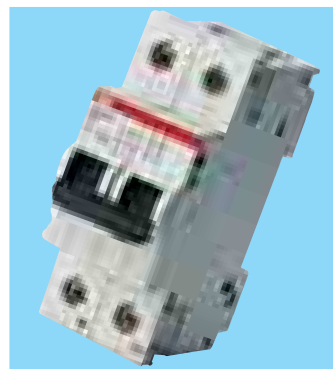
“double interruption” technique. Because of the tripping speed (less than 3 ms up to 50 kA), the S 500 breakers offer considerable protection to the standard modular circuit-breakers installed downstream. They are available in 1-2-3-4 pole versions with width equal to 1 module and a half per pole (27 mm), up to a rated current of 63 A; the characteristic curves are C and B for protecting circuits in alternating current and B for protecting circuits in direct current (S 500 UC series).



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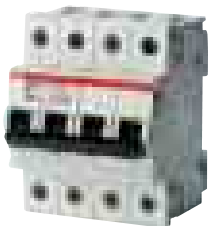
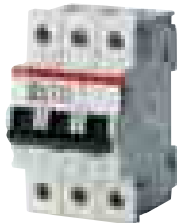




TECHNICAL FEATURES			S 280 80- 100A	
<b>Standards</b>			IEC/EN 60898; IEC/EN 60947-2	
<b>Electrical feature</b>	<b>Rated current <math>I_n</math></b>	A	$80 \leq I_n \leq 100$	
	<b>Poles</b>		1P, 2P, 3P, 4P	
	<b>Rated voltage <math>U_e</math></b>	IEC AC 1P	V	230-240
		IEC AC 2P, 3P, 4P	V	230/400-240/415
	<b>Insulation voltage <math>U_i</math></b>		V	500
	<b>Max. operating voltage <math>U_b</math> max.</b>	IEC AC	V	254/440
		IEC DC 1P	V	60
		IEC DC 2P, 3P, 4P	V	125
	<b>Min. operating voltage <math>U_b</math> min.</b>		V	12 VAC - 12 VDC
	<b>Rated frequency</b>		Hz	50...60
	<b>Rated breaking capacity acc. to IEC/EN 60898</b>	ultimate $I_{cn}$	A	6000
	<b>Rated breaking capacity acc. to IEC/EN 60947-2 1P @ 230 VAC 2P, 3P, 4P @ 400 VAC</b>	ultimate $I_{cu}$	kA	6
		service $I_{cs}$	kA	6
<b>Rated impulse withstand voltage (1.2/50) <math>U_{imp}</math></b>		kV	5	
<b>Dielectric test voltage at ind. freq. for 1 min.</b>		kV	2.5	
<b>Overvoltage category</b>			III	
<b>Thermomagnetic release characteristic</b>	B: $3 I_n \leq I_m \leq 5 I_n$		■	
	C: $5 I_n \leq I_m \leq 10 I_n$		■	
<b>Mechanical feature</b>	<b>Toggle</b>		black sealable in ON- OFF position	
	<b>Electrical life</b>		4000	
	<b>Mechanical life</b>		10000	
	<b>Protection degree</b>	housing		IP4X
		terminals		IP2X
	<b>Mechanical shock resistance</b>		30 g, minimum of 2 impacts, duration of shocks 13 ms	
	<b>Resistance to vibrations acc. to IEC/EN 60068-2-6</b>		5 g - 20 cycles at frequency 5...150...5 Hz with load 0.8 $I_n$	
	<b>Tropicalization acc. to IEC/EN 60068-2</b>	humid heat	°C/RH	28 cycles with 55/95...100
		constant climatic conditions	°C/RH	23/83 - 40/93 - 55/20
		variable climatic conditions	°C/RH	25/95 - 40/95
	<b>Reference temperature for setting of thermal element</b>		°C	30
	<b>Ambient temperature (with daily average <math>\leq +35^\circ\text{C}</math>)</b>		°C	-25...+55
	<b>Storage temperature</b>		°C	-40...+70
<b>Installation</b>	<b>Terminal type</b>		cage (shock protected)	
	<b>Terminal size top/bottom for cable</b>	mm <sup>2</sup>	35/35	
	<b>Tightening torque</b>	N*m	2.5	
	<b>Mounting</b>		on DIN rail EN 60715 (35 mm) by means of fast clip device	
<b>Dimensions and weight</b>	<b>Connection</b>		from top and bottom	
	<b>Pole dimensions (H x D x W)</b>	mm	90 x 68 x 17.5	
<b>Dimensions and weight</b>	<b>Pole weight</b>	g	160	
	<b>Combination with auxiliary elements</b>	<b>Combinable with:</b>	signal contact/auxiliary switch	yes
		shunt trip	yes	
		undervoltage release	yes	
		mechanical interlock	yes	
		motor operating device	yes	

6000

# B & C



## S 280 80-100A B characteristic

Function: protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

Applications: commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=6 kA

Number of poles	Rated current In A	Order details	Order code	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code		EAN				
1	80	<b>S281 B80</b>	GHS2810001R0805	<b>499503</b>			0.140	1/6
	100	<b>S281 B100</b>	GHS2810001R0825	<b>499602</b>			0.140	1/6
2	80	<b>S282 B80</b>	GHS2820001R0805	<b>500100</b>			0.275	1/3
	100	<b>S282 B100</b>	GHS2820001R0825	<b>500209</b>			0.275	1/3
3	80	<b>S283 B80</b>	GHS2830001R0805	<b>500704</b>			0.400	1/2
	100	<b>S283 B100</b>	GHS2830001R0825	<b>500803</b>			0.400	1/2
4	80	<b>S284 B80</b>	GHS2840001R0805	<b>518006</b>			0.525	1
	100	<b>S284 B100</b>	GHS2840001R0825	<b>518105</b>			0.525	1

## S 280 80-100A C characteristic

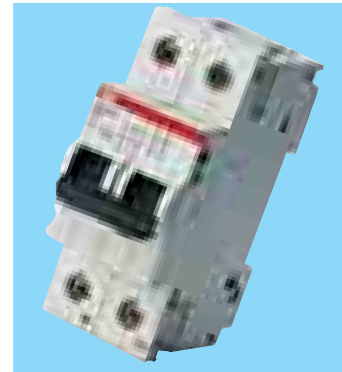
Function: protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

Applications: commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

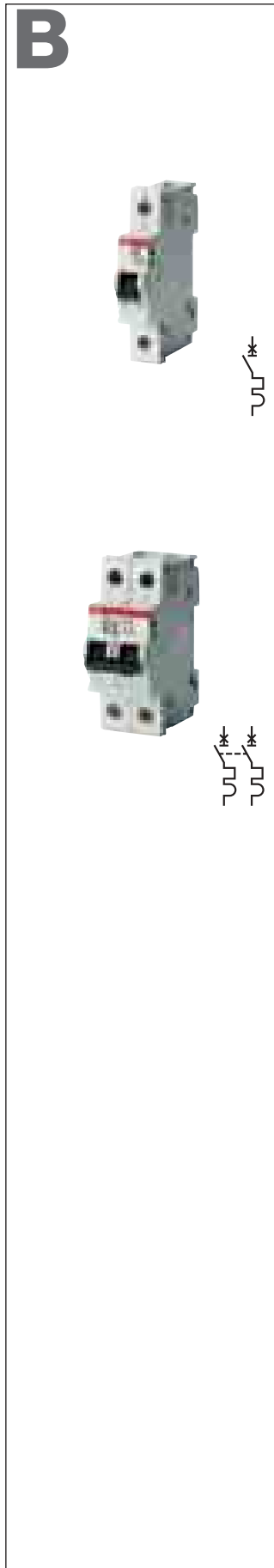
Icn=6 kA

Number of poles	Rated current In A	Order details	Order code	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code		EAN				
1	80	<b>S281 C80</b>	GHS2810001R0805	<b>499305</b>			0.140	1/6
	100	<b>S281 C100</b>	GHS2810001R0805	<b>499404</b>			0.140	1/6
2	80	<b>S282 C80</b>	GHS2810001R0805	<b>499909</b>			0.275	1/3
	100	<b>S282 C100</b>	GHS2810001R0805	<b>500001</b>			0.275	1/3
3	80	<b>S283 C80</b>	GHS2810001R0805	<b>500506</b>			0.400	1/2
	100	<b>S283 C100</b>	GHS2810001R0805	<b>500605</b>			0.400	1/2
4	80	<b>S284 C80</b>	GHS2810001R0805	<b>517801</b>			0.525	1
	100	<b>S284 C100</b>	GHS2810001R0805	<b>517900</b>			0.525	1



TECHNICAL FEATURES			S 280 UC		
<b>Standards</b>			IEC/EN 60947-2, UL1077 ①, CSA22.2 No.235 ①		
<b>Electrical features</b>	<b>Rated current I<sub>n</sub></b>	A	0.5 ≤ I <sub>n</sub> ≤ 40	50 ≤ I <sub>n</sub> ≤ 63	
	<b>Poles</b>			1P, 2P	
	<b>Rated voltage U<sub>e</sub></b>	IEC DC 1P	V	220	
		IEC DC 2P, 3P, 4P	V	440	
		UL/CSA DC 1P	V	250	
		UL/CSA DC 2P, 3P, 4P	V	250	
	<b>Insulation voltage U<sub>i</sub></b>		V	500	
	<b>Max. operating voltage U<sub>b</sub> max.</b>	IEC AC	V	254/440	
		UL/CSA AC	V	480 Y/277	
		IEC/UL/CSA DC 1P	V	250	
		IEC/UL/CSA DC 2P, 3P, 4P	V	250	
	<b>Min. operating voltage U<sub>b</sub> min.</b>		V	12 VAC - 12 VDC	
	<b>Rated frequency</b>		Hz	50...60	
	<b>Rated breaking capacity acc. to IEC/EN 60947-2 1P@ 220 VDC 2P, 3P, 4P@ 440 VDC</b>	ultimate I <sub>cu</sub>	kA	6	4.5
		service I <sub>cs</sub>	kA	6	4.5
<b>Rated interrupting capacity acc. to UL1077, CSA22.2 No.235 1P@60 VDC 2P,3P,4P@125 VDC</b>	IR	kA (RMS)	10		
<b>Rated impulse withstand voltage (1.2/50) U<sub>imp</sub></b>		kV	5		
<b>Dielectric test voltage at ind. freq. for 1 min.</b>		kV	2.5		
<b>Overvoltage category</b>			III		
<b>Thermomagnetic release characteristic</b>	B: 3 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 5 I <sub>n</sub>		■	■	
	K: 8 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 14 I <sub>n</sub>		■	■	
	Z: 2 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 3 I <sub>n</sub>		■	■	
<b>Mechanical features</b>	<b>Toggle</b>		black sealable in ON- OFF position		
	<b>Electrical life</b>		10000		
	<b>Mechanical life</b>		20000		
	<b>Protection degree</b>	housing		IP4X	
		terminals		IP2X	
	<b>Mechanical shock resistance</b>		30 g, minimum of 2 impacts, duration of shocks 13 ms		
	<b>Resistance to vibrations acc. to IEC/EN 60068-2-6</b>		5 g - 20 cycles at frequency 5...150...5 Hz with load 0,8 In		
	<b>Tropicalization acc. to IEC/EN 60068-2</b>	humid heat	°C/RH	28 cycles with 55/95...100	
		constant climatic conditions	°C/RH	23/83 - 40/93 - 55/20	
		variable climatic conditions	°C/RH	25/95 - 40/95	
	<b>Reference temperature for setting of thermal element</b>		°C	30 (20 for characteristics K,Z)	
	<b>Ambient temperature (with daily average ≤ +35°C)</b>	IEC	°C	-25...+55	
UL/CSA		°C	-25...+70		
Storage temperature		°C	-40...+70		
<b>Installation</b>	<b>Terminal type</b>		cage (shock protected)		
	<b>Terminal size top/bottom for cable</b>	IEC	mm <sup>2</sup>	25/25	
		UL/CSA	AWG	18-16	
	<b>Tightening torque</b>	IEC	N*m	2	
		UL/CSA	in-lbs.	17.5	
	<b>Tool</b>			No. 2 Posidriv	
	<b>Mounting</b>			on DIN rail EN 60715 (35 mm) by means of fast clip device	
<b>Connection</b>			from top or bottom, according to the position of load (see wiring diagrams)		
<b>Dimensions and weight</b>	<b>Pole dimensions (H x D x W)</b>	mm	90 x 68 x 17.5		
	<b>Pole weight</b>	g	140		
<b>Combination with auxiliary elements</b>	<b>Combinable with:</b>	signal contact/auxiliary switch	yes		
		shunt trip	yes		
		undervoltage release	yes		
		mechanical interlock	yes		
		motor operating device	yes		

① supplementary protection



**S 280 series UC B characteristic**

Function: protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems; version dedicated to application in direct current circuits for voltages up to 220 V DC 1 pole and 440 V DC 2, 3 and 4 poles.

**Applications: industrial.**

**Standard: IEC/EN 60947-2**

**Icn=6 kA**

Number of poles	Rated current In A	Order details Type code	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1	6	<b>S281-UC B 6</b>	GHS2810164R0065	<b>162302</b>			0.130	10/40
	10	<b>S281-UC B10</b>	GHS2810164R0065	<b>162401</b>			0.130	10/40
	UBmax 16	<b>S281-UC B16</b>	GHS2810164R0065	<b>162500</b>			0.130	10/40
	440 V~ 20	<b>S281-UC B20</b>	GHS2810164R0065	<b>162609</b>			0.130	10/40
	220 V -... 25	<b>S281-UC B25</b>	GHS2810164R0065	<b>162708</b>			0.130	10/40

2	6	<b>S282-UC B 6</b>	GHS2820164R0065	<b>162807</b>			0.260	5/20
	10	<b>S282-UC B10</b>	GHS2820164R0065	<b>162906</b>			0.260	5/20
	UBmax 16	<b>S282-UC B16</b>	GHS2820164R0065	<b>163002</b>			0.260	5/20
	440 V~ 20	<b>S282-UC B20</b>	GHS2820164R0065	<b>163101</b>			0.260	5/20
	440 V -... 25	<b>S282-UC B25</b>	GHS2820164R0065	<b>163200</b>			0.260	5/20

K



### S 280 series UC K (power) characteristic

Function: protection and control of the circuits like motors and auxiliary circuits, against overloads and short-circuits; version dedicated to application in direct current circuits for voltages up to 220 V DC 1 pole and 440 V DC 2, 3 and 4 poles.

Advantages: No nuisance tripping in the case of functional peak currents up to  $8 \times I_n$ , depending on the series; through its highly sensitive thermostatic bimetal trip, the K-type characteristic offers protection to damageable elements in the overcurrent range; it also provides the best protection to cables and lines.

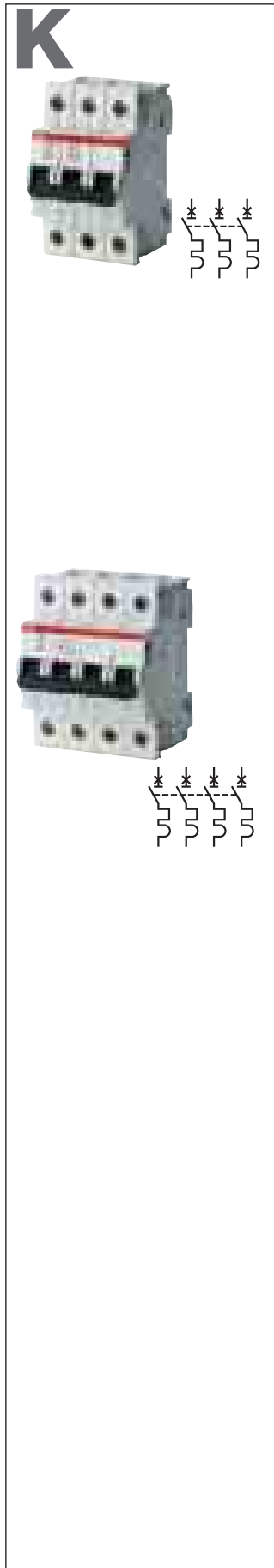
Applications: industrial.

Standard: IEC/EN 60947-2, VDE 0660 Part 101

$I_{cn}=6$  kA

Number of poles	Rated current $I_n$ A	Order details		Bbn 4012233 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	0.2	S 281 UC-K 0.2	GHS2810164R0087	634200			0.130	10/40
	0.3	S 281 UC-K 0.3	GHS2810164R0117	634309			0.130	10/40
	0.5	S 281 UC-K 0.5	GHS2810164R0157	634408			0.130	10/40
	0.75	S 281 UC-K 0.75	GHS2810164R0187	635504			0.130	10/40
	1	S 281 UC-K 1	GHS2810164R0217	634606			0.130	10/40
	1.6	S 281 UC-K 1.6	GHS2810164R0257	634705			0.130	10/40
	2	S 281 UC-K 2	GHS2810164R0277	634804			0.130	10/40
	3	S 281 UC-K 3	GHS2810164R0317	634903			0.130	10/40
	4	S 281 UC-K 4	GHS2810164R0337	635009			0.130	10/40
	6	S 281 UC-K 6	GHS2810164R0377	635207			0.130	10/40
	8	S 281 UC-K 8	GHS2810164R0407	635108			0.130	10/40
	10	S 281 UC-K 10	GHS2810164R0427	635306			0.130	10/40
	16	S 281 UC-K 16	GHS2810164R0467	635405			0.130	10/40
	20	S 281 UC-K 20	GHS2810164R0487	635603			0.130	10/40
	25	S 281 UC-K 25	GHS2810164R0517	635702			0.130	10/40
32	S 281 UC-K 32	GHS2810164R0537	635801			0.130	10/40	
_UBmax	40	S 281 UC-K 40	GHS2810164R0557	635900			0.130	10/40
440 V~	50	S 281 UC-K 50	GHS2810164R0577	636006			0.160	10/40
220 V -...	63	S 281 UC-K 63	GHS2810164R0607	636105			0.160	10/40

2	0.2	S 282 UC-K 0.2	GHS2820164R0087	636204			0.260	5/20
	0.3	S 282 UC-K 0.3	GHS2820164R0117	636303			0.260	5/20
	0.5	S 282 UC-K 0.5	GHS2820164R0157	636402			0.260	5/20
	0.75	S 282 UC-K 0.75	GHS2820164R0187	636501			0.260	5/20
	1	S 282 UC-K 1	GHS2820164R0217	636600			0.260	5/20
	1.6	S 282 UC-K 1.6	GHS2820164R0257	636709			0.260	5/20
	2	S 282 UC-K 2	GHS2820164R0277	652808			0.260	5/20
	3	S 282 UC-K 3	GHS2820164R0317	636808			0.260	5/20
	4	S 282 UC-K 4	GHS2820164R0337	636907			0.260	5/20
	6	S 282 UC-K 6	GHS2820164R0377	637003			0.260	5/20
	8	S 282 UC-K 8	GHS2820164R0407	637102			0.260	5/20
	10	S 282 UC-K 10	GHS2820164R0427	637201			0.260	5/20
	16	S 282 UC-K 16	GHS2820164R0467	637300			0.260	5/20
	20	S 282 UC-K 20	GHS2820164R0487	637409			0.260	5/20
	25	S 282 UC-K 25	GHS2820164R0517	637508			0.260	5/20
32	S 282 UC-K 32	GHS2820164R0537	637607			0.260	5/20	
_UBmax	40	S 282 UC-K 40	GHS2820164R0557	637706			0.260	5/20
440 V~	50	S 282 UC-K 50	GHS2820164R0577	637904			0.320	5/20
440 V -...	63	S 282 UC-K 63	GHS2820164R0607	638000			0.320	5/20



<b>3</b>	0.2	<b>S 283 UC-K 0.2</b>	GHS2830164R0087	<b>738106</b>	0.390	3/12
	0.3	<b>S 283 UC-K 0.3</b>	GHS2830164R0117	<b>738205</b>	0.390	3/12
	0.5	<b>S 283 UC-K 0.5</b>	GHS2830164R0157	<b>738304</b>	0.390	3/12
	0.75	<b>S 283 UC-K 0.75</b>	GHS2830164R0187	<b>738403</b>	0.390	3/12
	1	<b>S 283 UC-K 1</b>	GHS2830164R0217	<b>738502</b>	0.390	3/12
	1.6	<b>S 283 UC-K 1.6</b>	GHS2830164R0257	<b>738601</b>	0.390	3/12
	2	<b>S 283 UC-K 2</b>	GHS2830164R0277	<b>738700</b>	0.390	3/12
	3	<b>S 283 UC-K 3</b>	GHS2830164R0317	<b>738809</b>	0.390	3/12
	4	<b>S 283 UC-K 4</b>	GHS2830164R0337	<b>738908</b>	0.390	3/12
	6	<b>S 283 UC-K 6</b>	GHS2830164R0377	<b>739004</b>	0.390	3/12
	8	<b>S 283 UC-K 8</b>	GHS2830164R0407	<b>739103</b>	0.390	3/12
	10	<b>S 283 UC-K 10</b>	GHS2830164R0427	<b>739202</b>	0.390	3/12
	16	<b>S 283 UC-K 16</b>	GHS2830164R0467	<b>739301</b>	0.390	3/12
	20	<b>S 283 UC-K 20</b>	GHS2830164R0487	<b>739400</b>	0.390	3/12
	25	<b>S 283 UC-K 25</b>	GHS2830164R0517	<b>739509</b>	0.390	3/12
	32	<b>S 283 UC-K 32</b>	GHS2830164R0537	<b>739608</b>	0.390	3/12
	_UBmax	40	<b>S 283 UC-K 40</b>	GHS2830164R0557	<b>739707</b>	0.390
440 V~	50	<b>S 283 UC-K 50</b>	GHS2830164R0577	<b>739806</b>	0.480	3/12
440 V -...	63	<b>S 283 UC-K 63</b>	GHS2830164R0607	<b>739905</b>	0.480	3/12

<b>4</b>	0.2	<b>S 284 UC-K 0.2</b>	GHS2840164R0087	<b>741601</b>	0.520	2
	0.3	<b>S 284 UC-K 0.3</b>	GHS2840164R0117	<b>741700</b>	0.520	2
	0.5	<b>S 284 UC-K 0.5</b>	GHS2840164R0157	<b>741809</b>	0.520	2
	0.75	<b>S 284 UC-K 0.75</b>	GHS2840164R0187	<b>741908</b>	0.520	2
	1	<b>S 284 UC-K 1</b>	GHS2840164R0217	<b>742004</b>	0.520	2
	1.6	<b>S 284 UC-K 1.6</b>	GHS2840164R0257	<b>742103</b>	0.520	2
	2	<b>S 284 UC-K 2</b>	GHS2840164R0277	<b>742202</b>	0.520	2
	3	<b>S 284 UC-K 3</b>	GHS2840164R0317	<b>742301</b>	0.520	2
	4	<b>S 284 UC-K 4</b>	GHS2840164R0337	<b>742400</b>	0.520	2
	6	<b>S 284 UC-K 6</b>	GHS2840164R0377	<b>742509</b>	0.520	2
	8	<b>S 284 UC-K 8</b>	GHS2840164R0407	<b>742608</b>	0.520	2
	10	<b>S 284 UC-K 10</b>	GHS2840164R0427	<b>742707</b>	0.520	2
	16	<b>S 284 UC-K 16</b>	GHS2840164R0467	<b>742806</b>	0.520	2
	20	<b>S 284 UC-K 20</b>	GHS2840164R0487	<b>743001</b>	0.520	2
	25	<b>S 284 UC-K 25</b>	GHS2840164R0517	<b>743100</b>	0.520	2
	32	<b>S 284 UC-K 32</b>	GHS2840164R0537	<b>743209</b>	0.520	2
	_UBmax	40	<b>S 284 UC-K 40</b>	GHS2840164R0557	<b>743308</b>	0.520
440 V~	50	<b>S 284 UC-K 50</b>	GHS2840164R0577	<b>743407</b>	0.640	2
440 V -...	63	<b>S 284 UC-K 63</b>	GHS2840164R0607	<b>743506</b>	0.640	2

Z



### S 280 series UC Z characteristic

Function: protection and control of the electronic circuits against weak and long duration overloads and short-circuits; version dedicated to application in direct current circuits for voltages up to 220 V DC 1 pole and 440 V DC 2, 3 and 4 poles.

Applications: industrial.

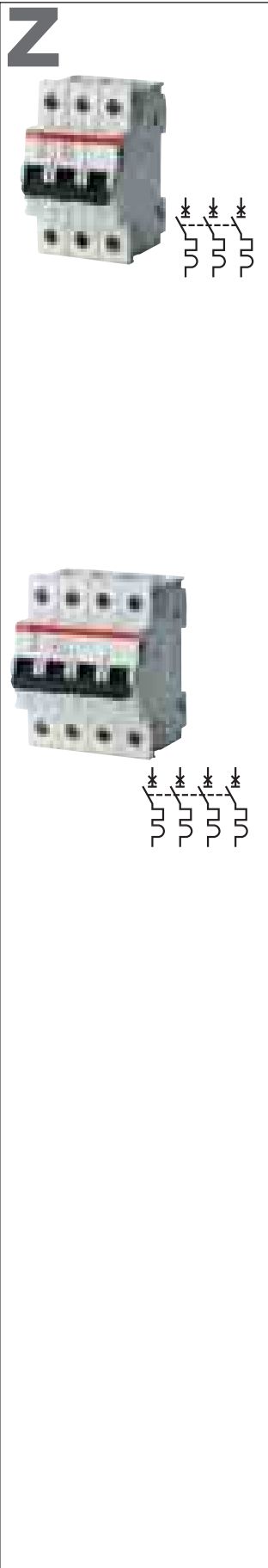
Standard: IEC/EN 60947-2, VDE 0660 Part 101

I<sub>cn</sub>=6 kA

Number of poles	Rated current In A	Order details Type code	Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.	
				4012233					EAN
1	0.5	S 281 UC-Z 0.5	GHS2810164R0158	638604			0.130	10/40	
	1	S 281 UC-Z 1	GHS2810164R0218	638703			0.130	10/40	
	1.6	S 281 UC-Z 1.6	GHS2810164R0258	638802			0.130	10/40	
	2	S 281 UC-Z 2	GHS2810164R0278	638901			0.130	10/40	
	3	S 281 UC-Z 3	GHS2810164R0318	639007			0.130	10/40	
	4	S 281 UC-Z 4	GHS2810164R0338	639106			0.130	10/40	
	6	S 281 UC-Z 6	GHS2810164R0378	639205			0.130	10/40	
	8	S 281 UC-Z 8	GHS2810164R0408	639403			0.130	10/40	
	10	S 281 UC-Z 10	GHS2810164R0428	639502			0.130	10/40	
	16	S 281 UC-Z 16	GHS2810164R0468	639601			0.130	10/40	
	20	S 281 UC-Z 20	GHS2810164R0488	639700			0.130	10/40	
	25	S 281 UC-Z 25	GHS2810164R0518	639809			0.130	10/40	
	32	S 281 UC-Z 32	GHS2810164R0538	639908			0.130	10/40	
	_UBmax	40	S 281 UC-Z 40	GHS2810164R0558	640003			0.130	10/40
	440 V~	50	S 281 UC-Z 50	GHS2810164R0578	640102			0.160	10/40
220 V -...	63	S 281 UC-Z 63	GHS2810164R0608	640201			0.160	10/40	

2	0.5	S 282 UC-Z 0.5	GHS2820164R0158	640300			0.260	5/20	
	1	S 282 UC-Z 1	GHS2820164R0218	640409			0.260	5/20	
	1.6	S 282 UC-Z 1.6	GHS2820164R0258	642304			0.260	5/20	
	2	S 282 UC-Z 2	GHS2820164R0278	641000			0.260	5/20	
	3	S 282 UC-Z 3	GHS2820164R0318	641109			0.260	5/20	
	4	S 282 UC-Z 4	GHS2820164R0338	641208			0.260	5/20	
	6	S 282 UC-Z 6	GHS2820164R0378	641307			0.260	5/20	
	8	S 282 UC-Z 8	GHS2820164R0408	641406			0.260	5/20	
	10	S 282 UC-Z 10	GHS2820164R0428	641505			0.260	5/20	
	16	S 282 UC-Z 16	GHS2820164R0468	641604			0.260	5/20	
	20	S 282 UC-Z 20	GHS2820164R0488	641703			0.260	5/20	
	25	S 282 UC-Z 25	GHS2820164R0518	641802			0.260	5/20	
	32	S 282 UC-Z 32	GHS2820164R0538	641901			0.260	5/20	
	_UBmax	40	S 282 UC-Z 40	GHS2820164R0558	642007			0.260	5/20
	440 V~	50	S 282 UC-Z 50	GHS2820164R0578	642106			0.320	5/20
440 V -...	63	S 282 UC-Z 63	GHS2820164R0608	642205			0.320	5/20	

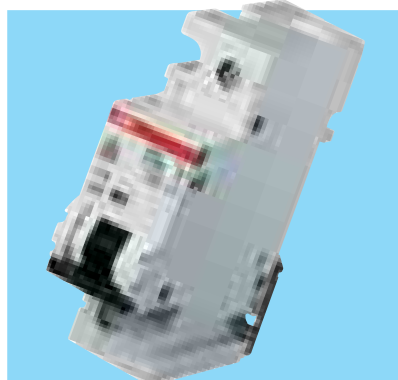




<b>3</b>	0.5	<b>S 283 UC-Z 0.5</b>	GHS2830164R0158	<b>740000</b>	0.390	3/12
	1	<b>S 283 UC-Z 1</b>	GHS2830164R0218	<b>740109</b>	0.390	3/12
	1.6	<b>S 283 UC-Z 1.6</b>	GHS2830164R0258	<b>740208</b>	0.390	3/12
	2	<b>S 283 UC-Z 2</b>	GHS2830164R0278	<b>740307</b>	0.390	3/12
	3	<b>S 283 UC-Z 3</b>	GHS2830164R0318	<b>740406</b>	0.390	3/12
	4	<b>S 283 UC-Z 4</b>	GHS2830164R0338	<b>740505</b>	0.390	3/12
	6	<b>S 283 UC-Z 6</b>	GHS2830164R0378	<b>740604</b>	0.390	3/12
	8	<b>S 283 UC-Z 8</b>	GHS2830164R0408	<b>740703</b>	0.390	3/12
	10	<b>S 283 UC-Z 10</b>	GHS2830164R0428	<b>740802</b>	0.390	3/12
	16	<b>S 283 UC-Z 16</b>	GHS2830164R0468	<b>740901</b>	0.390	3/12
	20	<b>S 283 UC-Z 20</b>	GHS2830164R0488	<b>741007</b>	0.390	3/12
	25	<b>S 283 UC-Z 25</b>	GHS2830164R0518	<b>741106</b>	0.390	3/12
	32	<b>S 283 UC-Z 32</b>	GHS2830164R0538	<b>741205</b>	0.390	3/12
	_UBmax	40	<b>S 283 UC-Z 40</b>	GHS2830164R0558	<b>741304</b>	0.390
440 V~	50	<b>S 283 UC-Z 50</b>	GHS2830164R0578	<b>741403</b>	0.480	3/12
440 V -...	63	<b>S 283 UC-Z 63</b>	GHS2830164R0608	<b>741502</b>	0.480	3/12

<b>4</b>	0.5	<b>S 284 UC-Z 0.5</b>	GHS2840164R0158	<b>743605</b>	0.520	2
	1	<b>S 284 UC-Z 1</b>	GHS2840164R0218	<b>743704</b>	0.520	2
	1.6	<b>S 284 UC-Z 1.6</b>	GHS2840164R0258	<b>743803</b>	0.520	2
	2	<b>S 284 UC-Z 2</b>	GHS2840164R0278	<b>743902</b>	0.520	2
	3	<b>S 284 UC-Z 3</b>	GHS2840164R0318	<b>744008</b>	0.520	2
	4	<b>S 284 UC-Z 4</b>	GHS2840164R0338	<b>744107</b>	0.520	2
	6	<b>S 284 UC-Z 6</b>	GHS2840164R0378	<b>744206</b>	0.520	2
	8	<b>S 284 UC-Z 8</b>	GHS2840164R0408	<b>744305</b>	0.520	2
	10	<b>S 284 UC-Z 10</b>	GHS2840164R0428	<b>744404</b>	0.520	2
	16	<b>S 284 UC-Z 16</b>	GHS2840164R0468	<b>744503</b>	0.520	2
	20	<b>S 284 UC-Z 20</b>	GHS2840164R0488	<b>744602</b>	0.520	2
	25	<b>S 284 UC-Z 25</b>	GHS2840164R0518	<b>744701</b>	0.520	2
	32	<b>S 284 UC-Z 32</b>	GHS2840164R0538	<b>744800</b>	0.520	2
	_UBmax	40	<b>S 284 UC-Z 40</b>	GHS2840164R0558	<b>744909</b>	0.520
440 V~	50	<b>S 284 UC-Z 50</b>	GHS2840164R0578	<b>745005</b>	0.640	2
440 V -...	63	<b>S 284 UC-Z 63</b>	GHS2840164R0608	<b>745104</b>	0.640	2

**2**



TECHNICAL FEATURES			S 290
Standards			IEC / EN 60898, IEC / EN 60947-2, UL 1077 ①
Rated current I <sub>n</sub>	A		80 ≤ I <sub>n</sub> ≤ 125
Poles			1P, 2P, 3P, 4P
Rated voltage U <sub>e</sub>	IEC AC 1P	V	230-240
	IEC AC 2P, 3P, 4P	V	230/400-240/415
	UL AC 1P	V	277
	UL AC 2P, 3P, 4P	V	480 Y/277
Insulation voltage U <sub>i</sub>		V	500
Max. operating voltage U <sub>b</sub> max.	IEC AC	V	250/440
	UL AC 1P	V	480 Y/277
	IEC/UL DC 1P	V	60
	IEC/UL DC 2P, 3P, 4P	V	125
Min. operating voltage U <sub>b</sub> min.		V	24VAC - 24VDC
Rated frequency		Hz	50...60
Rated breaking capacity acc. to IEC/EN 60898	ultimate I <sub>cn</sub>	A	10000
Rated breaking capacity acc. to IEC/EN 60947-2 1P @ 230 VAC 2P, 3P, 4P @ 400 VAC	ultimate I <sub>cu</sub>	kA	20 (15 for D characteristic)
Rated interrupting capacity acc. to UL1077, CSA22.2 No.235 1P@277 VAC 2P,3P,4P@480 VAC	service I <sub>cs</sub>	kA	10 (8 for D characteristic)
	IR	kA (RMS)	5
Rated impulse withstand voltage (1.2/50) U <sub>imp</sub>		kV	5
Dielectric test voltage at ind. freq. for 1 min.		kV	2.5
Overvoltage category			III
Thermomagnetic release characteristic	C: 5 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 10 I <sub>n</sub>		■
	D: 10 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 20 I <sub>n</sub>		■
	K: 10 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 14 I <sub>n</sub>		■
Toggle			black sealable in ON-OFF position
Electrical life			10000
Mechanical life			20000
Protection degree	housing		IP4X
	terminals		IP2X
Mechanical shock resistance			5 g, 2 impact shock, half wave form, duration 11 ms
Resistance to vibrations acc. to IEC/EN 60068-2-6			5 g - 20 cycles at frequency 5...150...5 Hz with load 0.8 I <sub>n</sub>
Tropicalization acc. to IEC/EN 60068-2	humid heat	°C/RH	28 cycles with 55/95...100
	constant climatic conditions	°C/RH	23/83 - 40/93 - 55/20
	variable climatic conditions	°C/RH	25/95 - 40/95
Reference temperature for setting of thermal element		°C	30 (20 for characteristics K,Z)
Ambient temperature (with daily average ≤ +35 °C)	IEC/UL	°C	-25...+45
		°C	-40...+70
Storage temperature		°C	-40...+70
Terminal type			cage (shock protected)
Terminal size top/bottom for cable	IEC	mm <sup>2</sup>	50/50
	UL	AWG	14-1
Tightening torque	IEC	N*m	3.0...3.5
	UL	in-lbs.	35
			No. 2 Posidriv
Mounting			on DIN rail EN 60715 (35 mm) by means of fast clip device
Connection			from top and bottom
Pole dimensions (H x D x W)		mm	90 x 70 x 26.25
Pole weight		g	258
Combinable with:	signal contact/auxiliary switch		yes
	shunt trip		yes
	undervoltage release		yes
	mechanical interlock		no
	motor operating device		no

① supplementary protection

10000

C

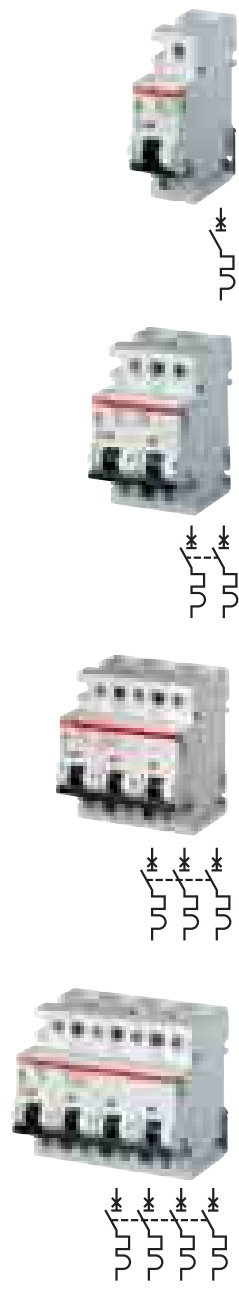
**S 290 C characteristic**

Function: protection and control of the circuits against overloads and short-circuits when high nominal currents are required; protection for resistive and inductive loads with low inrush current.

Applications: commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=10 kA



Number of poles	Rated current In A	Order details	Order code	Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code		4016799				
1	80	<b>S291 C 80</b>	GHS2912001R0804	<b>570541</b>			0.267	1/6
	100	<b>S291 C100</b>	GHS2912001R0824	<b>570572</b>			0.267	1/6
	125	<b>S291 C125</b>	GHS2912001R0844	<b>570602</b>			0.267	1/6

2	80	<b>S292 C 80</b>	GHS2922001R0804	<b>570626</b>			0.534	1/3
	100	<b>S292 C100</b>	GHS2922001R0824	<b>570657</b>			0.534	1/3
	125	<b>S292 C125</b>	GHS2922001R0844	<b>570688</b>			0.534	1/3

3	80	<b>S293 C 80</b>	GHS2932001R0804	<b>570701</b>			0.801	1/2
	100	<b>S293 C100</b>	GHS2932001R0824	<b>570732</b>			0.801	1/2
	125	<b>S293 C125</b>	GHS2932001R0844	<b>570763</b>			0.801	1/2

4	80	<b>S294 C 80</b>	GHS2942001R0804	<b>570787</b>			1.068	1
	100	<b>S294 C100</b>	GHS2942001R0824	<b>570732</b>			1.068	1
	125	<b>S294 C125</b>	GHS2942001R0844	<b>570848</b>			1.068	1

10000

2

D

**S 290 D characteristic**

Function: protection and control of the circuits against overloads and short-circuits when high nominal current are required; protection for circuits which supply loads with high inrush current at the circuit closing (motors, LV / LV transformers, breakdown lamps).

Applications: commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=10 kA



Number of poles	Rated current In A	Order details		Bbn 4016799 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	80	S291 D 80	GHS2912001R0801	120807			0.267	1/6
	100	S291 D100	GHS2912001R0821	120906			0.267	1/6

2	80	S292 D 80	GHS2922001R0801	121002			0.534	1/3
	100	S292 D100	GHS2922001R0821	121507			0.534	1/3

3	80	S293 D 80	GHS2932001R0801	121705			0.801	1/2
	100	S293 D100	GHS2932001R0821	121804			0.801	1/2

4	80	S294 D 80	GHS2942001R0801	121200			1.068	1
	100	S294 D100	GHS2942001R0821	121309			1.068	1

10000

K

**S 290 K (power) characteristic**

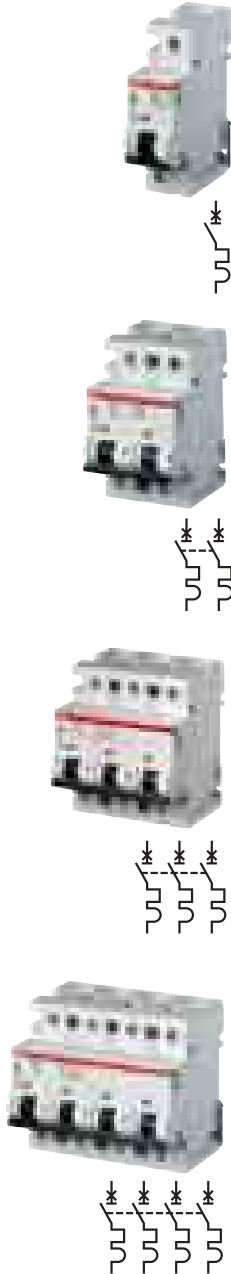
Function: protection and control of the circuits like motors, transformer and auxiliary circuits, against overloads and short-circuits when high nominal current are required.

Advantages: No nuisance tripping in the case of functional peak currents up to 8xI<sub>n</sub>, depending on the series; through its highly sensitive thermostatic bimetal trip, the K-type characteristic offers protection to damageable elements in the overcurrent range; it also provides the best protection to cables and lines.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2, VDE 0660 Part 101

I<sub>cn</sub>=10 kA

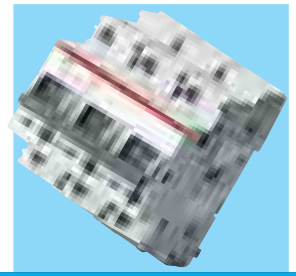


Number of poles	Rated current In A	Order details		Bbn 4016799 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	80	S291 K 80	GHS2912001R0807	570558			0.267	1/6
	100	S291 K100	GHS2912001R0827	570589			0.267	1/6
2	80	S292 K 80	GHS2922001R0807	570633			0.534	1/3
	100	S292 K100	GHS2922001R0827	570664			0.534	1/3
3	80	S293 K 80	GHS2932001R0807	570718			0.801	1/2
	100	S293 K100	GHS2932001R0827	570749			0.801	1/2
4	80	S294 K 80	GHS2942001R0807	570794			1.068	1
	100	S294 K100	GHS2942001R0827	570824			1.068	1



TECHNICAL FEATURES		S500	S 500-K	S 500-KM
<b>Standards</b>		IEC/EN 60898, IEC/EN 60947-2, UL 1077 ①, CAN/CSA-C22.2 ① N235-M89		
<b>Rated current I<sub>n</sub></b>	A	6 ≤ I <sub>n</sub> ≤ 63	adjustable 0.1 ≤ I <sub>n</sub> ≤ 11	adjustable 11 ≤ I <sub>n</sub> ≤ 45
<b>Poles</b>		1P, 2P, 3P, 4P	1P, 2P, 3P	3P
<b>Rated voltage U<sub>e</sub></b>	IEC AC 1P	V	230-240	
	IEC AC 2P, 3P, 4P	V	230-240/400-415	
	UL/CSA AC 1P	V	240-277-346	
	UL/CSA AC 2P, 3P, 4P	V	415 Y/240 - 480 Y/277 - 600 Y/346	
<b>Insulation voltage U<sub>i</sub></b>		V	690	
<b>Max. operating voltage U<sub>b</sub> max.</b>	IEC AC	V	400/690	
	UL/CSA AC	V	600 Y/346	
<b>Min. operating voltage U<sub>b</sub> min.</b>		V	12VAC - 12VDC	
<b>Rated frequency</b>		Hz	16 2/3 ...60 Hz (S500-X: > 60 ... 400 Hz)	
<b>Rated breaking capacity acc. to IEC/EN 60898</b>	ultimate I <sub>cn</sub>	A	25000	-
<b>Rated breaking capacity acc. to IEC/EN 60947-2</b>	ultimate I <sub>cu</sub>	kA	50	50
			30	25
<b>1P @ 230 VAC</b>				
<b>2P, 3P, 4P @ 400 VAC</b>	service I <sub>cs</sub>	kA	25	30
<b>Rated interrupting capacity acc. to UL1077, CSA22.2 No.235 1P@277 VAC 2P,3P,4P@480 VAC</b>	IR	kA (RMS)	14	25
<b>Rated impulse withstand voltage (1.2/50) U<sub>imp</sub></b>		kV	6	
<b>Dielectric test voltage at ind. freq. for 1 min.</b>		kV	3	
<b>Overvoltage category</b>				
<b>Thermomagnetic release characteristic</b>	B: 3 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 5 I <sub>n</sub>	■		
	C: 5 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 10 I <sub>n</sub>	■		
	D: 10 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 20 I <sub>n</sub>	■		
	K: 8 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 14 I <sub>n</sub>		■	■
	Magn. only KM: 8 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 14 I <sub>n</sub> **			■
<b>Toggle</b>			grey sealable in ON-OFF position	
<b>Electrical life</b>			10000	
<b>Mechanical life</b>			20000	
<b>Protection degree</b>	housing		IP4X	
	terminals		IP2X	
<b>Tropicalization acc. to IEC/EN 60068-2</b>	humid heat	°C/RH	DIN 50016	
	constant climatic conditions	°C/RH		
	variable climatic conditions	°C/RH		
<b>Reference temperature for setting of thermal element</b>		°C	30	40
<b>Ambient temperature (with daily average ≤ +35 °C)</b>	IEC	°C	-25...+55	
	UL/CSA		-25...+55	
<b>Storage temperature</b>		°C	-40...+70	
<b>Terminal type</b>			cage (shock protected)	
<b>Terminal size top/bottom for cable</b>	IEC	mm <sup>2</sup>	25/25	
	UL/CSA	AWG	16-4	
<b>Tightening torque</b>	IEC	N*m	2	
	UL/CSA	in-lbs.	17.5	
<b>Tool</b>			Nr. 2 Posidriv	
<b>Mounting</b>			on DIN rail EN 60715 (35 mm) by means of rapid fixing device	
<b>Connection</b>			from top and bottom	
<b>Pole dimensions (H x D x W)</b>		mm	91 x 92 x 25	
<b>Pole weight</b>		g	250	
<b>Combinable with:</b>	signal contact/auxiliary switch		yes	
	shunt trip		yes	
	undervoltage release		yes (factory fitted)	
	mechanical interlock		no	
	motor operating device		no	

① supplementary protection



TECHNICAL FEATURES		S 500 UC-B		S 500 UC-K	
<b>Standards</b>		IEC/EN 60898, IEC/EN 60947-2, UL 1077 ①, CAN/CSA-C22.2 ① N235-M89			
<b>Rated current I<sub>n</sub></b>		A	6 ≤ I <sub>n</sub> ≤ 63	adjustable 0.1 ≤ I <sub>n</sub> ≤ 45	
<b>Poles</b>				1P, 2P, 3P, 4P	
<b>Rated voltage U<sub>e</sub></b>	IEC DC	V	250 per pole (4P 750V)	250 per pole (4P 750V)	
	UL/CSA DC	V	250 per pole (4P 750V)	1000 VDC	
<b>Insulation voltage U<sub>i</sub></b>		V	1000 VDC		
<b>Max. operating voltage U<sub>b</sub> max.</b>	IEC DC	V	250 per pole (4P 750V)	250 per pole (4P 750V)	
	UL/CSA DC	V	250 per pole (4P 750V)	12VAC - 12VDC	
<b>Min. operating voltage U<sub>b</sub> min.</b>		V	12VAC - 12VDC		
<b>Rated frequency</b>		Hz	16 2/3 ... 60 Hz (S500-X: > 60 ... 400 Hz)		
<b>Rated breaking capacity acc. to IEC/EN 60947-2 1P@ 250 VDC 2P@500VDC 3P, 4P@ 750 VDC</b>	ultimate I <sub>cu</sub>	kA	30		
<b>Rated interrupting capacity acc. to UL1077, CSA22.2 No.235 1P@60 VDC 2P,3P,4P@125 VDC</b>	service I <sub>cs</sub>	kA	30		
	IR	kA (RMS)	30		
<b>Rated impulse withstand voltage (1.2/50) U<sub>imp</sub></b>		kV			
<b>Dielectric test voltage at ind. freq. for 1 min.</b>		kV			
<b>Overvoltage category</b>					
<b>Thermomagnetic release characteristic</b>	B: 3 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 5 I <sub>n</sub> K: 8 I <sub>n</sub> ≤ I <sub>m</sub> ≤ 14 I <sub>n</sub>		■		■
<b>Toggle</b>			grey sealable in ON-OFF position		
<b>Electrical life</b>			10000		
<b>Mechanical life</b>			20000		
<b>Protection degree</b>	housing		IP4X		
	terminals		IP2X		
<b>Tropicalization acc. to IEC/EN 60068-2</b>	humid heat	°C/RH	DIN 50016		
	constant climatic conditions	°C/RH			
	variable climatic conditions	°C/RH			
<b>Reference temperature for setting of thermal element</b>		°C	40		
<b>Ambient temperature (with daily average ≤ +35 °C)</b>	IEC	°C	-25...+55		
	UL/CSA	°C	-25...+70		
<b>Storage temperature</b>		°C	-40...+70		
<b>Terminal type</b>			cage (shock protected)		
<b>Terminal size top/bottom for cable</b>	IEC	mm <sup>2</sup>	25/25		
	UL/CSA	AWG	18-16		
<b>Tightening torque</b>	IEC	N*m	2		
	UL/CSA	in-lbs.	17.5		
<b>Tool</b>			Nr. 2 Posidriv		
<b>Mounting</b>			on DIN rail EN 60715 (35 mm) by means of rapid fixing device		
<b>Connection</b>			from top and bottom		
<b>Pole dimensions (H x D x W)</b>		mm	91 x 92 x 25		
<b>Pole weight</b>		g	250		
<b>Combinable with:</b>	signal contact/auxiliary switch		yes		
	shunt trip		yes		
	undervoltage release		yes (factory fitted)		
	mechanical interlock		no		
	motor operating device		no		

① supplementary protection



25000

B

2

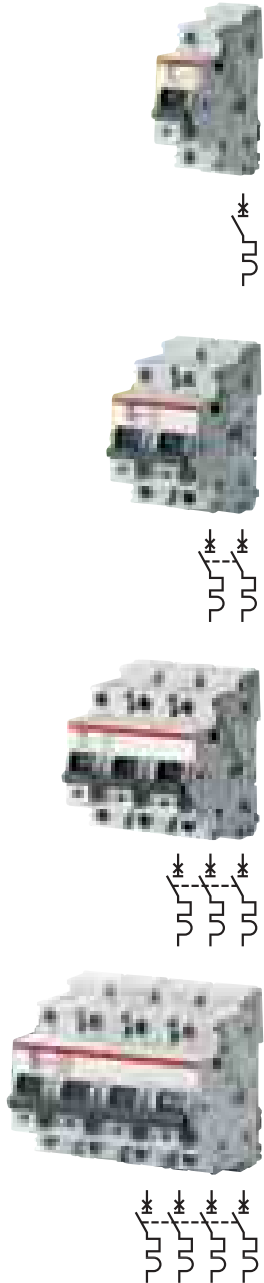
S 500 B characteristic

Function: protection and control of the circuits against overloads and short-circuits when an high breaking capacity is required; protection for people and big length cables in TN and IT systems; very useful when it is needed selectivity vs an MCCB or back-up vs other MCBs wired downstream.

Applications: commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=25 kA



Number of poles	Rated current In A	Order details		Bbn 7612270	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	6	S 501 B6	GHS5010001R0065	300006			0.250	8
	10	S 501 B10	GHS5010001R0105	300013			0.250	8
	13	S 501 B13	GHS5010001R0135	300020			0.250	8
	16	S 501 B16	GHS5010001R0165	300037			0.250	8
	20	S 501 B20	GHS5010001R0205	300044			0.250	8
	25	S 501 B25	GHS5010001R0255	300051			0.250	8
	32	S 501 B32	GHS5010001R0325	300068			0.250	8
	40	S 501 B40	GHS5010001R0405	300075			0.250	8
	50	S 501 B50	GHS5010001R0505	300082			0.250	8
	63	S 501 B63	GHS5010001R0635	300099			0.250	8
2	6	S 502 B6	GHS5020001R0065	300105			0.500	4
	10	S 502 B10	GHS5020001R0105	300112			0.500	4
	13	S 502 B13	GHS5020001R0135	300129			0.500	4
	16	S 502 B16	GHS5020001R0165	300136			0.500	4
	20	S 502 B20	GHS5020001R0205	300143			0.500	4
	25	S 502 B25	GHS5020001R0255	300150			0.500	4
	32	S 502 B32	GHS5020001R0325	300167			0.500	4
	40	S 502 B40	GHS5020001R0405	300174			0.500	4
	50	S 502 B50	GHS5020001R0505	300181			0.500	4
	63	S 502 B63	GHS5020001R0635	300198			0.500	4
3	6	S 503 B6	GHS5030001R0065	300204			0.750	2
	10	S 503 B10	GHS5030001R0105	300211			0.750	2
	13	S 503 B13	GHS5030001R0135	300228			0.750	2
	16	S 503 B16	GHS5030001R0165	300235			0.750	2
	20	S 503 B20	GHS5030001R0205	300242			0.750	2
	25	S 503 B25	GHS5030001R0255	300259			0.750	2
	32	S 503 B32	GHS5030001R0325	300266			0.750	2
	40	S 503 B40	GHS5030001R0405	300273			0.750	2
	50	S 503 B50	GHS5030001R0505	300280			0.750	2
	63	S 503 B63	GHS5030001R0635	300297			0.750	2
4	6	S 504 B6	GHS5040001R0065	300303			1.000	2
	10	S 504 B10	GHS5040001R0105	300310			1.000	2
	13	S 504 B13	GHS5040001R0135	300327			1.000	2
	16	S 504 B16	GHS5040001R0165	300334			1.000	2
	20	S 504 B20	GHS5040001R0205	300341			1.000	2
	25	S 504 B25	GHS5040001R0255	300358			1.000	2
	32	S 504 B32	GHS5040001R0325	300365			1.000	2
	40	S 504 B40	GHS5040001R0405	300372			1.000	2
	50	S 504 B50	GHS5040001R0505	300389			1.000	2
	63	S 504 B63	GHS5040001R0635	300396			1.000	2

25000

C

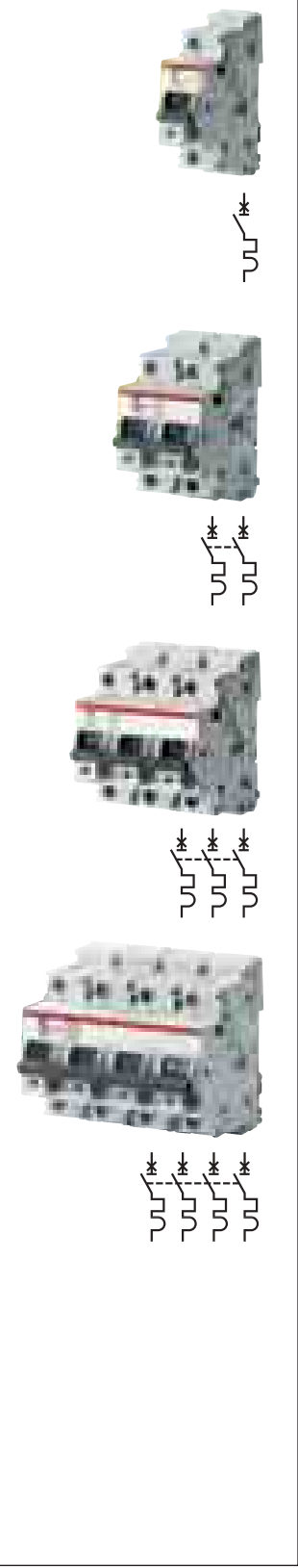
S 500 C characteristic

Function: protection and control of the circuits against overloads and short-circuits when an high breaking capacity is required; protection for resistive and inductive loads with low inrush current; very useful when it is needed selectivity vs an MCCB or back-up vs other MCBs wired downstream.

Applications: commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=25 kA



Number of poles	Rated current In A	Order details		Bbn 7612270 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	6	S 501 C6	GHS5010001R0064	300501			0.250	8
	10	S 501 C10	GHS5010001R0104	300518			0.250	8
	13	S 501 C13	GHS5010001R0134	300525			0.250	8
	16	S 501 C16	GHS5010001R0164	300532			0.250	8
	20	S 501 C20	GHS5010001R0204	300549			0.250	8
	25	S 501 C25	GHS5010001R0254	300556			0.250	8
	32	S 501 C32	GHS5010001R0324	300563			0.250	8
	40	S 501 C40	GHS5010001R0404	300570			0.250	8
	50	S 501 C50	GHS5010001R0504	300587			0.250	8
	63	S 501 C63	GHS5010001R0634	300594			0.250	8
2	6	S 502 C6	GHS5020001R0064	300600			0.500	4
	10	S 502 C10	GHS5020001R0104	300617			0.500	4
	13	S 502 C13	GHS5020001R0134	300624			0.500	4
	16	S 502 C16	GHS5020001R0164	300631			0.500	4
	20	S 502 C20	GHS5020001R0204	300648			0.500	4
	25	S 502 C25	GHS5020001R0254	300655			0.500	4
	32	S 502 C32	GHS5020001R0324	300662			0.500	4
	40	S 502 C40	GHS5020001R0404	300679			0.500	4
	50	S 502 C50	GHS5020001R0504	300686			0.500	4
	63	S 502 C63	GHS5020001R0634	300693			0.500	4
3	6	S 503 C6	GHS5030001R0064	300709			0.750	2
	10	S 503 C10	GHS5030001R0104	300716			0.750	2
	13	S 503 C13	GHS5030001R0134	300723			0.750	2
	16	S 503 C16	GHS5030001R0164	300730			0.750	2
	20	S 503 C20	GHS5030001R0204	300747			0.750	2
	25	S 503 C25	GHS5030001R0254	300754			0.750	2
	32	S 503 C32	GHS5030001R0324	300761			0.750	2
	40	S 503 C40	GHS5030001R0404	300778			0.750	2
	50	S 503 C50	GHS5030001R0504	300785			0.750	2
	63	S 503 C63	GHS5030001R0634	300792			0.750	2
4	6	S 504 C6	GHS5040001R0064	300808			1.000	2
	10	S 504 C10	GHS5040001R0104	300815			1.000	2
	13	S 504 C13	GHS5040001R0134	300822			1.000	2
	16	S 504 C16	GHS5040001R0164	300839			1.000	2
	20	S 504 C20	GHS5040001R0204	300846			1.000	2
	25	S 504 C25	GHS5040001R0254	300853			1.000	2
	32	S 504 C32	GHS5040001R0324	300860			1.000	2
	40	S 504 C40	GHS5040001R0404	300877			1.000	2
	50	S 504 C50	GHS5040001R0504	300884			1.000	2
	63	S 504 C63	GHS5040001R0634	300891			1.000	2

25000

D

2

S 500 D characteristic

Function: protection and control of the circuits against overloads and short-circuits when an high breaking capacity is required; protection for circuits which supply loads with high inrush current at the circuit closing (motors, LV / LV transformers, breakdown lamps); very useful when it is needed selectivity vs an MCCB or back-up vs other MCBs wired downstream.

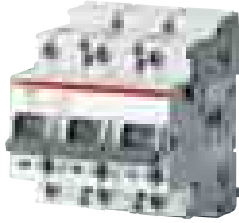
Applications: commercial and industrial.

Standard: IEC/EN 60898, IEC/EN 60947-2

Icn=25 kA

Number of poles	Rated current In A	Order details		Bbn 7612270 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	10	S 501 D10	GHS5010001R0101	510535			0.250	8
	13	S 501 D13	GHS5010001R0131	301027			0.250	8
	16	S 501 D16	GHS5010001R0161	301034			0.250	8
	20	S 501 D20	GHS5010001R0201	301041			0.250	8
	25	S 501 D25	GHS5010001R0251	301058			0.250	8
	32	S 501 D32	GHS5010001R0321	301065			0.250	8
	40	S 501 D40	GHS5010001R0401	301072			0.250	8
	50	S 501 D50	GHS5010001R0501	301089			0.250	8
2	63	S 501 D63	GHS5010001R0631	301096			0.250	8
	10	S 502 D10	GHS5020001R0101	500376			0.500	4
	13	S 502 D13	GHS5020001R0131	301126			0.500	4
	16	S 502 D16	GHS5020001R0161	301133			0.500	4
	20	S 502 D20	GHS5020001R0201	301140			0.500	4
	25	S 502 D25	GHS5020001R0251	301157			0.500	4
	32	S 502 D32	GHS5020001R0321	301164			0.500	4
	40	S 502 D40	GHS5020001R0401	301171			0.500	4
3	50	S 502 D50	GHS5020001R0502	301188			0.500	4
	63	S 502 D63	GHS5020001R0631	301195			0.500	4
	10	S 503 D10	GHS5030001R0101	500475			0.750	2
	13	S 503 D13	GHS5030001R0131	301225			0.750	2
	16	S 503 D16	GHS5030001R0161	301232			0.750	2
	20	S 503 D20	GHS5030001R0201	301249			0.750	2
	25	S 503 D25	GHS5030001R0251	301256			0.750	2
	32	S 503 D32	GHS5030001R0321	301263			0.750	2
4	40	S 503 D40	GHS5030001R0401	301270			0.750	2
	50	S 503 D50	GHS5030001R0503	301287			0.750	2
	63	S 503 D63	GHS5030001R0631	301294			0.750	2
	10	S 504 D10	GHS5040001R0101	510528			1.000	2
	13	S 504 D13	GHS5040001R0131	301324			1.000	2
	16	S 504 D16	GHS5040001R0161	301331			1.000	2
	20	S 504 D20	GHS5040001R0201	301348			1.000	2
	25	S 504 D25	GHS5040001R0251	301355			1.000	2
4	32	S 504 D32	GHS5040001R0321	301362			1.000	2
	40	S 504 D40	GHS5040001R0401	301379			1.000	2
	50	S 504 D50	GHS5040001R0504	301386			1.000	2
	63	S 504 D63	GHS5040001R0631	301393			1.000	2

**K**



**S 500 K (power) characteristic**

Function: protection and control of the circuits like motors, transformer and auxiliary circuits, against overloads and short-circuits when an high breaking capacity is required; very useful when it is needed selectivity vs an MCCB or back-up vs other MCBs wired downstream; version with adjustable thermal release, dedicated to protect motors.

Advantages: No nuisance tripping in the case of functional peak currents up to  $8xI_n$ , depending on the series; through its highly sensitive thermostatic bimetal trip, the K-type characteristic offers protection to damageable elements in the overcurrent range; it also provides the best protection to cables and lines.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2, VDE 0660 Part 101

I<sub>cn</sub>=25 kA

Number of poles	Rated current In A	Order details		Bbn 7612270 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	0.1-0.15	<b>S 501 K0.1 - 0.15</b>	GHS5010001R0057	<b>303007</b>			0.250	8
	0.14-0.21	<b>S 501 K0.14 - 0.21</b>	GHS5010001R0097	<b>303014</b>			0.250	8
	0.2-0.3	<b>S 501 K0.2 - 0.3</b>	GHS5010001R0117	<b>303021</b>			0.250	8
	0.28-0.42	<b>S 501 K0.28 - 0.42</b>	GHS5010001R0137	<b>303038</b>			0.250	8
	0.38-0.58	<b>S 501 K0.38 - 0.58</b>	GHS5010001R0177	<b>303045</b>			0.250	8
	0.53-0.8	<b>S 501 K0.53 - 0.8</b>	GHS5010001R0197	<b>303052</b>			0.250	8
	0.73-1.1	<b>S 501 K0.73 - 1.1</b>	GHS5010001R0217	<b>303069</b>			0.250	8
	1-1.5	<b>S 501 K1 - 1.5</b>	GHS5010001R0257	<b>303076</b>			0.250	8
	1.4-2.1	<b>S 501 K1.4 - 2.1</b>	GHS5010001R0287	<b>303083</b>			0.250	8
	2-3	<b>S 501 K2-3</b>	GHS5010001R0317	<b>303090</b>			0.250	8
	2.8-4.2	<b>S 501 K2.8 - 4.2</b>	GHS5010001R0347	<b>303106</b>			0.250	8
	3.8-5.8	<b>S 501 K3.8 - 5.8</b>	GHS5010001R0377	<b>303113</b>			0.250	8
	5.3-8	<b>S 501 K5.3 - 8</b>	GHS5010001R0407	<b>303120</b>			0.250	8
	7.3-11	<b>S 501 K7.3 - 11</b>	GHS5010001R0437	<b>303137</b>			0.250	8
	10-15	<b>S 501 K10 - 15</b>	GHS5010001R0467	<b>303144</b>			0.250	8
	14-20	<b>S 501 K14 - 20</b>	GHS5010001R0487	<b>303151</b>			0.250	8
	18-26	<b>S 501 K18 - 26</b>	GHS5010001R0517	<b>303168</b>			0.250	8
	23-32	<b>S 501 K23 - 32</b>	GHS5010001R0537	<b>303175</b>			0.250	8
	29-37	<b>S 501 K29 - 37</b>	GHS5010001R0547	<b>303182</b>			0.250	8
	34-41	<b>S 501 K34 - 41</b>	GHS5010001R0557	<b>303199</b>			0.250	8
38-45	<b>S 501 K38 - 45</b>	GHS5010001R0557	<b>303205</b>			0.250	8	
2	0.1-0.15	<b>S 502 K0.1 - 0.15</b>	GHS5020001R0057	<b>303250</b>			0.500	4
	0.14-0.21	<b>S 502 K0.14 - 0.21</b>	GHS5020001R0097	<b>303267</b>			0.500	4
	0.2-0.3	<b>S 502 K0.2 - 0.3</b>	GHS5020001R0117	<b>303274</b>			0.500	4
	0.28-0.42	<b>S 502 K0.28 - 0.42</b>	GHS5020001R0137	<b>303281</b>			0.500	4
	0.38-0.58	<b>S 502 K0.38 - 0.58</b>	GHS5020001R0177	<b>303298</b>			0.500	4
	0.53-0.8	<b>S 502 K0.53 - 0.8</b>	GHS5020001R0197	<b>303304</b>			0.500	4
	0.73-1.1	<b>S 502 K0.73 - 1.1</b>	GHS5020001R0217	<b>303311</b>			0.500	4
	1-1.5	<b>S 502 K1 - 1.5</b>	GHS5020001R0257	<b>303328</b>			0.500	4
	1.4-2.1	<b>S 502 K1.4 - 2.1</b>	GHS5020001R0287	<b>303335</b>			0.500	4
	2-3	<b>S 502 K2-3</b>	GHS5020001R0317	<b>303342</b>			0.500	4
	2.8-4.2	<b>S 502 K2.8 - 4.2</b>	GHS5020001R0347	<b>303359</b>			0.500	4
	3.8-5.8	<b>S 502 K3.8 - 5.8</b>	GHS5020001R0377	<b>303366</b>			0.500	4
	5.3-8	<b>S 502 K5.3 - 8</b>	GHS5020001R0407	<b>303373</b>			0.500	4
	7.3-11	<b>S 502 K7.3 - 11</b>	GHS5020001R0437	<b>303380</b>			0.500	4
	10-15	<b>S 502 K10 - 15</b>	GHS5020001R0467	<b>303397</b>			0.500	4
	14-20	<b>S 502 K14 - 20</b>	GHS5020001R0487	<b>303403</b>			0.500	4
	18-26	<b>S 502 K18 - 26</b>	GHS5020001R0517	<b>303410</b>			0.500	4
	23-32	<b>S 502 K23 - 32</b>	GHS5020001R0537	<b>303427</b>			0.500	4
	29-37	<b>S 502 K29 - 37</b>	GHS5020001R0547	<b>303434</b>			0.500	4
	34-41	<b>S 502 K34 - 41</b>	GHS5020001R0557	<b>303441</b>			0.500	4
38-45	<b>S 502 K38 - 45</b>	GHS5020001R0557	<b>303458</b>			0.500	4	

2

**K**

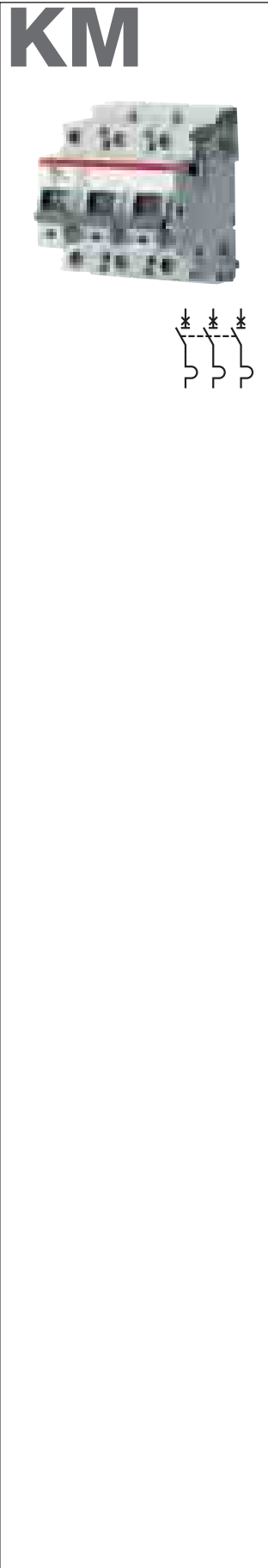


**2**

3	0.1-0.15	<b>S 503 K0.1 - 0.15</b>	GHS5030001R0057	<b>303502</b>	0.750	2
	0.14-0.21	<b>S 503 K0.14 - 0.21</b>	GHS5030001R0097	<b>303519</b>	0.750	2
	0.2-0.3	<b>S 503 K0.2 - 0.3</b>	GHS5030001R0117	<b>303526</b>	0.750	2
	0.28-0.42	<b>S 503 K0.28 - 0.42</b>	GHS5030001R0137	<b>303533</b>	0.750	2
	0.38-0.58	<b>S 503 K0.38 - 0.58</b>	GHS5030001R0177	<b>303540</b>	0.750	2
	0.53-0.8	<b>S 503 K0.53 - 0.8</b>	GHS5030001R0197	<b>303557</b>	0.750	2
	0.73-1.1	<b>S 503 K0.73 - 1.1</b>	GHS5030001R0217	<b>303564</b>	0.750	2
	1-1.5	<b>S 503 K1 - 1.5</b>	GHS5030001R0257	<b>303571</b>	0.750	2
	1.4-2.1	<b>S 503 K1.4 - 2.1</b>	GHS5030001R0287	<b>303588</b>	0.750	2
	2-3	<b>S 503 K2-3</b>	GHS5030001R0317	<b>303595</b>	0.750	2
	2.8-4.2	<b>S 503 K2.8 - 4.2</b>	GHS5030001R0347	<b>303601</b>	0.750	2
	3.8-5.8	<b>S 503 K3.8 - 5.8</b>	GHS5030001R0377	<b>303618</b>	0.750	2
	5.3-8	<b>S 503 K5.3 - 8</b>	GHS5030001R0407	<b>303625</b>	0.750	2
	7.3-11	<b>S 503 K7.3 - 11</b>	GHS5030001R0437	<b>303632</b>	0.750	2
	10-15	<b>S 503 K10 - 15</b>	GHS5030001R0467	<b>303649</b>	0.750	2
	14-20	<b>S 503 K14 - 20</b>	GHS5030001R0487	<b>303656</b>	0.750	2
	18-26	<b>S 503 K18 - 26</b>	GHS5030001R0517	<b>303663</b>	0.750	2
	23-32	<b>S 503 K23 - 32</b>	GHS5030001R0537	<b>303670</b>	0.750	2
	29-37	<b>S 503 K29 - 37</b>	GHS5030001R0547	<b>303687</b>	0.750	2
	34-41	<b>S 503 K34 - 41</b>	GHS5030001R0557	<b>303694</b>	0.750	2
	38-45	<b>S 503 K38 - 45</b>	GHS5030001R0557	<b>303700</b>	0.750	2

Note: from 4 to 6 poles available upon request

**30000**



**S 500 KM characteristic**

Function: protection and control of the circuits against overloads and short-circuits when an high breaking capacity is required; only magnetic version dedicated to protect motors; very useful when it is needed selectivity vs an MCCB or back-up vs other MCBs wired downstream; version dedicated to application in direct current circuits.

**Applications: commercial and industrial.**

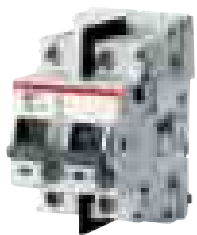
**Standard: IEC/EN 60947-2**

**Icn=30 kA**

Number of poles	Rated current In A	Order details Type code	Order code	Bbn 7612270 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
<b>3</b>	1.6	<b>S 503 KM 1.6</b>	GHS5030001R9019	<b>303809</b>			0.750	2
	2.5	<b>S 503 KM 2.5</b>	GHS5030001R9029	<b>303816</b>			0.750	2
	4	<b>S 503 KM 4</b>	GHS5030001R9049	<b>303823</b>			0.750	2
	6	<b>S 503 KM 6</b>	GHS5030001R9069	<b>303830</b>			0.750	2
	9	<b>S 503 KM 9</b>	GHS5030001R9099	<b>303847</b>			0.750	2
	20	<b>S 503 KM 20</b>	GHS5030001R9209	<b>303854</b>			0.750	2
	32	<b>S 503 KM 32</b>	GHS5030001R9329	<b>303861</b>			0.750	2
	52	<b>S 503 KM 52</b>	GHS5030001R9529	<b>303878</b>			0.750	2
	63	<b>S 503 KM 63</b>	GHS5030001R9639	<b>303885</b>			0.750	2
	75	<b>S 503 KM 75</b>	GHS5030001R9759	<b>303892</b>			0.750	2

**B**

2



**S 500 UC series B characteristic**

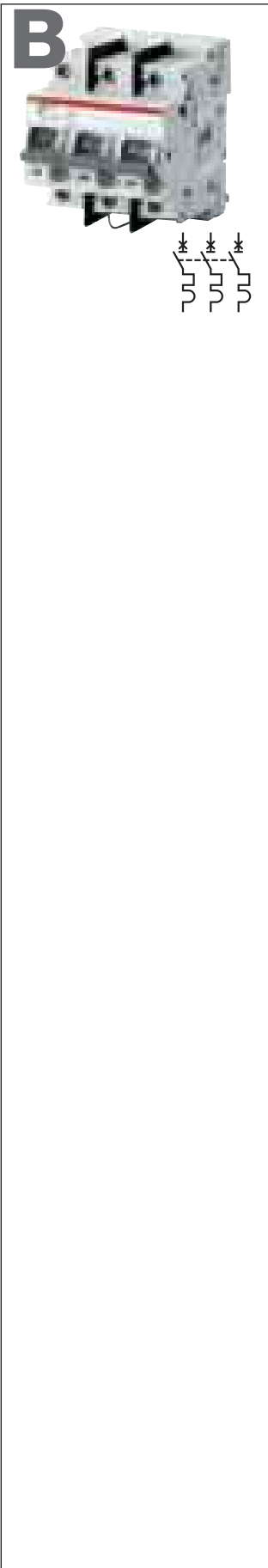
Function: protection and control of the circuits against overloads and short-circuits when an high breaking capacity is required; protection for people and big length cables in TN and IT systems; very useful when it is needed selectivity vs an MCCB or back-up vs other MCBs wired downstream; version dedicated to application in direct current circuits.

Applications: commercial and industrial.

Standard: IEC/EN 60947-2

Icn=30 kA

Number of poles	Rated current In A	Order details		Bbn 7612270 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1	6	<b>S 501 UC B6</b>	GHS5010164R0065	<b>301508</b>			0.250	8
	10	<b>S 501 UC B10</b>	GHS5010164R0105	<b>301515</b>			0.250	8
	13	<b>S 501 UC B13</b>	GHS5010164R0135	<b>301522</b>			0.250	8
	16	<b>S 501 UC B16</b>	GHS5010164R0165	<b>301539</b>			0.250	8
	20	<b>S 501 UC B20</b>	GHS5010164R0205	<b>301546</b>			0.250	8
	25	<b>S 501 UC B25</b>	GHS5010164R0255	<b>301553</b>			0.250	8
	32	<b>S 501 UC B32</b>	GHS5010164R0325	<b>301560</b>			0.250	8
	40	<b>S 501 UC B40</b>	GHS5010164R0405	<b>301577</b>			0.250	8
	50	<b>S 501 UC B50</b>	GHS5010164R0505	<b>301584</b>			0.250	8
	63	<b>S 501 UC B63</b>	GHS5010164R0635	<b>301591</b>			0.250	8
2	6	<b>S 502 UC B6</b>	GHS5020164R0065	<b>301607</b>			0.500	4
	10	<b>S 502 UC B10</b>	GHS5020164R0105	<b>301614</b>			0.500	4
	13	<b>S 502 UC B13</b>	GHS5020164R0135	<b>301621</b>			0.500	4
	16	<b>S 502 UC B16</b>	GHS5020164R0165	<b>301638</b>			0.500	4
	20	<b>S 502 UC B20</b>	GHS5020164R0205	<b>301645</b>			0.500	4
	25	<b>S 502 UC B25</b>	GHS5020164R0255	<b>301652</b>			0.500	4
	32	<b>S 502 UC B32</b>	GHS5020164R0325	<b>301669</b>			0.500	4
	40	<b>S 502 UC B40</b>	GHS5020164R0405	<b>301676</b>			0.500	4
	50	<b>S 502 UC B50</b>	GHS5020164R0505	<b>301683</b>			0.500	4
	63	<b>S 502 UC B63</b>	GHS5020164R0635	<b>301690</b>			0.500	4



<b>3</b>	6	<b>S 503 UC B6</b>	GHS5030164R0065	<b>301706</b>	0.750	2
	10	<b>S 503 UC B10</b>	GHS5030164R0105	<b>301713</b>	0.750	2
	13	<b>S 503 UC B13</b>	GHS5030164R0135	<b>301720</b>	0.750	2
	16	<b>S 503 UC B16</b>	GHS5030164R0165	<b>301737</b>	0.750	2
	20	<b>S 503 UC B20</b>	GHS5030164R0205	<b>301744</b>	0.750	2
	25	<b>S 503 UC B25</b>	GHS5030164R0255	<b>301751</b>	0.750	2
	32	<b>S 503 UC B32</b>	GHS5030164R0325	<b>301768</b>	0.750	2
	40	<b>S 503 UC B40</b>	GHS5030164R0405	<b>301775</b>	0.750	2
	50	<b>S 503 UC B50</b>	GHS5030164R0505	<b>301782</b>	0.750	2
	63	<b>S 503 UC B63</b>	GHS5030164R0635	<b>301799</b>	0.750	2
<b>4</b>	6	<b>S 504 UC B6</b>	GHS5040164R0065	<b>301805</b>	1.000	2
	10	<b>S 504 UC B10</b>	GHS5040164R0105	<b>301812</b>	1.000	2
	13	<b>S 504 UC B13</b>	GHS5040164R0135	<b>301829</b>	1.000	2
	16	<b>S 504 UC B16</b>	GHS5040164R0165	<b>301836</b>	1.000	2
	20	<b>S 504 UC B20</b>	GHS5040164R0205	<b>301843</b>	1.000	2
	25	<b>S 504 UC B25</b>	GHS5040164R0255	<b>301850</b>	1.000	2
	32	<b>S 504 UC B32</b>	GHS5040164R0325	<b>301867</b>	1.000	2
	40	<b>S 504 UC B40</b>	GHS5040164R0405	<b>301874</b>	1.000	2
	50	<b>S 504 UC B50</b>	GHS5040164R0505	<b>301881</b>	1.000	2
	63	<b>S 504 UC B63</b>	GHS5040164R0635	<b>301898</b>	1.000	2



K

2

### S 500 UC series K (power) characteristic

Function: protection and control of the circuits like motors, transformer and auxiliary circuits, against overloads and short-circuits when an high breaking capacity is required; very useful when it is needed selectivity vs an MCCB or back-up vs other MCBs wired downstream; version with adjustable thermal release, dedicated to protect motors; version dedicated to application in direct current circuits.

Advantages: No nuisance tripping in the case of functional peak currents up to  $8 \times I_n$ , depending on the series; through its highly sensitive thermostatic bimetal trip, the K-type characteristic offers protection to damageable elements in the overcurrent range; it also provides the best protection to cables and lines.

Applications: commercial and industrial.

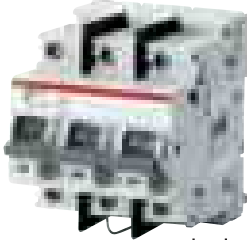
Standard: IEC/EN 60947-2, VDE 0660 Part 101

$I_{cn}=30$  kA



Number of poles	Rated current In A	Order details		Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code	7612270 EAN				
1	0.1-0.15	<b>S 501 UC-K0.1 - 0.15</b>	GHS5010164R0057	<b>302000</b>			0.250	8
	0.14-0.21	<b>S 501 UC-K0.14 - 0.21</b>	GHS5010164R0097	<b>302017</b>			0.250	8
	0.2-0.3	<b>S 501 UC-K0.2 - 0.3</b>	GHS5010164R0117	<b>302024</b>			0.250	8
	0.28-0.42	<b>S 501 UC-K0.28 - 0.42</b>	GHS5010164R0137	<b>302031</b>			0.250	8
	0.38-0.58	<b>S 501 UC-K0.38 - 0.58</b>	GHS5010164R0177	<b>302048</b>			0.250	8
	0.53-0.8	<b>S 501 UC-K0.53 - 0.8</b>	GHS5010164R0197	<b>302055</b>			0.250	8
	0.73-1.1	<b>S 501 UC-K0.73 - 1.1</b>	GHS5010164R0217	<b>302062</b>			0.250	8
	1-1.5	<b>S 501 UC-K1 - 1.5</b>	GHS5010164R0257	<b>302079</b>			0.250	8
	1.4-2.1	<b>S 501 UC-K1.4 - 2.1</b>	GHS5010164R0287	<b>302086</b>			0.250	8
	2-3	<b>S 501 UC-K2-3</b>	GHS5010164R0317	<b>302093</b>			0.250	8
	2.8-4.2	<b>S 501 UC-K2.8 - 4.2</b>	GHS5010164R0347	<b>302109</b>			0.250	8
	3.8-5.8	<b>S 501 UC-K3.8 - 5.8</b>	GHS5010164R0377	<b>302116</b>			0.250	8
	5.3-8	<b>S 501 UC-K5.3 - 8</b>	GHS5010164R0407	<b>302123</b>			0.250	8
	7.3-11	<b>S 501 UC-K7.3 - 11</b>	GHS5010164R0437	<b>302130</b>			0.250	8
	10-15	<b>S 501 UC-K10 - 15</b>	GHS5010164R0467	<b>302147</b>			0.250	8
	14-20	<b>S 501 UC-K14 - 20</b>	GHS5010164R0487	<b>302154</b>			0.250	8
	18-26	<b>S 501 UC-K18 - 26</b>	GHS5010164R0517	<b>302161</b>			0.250	8
	23-32	<b>S 501 UC-K23 - 32</b>	GHS5010164R0537	<b>302178</b>			0.250	8
	29-37	<b>S 501 UC-K29 - 37</b>	GHS5010164R0547	<b>302185</b>			0.250	8
	34-41	<b>S 501 UC-K34 - 41</b>	GHS5010164R0557	<b>302192</b>			0.250	8
38-45	<b>S 501 UC-K38 - 45</b>	GHS5010164R0557	<b>302208</b>			0.250	8	
2	0.1-0.15	<b>S 502 UC-K0.1 - 0.15</b>	GHS5020164R0057	<b>302253</b>			0.500	4
	0.14-0.21	<b>S 502 UC-K0.14 - 0.21</b>	GHS5020164R0097	<b>302260</b>			0.500	4
	0.2-0.3	<b>S 502 UC-K0.2 - 0.3</b>	GHS5020164R0117	<b>302277</b>			0.500	4
	0.28-0.42	<b>S 502 UC-K0.28 - 0.42</b>	GHS5020164R0137	<b>302284</b>			0.500	4
	0.38-0.58	<b>S 502 UC-K0.38 - 0.58</b>	GHS5020164R0177	<b>302291</b>			0.500	4
	0.53-0.8	<b>S 502 UC-K0.53 - 0.8</b>	GHS5020164R0197	<b>302307</b>			0.500	4
	0.73-1.1	<b>S 502 UC-K0.73 - 1.1</b>	GHS5020164R0217	<b>302314</b>			0.500	4
	1-1.5	<b>S 502 UC-K1 - 1.5</b>	GHS5020164R0257	<b>302321</b>			0.500	4
	1.4-2.1	<b>S 502 UC-K1.4 - 2.1</b>	GHS5020164R0287	<b>302338</b>			0.500	4
	2-3	<b>S 502 UC-K2-3</b>	GHS5020164R0317	<b>302345</b>			0.500	4
	2.8-4.2	<b>S 502 UC-K2.8 - 4.2</b>	GHS5020164R0347	<b>302352</b>			0.500	4
	3.8-5.8	<b>S 502 UC-K3.8 - 5.8</b>	GHS5020164R0377	<b>302369</b>			0.500	4
	5.3-8	<b>S 502 UC-K5.3 - 8</b>	GHS5020164R0407	<b>302376</b>			0.500	4
	7.3-11	<b>S 502 UC-K7.3 - 11</b>	GHS5020164R0437	<b>302383</b>			0.500	4
	10-15	<b>S 502 UC-K10 - 15</b>	GHS5020164R0467	<b>302390</b>			0.500	4
	14-20	<b>S 502 UC-K14 - 20</b>	GHS5020164R0487	<b>302406</b>			0.500	4
	18-26	<b>S 502 UC-K18 - 26</b>	GHS5020164R0517	<b>302413</b>			0.500	4
	23-32	<b>S 502 UC-K23 - 32</b>	GHS5020164R0537	<b>302420</b>			0.500	4
	29-37	<b>S 502 UC-K29 - 37</b>	GHS5020164R0547	<b>302437</b>			0.500	4
	34-41	<b>S 502 UC-K34 - 41</b>	GHS5020164R0557	<b>302444</b>			0.500	4
38-45	<b>S 502 UC-K38 - 45</b>	GHS5020164R0557	<b>302451</b>			0.500	4	

**K**

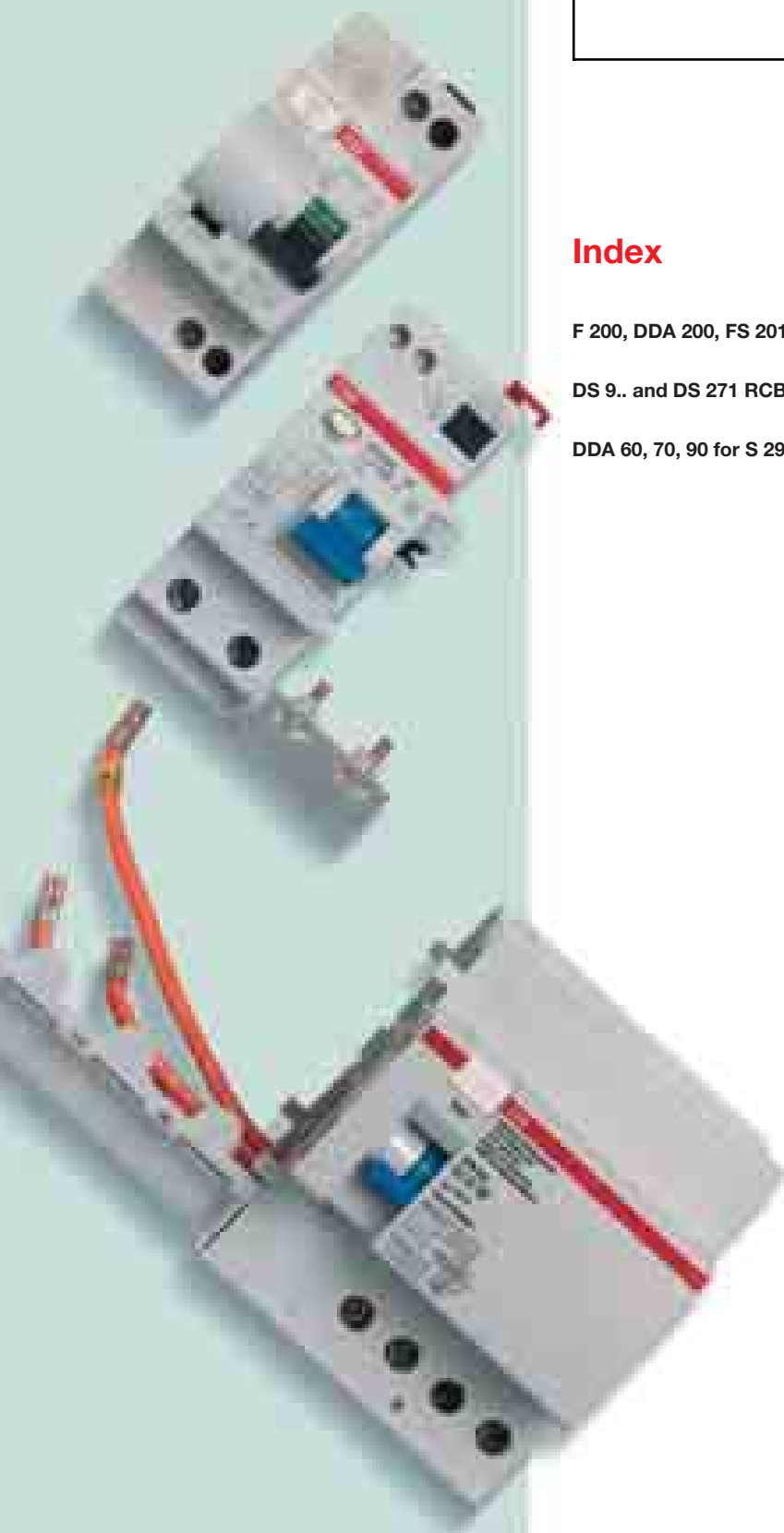


<b>3</b>	0.1-0.15	<b>S 503 UC-K0.1 - 0.15</b>	GHS5030164R0057	<b>302505</b>	0.750	2
	0.14-0.21	<b>S 503 UC-K0.14 - 0.21</b>	GHS5030164R0097	<b>302512</b>	0.750	2
	0.2-0.3	<b>S 503 UC-K0.2 - 0.3</b>	GHS5030164R0117	<b>302529</b>	0.750	2
	0.28-0.42	<b>S 503 UC-K0.28 - 0.42</b>	GHS5030164R0137	<b>302536</b>	0.750	2
	0.38-0.58	<b>S 503 UC-K0.38 - 0.58</b>	GHS5030164R0177	<b>302543</b>	0.750	2
	0.53-0.8	<b>S 503 UC-K0.53 - 0.8</b>	GHS5030164R0197	<b>302550</b>	0.750	2
	0.73-1.1	<b>S 503 UC-K0.73 - 1.1</b>	GHS5030164R0217	<b>302567</b>	0.750	2
	1-1.5	<b>S 503 UC-K1 - 1.5</b>	GHS5030164R0257	<b>302574</b>	0.750	2
	1.4-2.1	<b>S 503 UC-K1.4 - 2.1</b>	GHS5030164R0287	<b>302581</b>	0.750	2
	2-3	<b>S 503 UC-K2-3</b>	GHS5030164R0317	<b>302598</b>	0.750	2
	2.8-4.2	<b>S 503 UC-K2.8 - 4.2</b>	GHS5030164R0347	<b>302604</b>	0.750	2
	3.8-5.8	<b>S 503 UC-K3.8 - 5.8</b>	GHS5030164R0377	<b>302611</b>	0.750	2
	5.3-8	<b>S 503 UC-K5.3 - 8</b>	GHS5030164R0407	<b>302628</b>	0.750	2
	7.3-11	<b>S 503 UC-K7.3 - 11</b>	GHS5030164R0437	<b>302635</b>	0.750	2
	10-15	<b>S 503 UC-K10 - 15</b>	GHS5030164R0467	<b>302642</b>	0.750	2
	14-20	<b>S 503 UC-K14 - 20</b>	GHS5030164R0487	<b>302659</b>	0.750	2
	18-26	<b>S 503 UC-K18 - 26</b>	GHS5030164R0517	<b>302666</b>	0.750	2
	23-32	<b>S 503 UC-K23 - 32</b>	GHS5030164R0537	<b>302673</b>	0.750	2
	29-37	<b>S 503 UC-K29 - 37</b>	GHS5030164R0547	<b>302680</b>	0.750	2
	34-41	<b>S 503 UC-K34 - 41</b>	GHS5030164R0557	<b>302697</b>	0.750	2
	38-45	<b>S 503 UC-K38 - 45</b>	GHS5030164R0557	<b>302703</b>	0.750	2

Note: from 4 to 6 poles available upon request

**2**





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**RCDs** assure a protection to people and installations against fault current to earth. They are divided into three families:

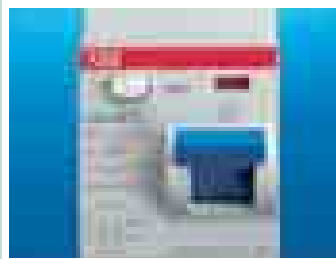
- **RCCBs**, which are sensitive only to earth fault current (therefore they have to be connected in series with a MCB or a fuse to protect them against overcurrents and short-circuits)
- **RCD-blocks**, which are devices to be assembled on a MCB with lower or equal rated current to provide protection against both earth-fault currents and overload or short-circuits
- **RCBOs**, which combines in a single device protection against both earth-fault currents and overloads or short-circuits.

New RCDs System pro *M* compact range presents a wide offer for all the three families, respectively **F 200**, **DDA 200** and **DS 200** series.

A large offer for standard instantaneous and selective AC and A types is completed with some configurations for special applications, like AP-R type against perturbations or AE type for emergency stop.

All sizes up to 63 A with all the sensitivity thresholds up to 1 A are offered in all the possible pole configurations.

ABB RCDs obtained a lot of marks and approvals and offer the same "plus" advantages of the other System pro *M* compact devices.





## Index

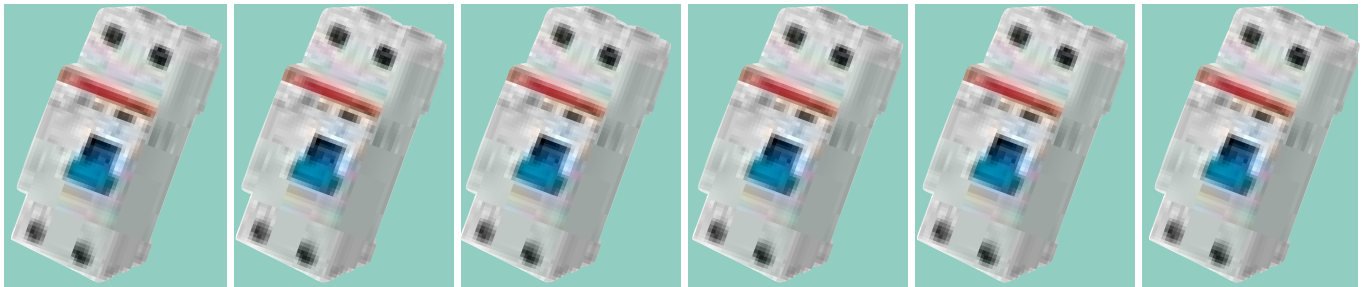
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**3**

**TECHNICAL FEATURES**

	Standards			
<b>Electrical features</b>	Type (wave form of the earth leakage sensed)			
	Poles			
	Rated current $I_n$		A	
	Rated voltage $U_e$	IEC	V	
		UL/CSA	V	
	Insulation voltage $U_i$		V	
	Max. operating voltage of circuit test	IEC	V	
		UL/CSA	V	
	Min. operating voltage of circuit test		V	
	Rated frequency		Hz	
	Rated conditional short-circuit current $I_{nc}=I_{\Delta c}$	SCPD - fuse gL 100 A	kA	
	Rated residual breaking capacity $I_{\Delta m}=I_m$		kA	
	Rated impulse withstand voltage (1.2/50) $U_{imp}$		kV	
	Dielectric test voltage at ind. freq. for 1 min.		kV	
	Overvoltage category			
Surge current resistance acc. to VDE 0432 Part 2 (wave 8/20)		A		
<b>Mechanical features</b>	Toggle			
	Contact position indicator (CPI)			
	Electrical life			
	Mechanical life			
	Protection degree	housing terminals		
	Tropicalization acc. to IEC/EN 60068-2	humid heat constant climatic conditions variable climatic conditions	°C/RH °C/RH °C/RH	
	Ambient temperature (with daily average $\leq +35$ °C)	IEC UL/CSA	°C °C	
	Storage temperature		°C	
	<b>Installation</b>	Terminal type		
		Terminal size top/bottom for cable	IEC UL/CSA	mm <sup>2</sup> AWG
Terminal size top/bottom for busbar		IEC UL/CSA	mm <sup>2</sup> AWG	
Tightening torque		IEC UL/CSA	N*m in-lbs.	
Tool				
Mounting				
Connection				
Withdrawal from busbar				
<b>Dimensions and weight</b>		Dimensions (H x D x W)	2P 4P	mm mm
		Weight	2P 4P	g g
	<b>Combination with auxiliary elements</b>	Combinable with:	auxiliary contact signal contact/auxiliary switch shunt trip undervoltage release	

① Ground-fault sensing and relaying equipment-component (up to 63 A)



**3**

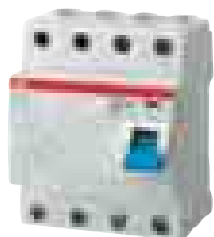
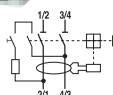
F200 AC	F200 A	F200 AC AP-R	F200 A AP-R	F200 AC S	F200 A S
		IEC/EN 61008, UL 1053 ①			
AC	A	AC	A	AC	A
16, 25, 40, 63, 80, 100, 125		2P, 4P (for 125 A only 4P)	25, 40, 63, 80, 100, 125	40, 63	40, 63, 80, 100, 125
		230/400 - 240/415 480Y/277 (up to 63 A) 500			
		254 (440 for 125 A); 440 for F 200 left neutral 277 (up to 63 A); 480 for F 200 left neutral 110 (185 for 125 A) 50...60			
		10 (for 125 A fuse is gL 125 A) 1 (1.25 for 125 A) 6 2.5			
		III, disconnector abilities			
250		3000			5000
		blue sealable in ON-OFF position yes			
		10000 (2000 for 125 A) 20000 (5000 for 125 A)			
		IP4X IP2X			
		28 cycles with 55/95...100 23/83 - 40/93 - 55/20 25/95 - 40/95			
		-25...+55 (-25...+40 for 125 A) -35...+70 (up to 63 A) -40...+70			
		failsafe bi-directional cylinder-lift terminal at top and bottom (shock protected) (cage for In > 63 A) 25/25 (35/35 single slot terminal for In > 63 A) 18-4 (up to 63 A) 10/10 (not for In > 63 A) 18-8 (up to 63 A) 2.8 (4.8 for In > 63 A; 3 for In = 125 A) 25 (up to 63 A) Nr. 2 Pozidriv			
		on DIN rail EN 60715 (35 mm) by means of fast clip device from top and bottom it is possible without using any tools only from the bottom (not for 125 A)			
		85 x 69 x 35 85 x 69 x 70 (85 x 69.5 x 72 for 125 A) 200 350 (380 for In = 80 and 100 A and 460 for In = 125A)			
		yes (no for 125 A) yes no yes (no for 125 A)			



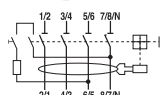
# AC



2CSF40050RF001



2CSF40051FD001



## F 200 AC type

Function: protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts; command and isolation of resistive and inductive circuits.

Application: residential, commercial, industrial.

Standard: IEC/EN 61008

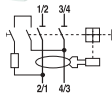
Marking: according to EN 61008

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.	
2	10	16	F202 AC-16/0.01	2CSF202001R0160	779902			0.225	1/6	
		25	F202 AC-25/0.03	2CSF202001R1250	780007			0.225	1/6	
		40	F202 AC-40/0.03	2CSF202001R1400	780106			0.225	1/6	
		63	F202 AC-63/0.03	2CSF202001R1630	780205			0.225	1/6	
		80	F202 AC-80/0.03	2CSF202001R1800	914204			0.225	1/6	
	30	100	F202 AC-100/0.03	2CSF202001R1900	914303			0.225	1/6	
		100	25	F202 AC-25/0.1	2CSF202001R2250	780304			0.225	1/6
			40	F202 AC-40/0.1	2CSF202001R2400	780403			0.225	1/6
			63	F202 AC-63/0.1	2CSF202001R2630	780502			0.225	1/6
			80	F202 AC-80/0.1	2CSF202001R2800	914402			0.225	1/6
	300	100	F202 AC-100/0.1	2CSF202001R2900	914501			0.225	1/6	
		300	25	F202 AC-25/0.3	2CSF202001R3250	780601			0.225	1/6
			40	F202 AC-40/0.3	2CSF202001R3400	780700			0.225	1/6
			63	F202 AC-63/0.3	2CSF202001R3630	780809			0.225	1/6
80			F202 AC-80/0.3	2CSF202001R3800	914600			0.225	1/6	
500	100	F202 AC-100/0.3	2CSF202001R3900	914709			0.225	1/6		
	500	25	F202 AC-25/0.5	2CSF202001R4250	780908			0.225	1/6	
		40	F202 AC-40/0.5	2CSF202001R4400	781004			0.225	1/6	
		63	F202 AC-63/0.5	2CSF202001R4630	781103			0.225	1/6	
		80	F202 AC-80/0.5	2CSF202001R4800	914808			0.225	1/6	
4	30	100	F202 AC-100/0.5	2CSF202001R4900	914907			0.225	1/6	
		30	25	F204 AC-25/0.03	2CSF204001R1250	781202			0.375	1/3
			40	F204 AC-40/0.03	2CSF204001R1400	781301			0.375	1/3
			63	F204 AC-63/0.03	2CSF204001R1630	781400			0.375	1/3
			80	F204 AC-80/0.03	2CSF204001R1800	916604			0.405	1/3
	100	100	F204 AC-100/0.03	2CSF204001R1900	916703			0.405	1/3	
		100	125	F204 AC-125/0.03	2CSF204001R1950	941507			0.500	1/3
			25	F204 AC-25/0.1	2CSF204001R2250	781509			0.375	1/3
			40	F204 AC-40/0.1	2CSF204001R2400	781608			0.375	1/3
			63	F204 AC-63/0.1	2CSF204001R2630	781707			0.375	1/3
	300	80	F204 AC-80/0.1	2CSF204001R2800	916802			0.405	1/3	
		100	F204 AC-100/0.1	2CSF204001R2900	916901			0.405	1/3	
		125	F204 AC-125/0.1	2CSF204001R2950	941606			0.500	1/3	
		300	25	F204 AC-25/0.3	2CSF204001R3250	781806			0.375	1/3
			40	F204 AC-40/0.3	2CSF204001R3400	781905			0.375	1/3
	63		F204 AC-63/0.3	2CSF204001R3630	782001			0.375	1/3	
	80		F204 AC-80/0.3	2CSF204001R3800	917007			0.405	1/3	
	500	100	F204 AC-100/0.3	2CSF204001R3900	917106			0.405	1/3	
		125	F204 AC-125/0.3	2CSF204001R3950	941705			0.500	1/3	
		500	25	F204 AC-25/0.5	2CSF204001R4250	782100			0.375	1/3
			40	F204 AC-40/0.5	2CSF204001R4400	782209			0.375	1/3
			63	F204 AC-63/0.5	2CSF204001R4630	782308			0.375	1/3
	80		F204 AC-80/0.5	2CSF204001R4800	917205			0.405	1/3	
	100	100	F204 AC-100/0.5	2CSF204001R4900	917304			0.405	1/3	
		125	F204 AC-125/0.5	2CSF204001R4950	941804			0.500	1/3	

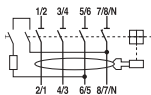
**A**



2CSF40050R0001



2CSF40051F0001



**F 200 A type**

Function: protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts; command and isolation of resistive and inductive circuits.

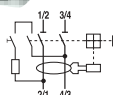
Application: residential, commercial, industrial.

Standard: IEC/EN 61008

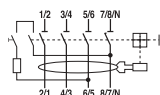
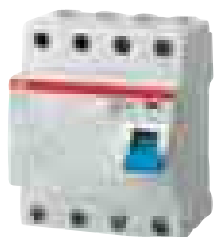
Marking: according to EN 61008

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.	
			Type code	Order code						
2	10	16	<b>F202 A-16/0.01</b>	2CSF202101R0160	<b>782407</b>			0.225	1/6	
		30	25	<b>F202 A-25/0.03</b>	2CSF202101R1250	<b>782506</b>		0.225	1/6	
			40	<b>F202 A-40/0.03</b>	2CSF202101R1400	<b>782605</b>		0.225	1/6	
			63	<b>F202 A-63/0.03</b>	2CSF202101R1630	<b>782704</b>		0.225	1/6	
			80	<b>F202 A-80/0.03</b>	2CSF202101R1800	<b>915201</b>		0.225	1/6	
			100	<b>F202 A-100/0.03</b>	2CSF202101R1900	<b>915300</b>		0.225	1/6	
	100	25	40	<b>F202 A-40/0.1</b>	2CSF202101R2400	<b>787006</b>		0.225	1/6	
			63	<b>F202 A-63/0.1</b>	2CSF202101R2630	<b>787105</b>		0.225	1/6	
			80	<b>F202 A-80/0.1</b>	2CSF202101R2800	<b>915409</b>		0.225	1/6	
			100	<b>F202 A-100/0.1</b>	2CSF202101R2900	<b>915508</b>		0.225	1/6	
			300	40	<b>F202 A-40/0.3</b>	2CSF202101R3400	<b>782902</b>		0.225	1/6
				63	<b>F202 A-63/0.3</b>	2CSF202101R3630	<b>783008</b>		0.225	1/6
	80	<b>F202 A-80/0.3</b>		2CSF202101R3800	<b>915607</b>		0.225	1/6		
	100	<b>F202 A-100/0.3</b>		2CSF202101R3900	<b>915706</b>		0.225	1/6		
	500	25	40	<b>F202 A-40/0.5</b>	2CSF202101R4250	<b>783107</b>		0.225	1/6	
			63	<b>F202 A-63/0.5</b>	2CSF202101R4630	<b>783305</b>		0.225	1/6	
			80	<b>F202 A-80/0.5</b>	2CSF202101R4800	<b>915805</b>		0.225	1/6	
			100	<b>F202 A-100/0.5</b>	2CSF202101R4900	<b>915904</b>		0.225	1/6	
4			30	25	<b>F204 A-25/0.03</b>	2CSF204101R1250	<b>783404</b>		0.375	1/3
				40	<b>F204 A-40/0.03</b>	2CSF204101R1400	<b>783503</b>		0.375	1/3
	63	<b>F204 A-63/0.03</b>		2CSF204101R1630	<b>783602</b>		0.375	1/3		
	80	<b>F204 A-80/0.03</b>		2CSF204101R1800	<b>917809</b>		0.405	1/3		
	100	<b>F204 A-100/0.03</b>		2CSF204101R1900	<b>917908</b>		0.405	1/3		
	125	<b>F204 A-125/0.03</b>		2CSF204101R1950	<b>941903</b>		0.500	1/3		
	100	25	40	<b>F204 A-40/0.1</b>	2CSF204101R2250	<b>787204</b>		0.375	1/3	
			63	<b>F204 A-63/0.1</b>	2CSF204101R2630	<b>787402</b>		0.375	1/3	
			80	<b>F204 A-80/0.1</b>	2CSF204101R2800	<b>918004</b>		0.405	1/3	
			100	<b>F204 A-100/0.1</b>	2CSF204101R2900	<b>918103</b>		0.405	1/3	
			125	<b>F204 A-125/0.1</b>	2CSF204101R2950	<b>942009</b>		0.500	1/3	
			300	40	<b>F204 A-40/0.3</b>	2CSF204101R3400	<b>783800</b>		0.375	1/3
	63	<b>F204 A-63/0.3</b>		2CSF204101R3630	<b>783909</b>		0.375	1/3		
	80	<b>F204 A-80/0.3</b>		2CSF204101R3800	<b>918202</b>		0.405	1/3		
	100	<b>F204 A-100/0.3</b>		2CSF204101R3900	<b>918301</b>		0.405	1/3		
	125	<b>F204 A-125/0.3</b>		2CSF204101R3950	<b>942108</b>		0.500	1/3		
	500	25		40	<b>F204 A-40/0.5</b>	2CSF204101R4400	<b>784104</b>		0.375	1/3
			63	<b>F204 A-63/0.5</b>	2CSF204101R4630	<b>784203</b>		0.375	1/3	
80			<b>F204 A-80/0.5</b>	2CSF204101R4800	<b>918400</b>		0.405	1/3		
100			<b>F204 A-100/0.5</b>	2CSF204101R4900	<b>918509</b>		0.405	1/3		
125			<b>F204 A-125/0.5</b>	2CSF204101R4950	<b>942207</b>		0.500	1/3		

# AC



2CSGF0050R0001



2CSGF0051R0001

## F 200 AC type (IEC)

Function: protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts; command and isolation of resistive and inductive circuits.

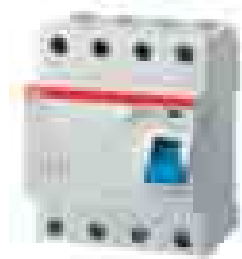
Application: residential, commercial, industrial.

Standard: IEC/EN 61008

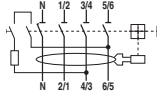
Marking: according to IEC 61008

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details		Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.	
			Type code	Order code	8012542					EAN
2	10	16	<b>F202 AC-16/0.01</b>	2CSF202005R0160	<b>814603</b>			0.225	1/6	
		25	<b>F202 AC-25/0.03</b>	2CSF202005R1250	<b>814702</b>			0.225	1/6	
		40	<b>F202 AC-40/0.03</b>	2CSF202005R1400	<b>814801</b>			0.225	1/6	
		63	<b>F202 AC-63/0.03</b>	2CSF202005R1630	<b>814900</b>			0.225	1/6	
		80	<b>F202 AC-80/0.03</b>	2CSF202005R1800	<b>935902</b>			0.225	1/6	
		100	<b>F202 AC-100/0.03</b>	2CSF202005R1900	<b>936008</b>			0.225	1/6	
	100	25	40	<b>F202 AC-25/0.1</b>	2CSF202005R2250	<b>815006</b>			0.225	1/6
			40	<b>F202 AC-40/0.1</b>	2CSF202005R2400	<b>815105</b>			0.225	1/6
			63	<b>F202 AC-63/0.1</b>	2CSF202005R2630	<b>815204</b>			0.225	1/6
			80	<b>F202 AC-80/0.1</b>	2CSF202005R2800	<b>936107</b>			0.225	1/6
			100	<b>F202 AC-100/0.1</b>	2CSF202005R2900	<b>936206</b>			0.225	1/6
			300	25	40	<b>F202 AC-25/0.3</b>	2CSF202005R3250	<b>815303</b>		
	40	<b>F202 AC-40/0.3</b>			2CSF202005R3400	<b>815402</b>			0.225	1/6
	63	<b>F202 AC-63/0.3</b>			2CSF202005R3630	<b>815501</b>			0.225	1/6
80	<b>F202 AC-80/0.3</b>	2CSF202005R3800			<b>936305</b>			0.225	1/6	
100	<b>F202 AC-100/0.3</b>	2CSF202005R3900			<b>936404</b>			0.225	1/6	
500	80	80	<b>F202 AC-80/0.5</b>	2CSF202005R4800	<b>936503</b>			0.225	1/6	
		100	<b>F202 AC-100/0.5</b>	2CSF202005R4900	<b>936602</b>			0.225	1/6	
4	30	25	<b>F204 AC-25/0.03</b>	2CSF204005R1250	<b>817109</b>			0.375	1/3	
		40	<b>F204 AC-40/0.03</b>	2CSF204005R1400	<b>817208</b>			0.375	1/3	
		63	<b>F204 AC-63/0.03</b>	2CSF204005R1630	<b>817307</b>			0.375	1/3	
		80	<b>F204 AC-80/0.03</b>	2CSF204005R1800	<b>936701</b>			0.405	1/3	
		100	<b>F204 AC-100/0.03</b>	2CSF204005R1900	<b>936800</b>			0.405	1/3	
		100	25	40	<b>F204 AC-25/0.1</b>	2CSF204005R2250	<b>817406</b>			0.375
	40			<b>F204 AC-40/0.1</b>	2CSF204005R2400	<b>817505</b>			0.375	1/3
	63			<b>F204 AC-63/0.1</b>	2CSF204005R2630	<b>817604</b>			0.375	1/3
	80			<b>F204 AC-80/0.1</b>	2CSF204005R2800	<b>936909</b>			0.405	1/3
	100			<b>F204 AC-100/0.1</b>	2CSF204005R2900	<b>937005</b>			0.405	1/3
	300	25	40	<b>F204 AC-25/0.3</b>	2CSF204005R3250	<b>817703</b>			0.375	1/3
			40	<b>F204 AC-40/0.3</b>	2CSF204005R3400	<b>817802</b>			0.375	1/3
			63	<b>F204 AC-63/0.3</b>	2CSF204005R3630	<b>817901</b>			0.375	1/3
			80	<b>F204 AC-80/0.3</b>	2CSF204005R3800	<b>937104</b>			0.405	1/3
			100	<b>F204 AC-100/0.3</b>	2CSF204005R3900	<b>937203</b>			0.405	1/3
	500	80	80	<b>F204 AC-80/0.5</b>	2CSF204005R4800	<b>937302</b>			0.405	1/3
			100	<b>F204 AC-100/0.5</b>	2CSF204005R4900	<b>937401</b>			0.405	1/3

# AC



2CSC40051F0001



## F 200 AC type with neutral pole on the left

Function: protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts; command and isolation of resistive and inductive circuits. Product helpful where for installation habits, for wiring with busbars or cables, for special needs neutral on the left is needed.

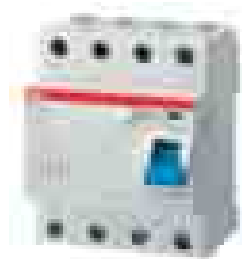
**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61008**

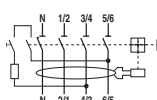
**Marking: according to EN 61008**

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current $I_n$ A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code	EAN				
4	30	25	<b>F204 AC-25/0.03</b>	2CSF204023R1250	<b>815907</b>			0.375	1/3
		40	<b>F204 AC-40/0.03</b>	2CSF204023R1400	<b>816003</b>			0.375	1/3
		63	<b>F204 AC-63/0.03</b>	2CSF204023R1630	<b>816102</b>			0.375	1/3
		80	<b>F204 AC-80/0.03</b>	2CSF204023R1800	<b>917403</b>			0.405	1/3
		100	<b>F204 AC-100/0.03</b>	2CSF204023R1900	<b>917502</b>			0.405	1/3
		125	<b>F204 AC-125/0.03</b>	2CSF204023R1950	<b>975106</b>			0.500	1/3
100	25	25	<b>F204 AC-25/0.1</b>	2CSF204023R2250	<b>816201</b>			0.375	1/3
		40	<b>F204 AC-40/0.1</b>	2CSF204023R2400	<b>816300</b>			0.375	1/3
		63	<b>F204 AC-63/0.1</b>	2CSF204023R2630	<b>816409</b>			0.375	1/3
300	25	25	<b>F204 AC-25/0.3</b>	2CSF204023R3250	<b>816508</b>			0.375	1/3
		40	<b>F204 AC-40/0.3</b>	2CSF204023R3400	<b>816607</b>			0.375	1/3
		63	<b>F204 AC-63/0.3</b>	2CSF204023R3630	<b>816706</b>			0.375	1/3
		80	<b>F204 AC-80/0.3</b>	2CSF204023R3800	<b>917601</b>			0.405	1/3
		100	<b>F204 AC-100/0.3</b>	2CSF204023R3900	<b>917700</b>			0.405	1/3
		125	<b>F204 AC-125/0.3</b>	2CSF204023R3950	<b>975304</b>			0.500	1/3
500	25	25	<b>F204 AC-25/0.5</b>	2CSF204023R4250	<b>816805</b>			0.375	1/3
		40	<b>F204 AC-40/0.5</b>	2CSF204023R4400	<b>816904</b>			0.375	1/3
		63	<b>F204 AC-63/0.5</b>	2CSF204023R4630	<b>817000</b>			0.375	1/3

# A



2CSC40051F0001



## F 200 A type with neutral pole on the left

Function: protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts; command and isolation of resistive and inductive circuits. Product helpful where for installation habits, for wiring with busbars or cables, for special needs neutral on the left is needed.

**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61008**

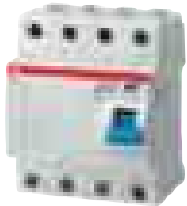
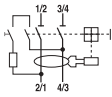
**Marking: according to EN 61008**

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current $I_n$ A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code	EAN				
4	30	25	<b>F204 A-25/0.03</b>	2CSF204123R1250	<b>820109</b>			0.375	1/3
		40	<b>F204 A-40/0.03</b>	2CSF204123R1400	<b>820208</b>			0.375	1/3
		63	<b>F204 A-63/0.03</b>	2CSF204123R1630	<b>820307</b>			0.375	1/3
		80	<b>F204 A-80/0.03</b>	2CSF204123R1800	<b>918608</b>			0.405	1/3
		100	<b>F204 A-100/0.03</b>	2CSF204123R1900	<b>918707</b>			0.405	1/3
		125	<b>F204 A-125/0.03</b>	2CSF204123R1950	<b>967705</b>			0.500	1/3
100	25	25	<b>F204 A-25/0.1</b>	2CSF204123R2250	<b>820406</b>			0.375	1/3
		40	<b>F204 A-40/0.1</b>	2CSF204123R2400	<b>820505</b>			0.375	1/3
		63	<b>F204 A-63/0.1</b>	2CSF204123R2630	<b>820604</b>			0.375	1/3
300	25	25	<b>F204 A-25/0.3</b>	2CSF204123R3250	<b>820703</b>			0.375	1/3
		40	<b>F204 A-40/0.3</b>	2CSF204123R3400	<b>820802</b>			0.375	1/3
		63	<b>F204 A-63/0.3</b>	2CSF204123R3630	<b>820901</b>			0.375	1/3
		80	<b>F204 A-80/0.3</b>	2CSF204123R3800	<b>918806</b>			0.405	1/3
		100	<b>F204 A-100/0.3</b>	2CSF204123R3900	<b>918905</b>			0.405	1/3
		125	<b>F204 A-125/0.3</b>	2CSF204123R3950	<b>967804</b>			0.500	1/3
500	25	25	<b>F204 A-25/0.5</b>	2CSF204123R4250	<b>821007</b>			0.375	1/3
		40	<b>F204 A-40/0.5</b>	2CSF204123R4400	<b>821106</b>			0.375	1/3
		63	<b>F204 A-63/0.5</b>	2CSF204123R4630	<b>821205</b>			0.375	1/3

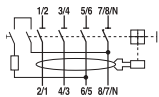
# AC



2CSC40050F0001



2CSC40051F0001



## F 200 AP-R, AC type

Function: protection against the effects of sinusoidal alternating earth fault currents, providing the best compromise between safety and continuity in the service thanks to the resistance to unwanted trippings; protection against indirect contacts and additional protection against direct ( $I_{\Delta n}=30$  mA) contacts; command and isolation of resistive and inductive circuits.

**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61008**

**Surge current resistance (wave 8/20)=3000 A**

**Marking: according to EN 61008**

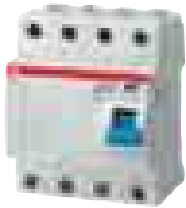
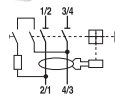
Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details		Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code	8012542				
2	30	25	F202 AC-25/0.03 AP-R	2CSF202301R1250	785705			0.225	1/6
		40	F202 AC-40/0.03 AP-R	2CSF202301R1400	823704			0.225	1/6
		63	F202 AC-63/0.03 AP-R	2CSF202301R1630	785804			0.225	1/6

4	30	25	F204 AC-25/0.03 AP-R	2CSF204301R1250	785903			0.375	1/3
		40	F204 AC-40/0.03 AP-R	2CSF204301R1400	823803			0.375	1/3
		63	F204 AC-63/0.03 AP-R	2CSF204301R1630	786009			0.375	1/3

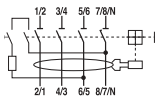
**A**



2CSF40050F0001



2CSF40051F0001



**F 200 AP-R, A type**

Function: protection against the effects of sinusoidal alternating and direct pulsating earth fault currents, providing the best compromise between safety and continuity in the service thanks to the resistance to unwanted trippings; protection against indirect contacts and additional protection against direct ( $I\Delta n=30$  mA) contacts; command and isolation of resistive and inductive circuits.

**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61008**

**Surge current resistance (wave 8/20)=3000 A**

**Marking: according to EN 61008**

Number of poles	Rated residual current $I\Delta n$ mA	Rated current $I_n$ A	Order details		Bbn	Price	Price	Weight	Pack
			Type code	Order code	8012542	1 piece	group	1 piece	unit
					EAN			kg	pc.
2	30	25	<b>F202 A-25/0.03 AP-R</b>	2CSF202401R1250	<b>785101</b>			0.225	1/6
		40	<b>F202 A-40/0.03 AP-R</b>	2CSF202401R1400	<b>785200</b>			0.225	1/6
		63	<b>F202 A-63/0.03 AP-R</b>	2CSF202401R1630	<b>785309</b>			0.225	1/6
		80	<b>F202 A-80/0.03 AP-R</b>	2CSF202401R1800	<b>916406</b>			0.225	1/6
		100	<b>F202 A-100/0.03 AP-R</b>	2CSF202401R1900	<b>916505</b>			0.225	1/6

4	30	25	<b>F204 A-25/0.03 AP-R</b>	2CSF204401R1250	<b>785408</b>			0.375	1/3
		40	<b>F204 A-40/0.03 AP-R</b>	2CSF204401R1400	<b>785507</b>			0.375	1/3
		63	<b>F204 A-63/0.03 AP-R</b>	2CSF204401R1630	<b>785606</b>			0.375	1/3
		80	<b>F204 A-80/0.03 AP-R</b>	2CSF204401R1800	<b>919407</b>			0.405	1/3
		100	<b>F204 A-100/0.03 AP-R</b>	2CSF204401R1900	<b>919506</b>			0.405	1/3
		125	<b>F204 A-125/0.03 AP-R</b>	2CSF204401R1950	<b>967903</b>			0.500	1/3

# AC

## F 200 AC selective type

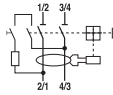
Function: protection against the effects of sinusoidal alternating earth fault currents with an intentional tripping delay, which permits to realize the selectivity with downstream instantaneous devices (for more information about selectivity see the technical guide); protection against indirect contacts; command and isolation of resistive and inductive circuits.

Application: commercial, industrial.

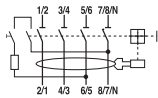
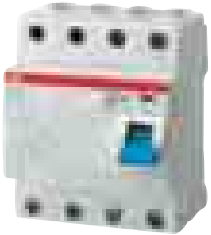
Standard: IEC/EN 61008

Surge current resistance (wave 8/20)=5000 A

Marking: according to EN 61008



2CSF40050F0001



2CSF40051F0001

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	100	40	F202 AC S-40/0.1	2CSF202901R2400	821304			0.225	1/6
		63	F202 AC S-63/0.1	2CSF202901R2630	821403			0.225	1/6
	300	40	F202 AC S-40/0.3	2CSF202901R3400	821502			0.225	1/6
		63	F202 AC S-63/0.3	2CSF202901R3630	821601			0.225	1/6
	500	40	F202 AC S-40/0.5	2CSF202901R4400	821700			0.225	1/6
		63	F202 AC S-63/0.5	2CSF202901R4630	821809			0.225	1/6
1000	40	F202 AC S-40/1	2CSF202901R5400	821908			0.225	1/6	
	63	F202 AC S-63/1	2CSF202901R5630	822004			0.225	1/6	

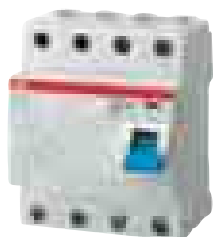
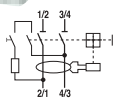
4	100	40	F204 AC S-40/0.1	2CSF204901R2400	822103			0.375	1/3
		63	F204 AC S-63/0.1	2CSF204901R2630	822202			0.375	1/3
	300	40	F204 AC S-40/0.3	2CSF204901R3400	822301			0.375	1/3
		63	F204 AC S-63/0.3	2CSF204901R3630	822400			0.375	1/3
	500	40	F204 AC S-40/0.5	2CSF204901R4400	822509			0.375	1/3
		63	F204 AC S-63/0.5	2CSF204901R4630	822608			0.375	1/3
1000	40	F204 AC S-40/1	2CSF204901R5400	822707			0.375	1/3	
	63	F204 AC S-63/1	2CSF204901R5630	822806			0.375	1/3	



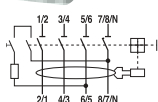
**A**



2CSF40050F0001



2CSF40051F0001



**F 200 A selective type**

Function: protection against the effects of sinusoidal alternating and direct pulsating earth fault currents with an intentional tripping delay, which permits to realize the selectivity with downstream instantaneous devices (for more information about selectivity see the technical guide); protection against indirect contacts; command and isolation of resistive and inductive circuits.

Application: commercial, industrial.

Standard: IEC/EN 61008

Surge current resistance (wave 8/20)=5000 A

Marking: according to EN 61008

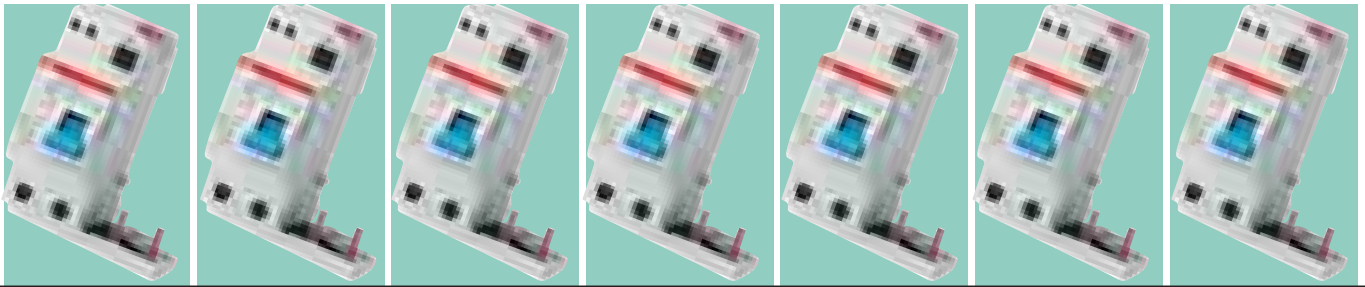
Number of poles	Rated residual current I $\Delta$ n mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code	EAN				
2	100	40	<b>F202 A S-40/0.1</b>	2CSF202201R2400	<b>822905</b>			0.225	1/6
		63	<b>F202 A S-63/0.1</b>	2CSF202201R2630	<b>823001</b>			0.225	1/6
		100	<b>F202 A S-100/0.1</b>	2CSF202201R2900	<b>916000</b>			0.225	1/6
	300	40	<b>F202 A S-40/0.3</b>	2CSF202201R3400	<b>784302</b>			0.225	1/6
		63	<b>F202 A S-63/0.3</b>	2CSF202201R3630	<b>784401</b>			0.225	1/6
		100	<b>F202 A S-100/0.3</b>	2CSF202201R3900	<b>916109</b>			0.225	1/6
	500	40	<b>F202 A S-40/0.5</b>	2CSF202201R4400	<b>784500</b>			0.225	1/6
		63	<b>F202 A S-63/0.5</b>	2CSF202201R4630	<b>784609</b>			0.225	1/6
		100	<b>F202 A S-100/0.5</b>	2CSF202201R4900	<b>916208</b>			0.225	1/6
	1000	40	<b>F202 A S-40/1</b>	2CSF202201R5400	<b>823100</b>			0.225	1/6
		63	<b>F202 A S-63/1</b>	2CSF202201R5630	<b>823209</b>			0.225	1/6
		100	<b>F202 A S-100/1</b>	2CSF202201R5900	<b>916307</b>			0.225	1/6
4	100	40	<b>F204 A S-40/0.1</b>	2CSF204201R2400	<b>823308</b>			0.375	1/3
		63	<b>F204 A S-63/0.1</b>	2CSF204201R2630	<b>823407</b>			0.375	1/3
		100	<b>F204 A S-100/0.1</b>	2CSF204201R2900	<b>919001</b>			0.405	1/3
	300	40	<b>F204 A S-40/0.3</b>	2CSF204201R3400	<b>784708</b>			0.375	1/3
		63	<b>F204 A S-63/0.3</b>	2CSF204201R3630	<b>784807</b>			0.375	1/3
		100	<b>F204 A S-100/0.3</b>	2CSF204201R3900	<b>919100</b>			0.405	1/3
	500	125	<b>F204 A S-125/0.3</b>	2CSF204201R3950	<b>968207</b>			0.500	1/3
		40	<b>F204 A S-40/0.5</b>	2CSF204201R4400	<b>784906</b>			0.375	1/3
		63	<b>F204 A S-63/0.5</b>	2CSF204201R4630	<b>785002</b>			0.375	1/3
	1000	100	<b>F204 A S-100/0.5</b>	2CSF204201R4900	<b>919209</b>			0.405	1/3
		125	<b>F204 A S-125/0.5</b>	2CSF204201R4950	<b>968405</b>			0.500	1/3
		40	<b>F204 A S-40/1</b>	2CSF204201R5400	<b>823506</b>			0.375	1/3
	1000	63	<b>F204 A S-63/1</b>	2CSF204201R5630	<b>823605</b>			0.375	1/3
		100	<b>F204 A S-100/1</b>	2CSF204201R5900	<b>919308</b>			0.405	1/3

**3**



**3**

<b>TECHNICAL FEATURES</b>			
	Standards		
<b>Electrical features</b>	Operating characteristic: type		
	Poles		
	Size		A
	Rated voltage $U_N$		V
	Insulation voltage $U_i$		V
	Max. operating voltage of circuit test		V
	Min. operating voltage of circuit test		V
	Rated frequency		Hz
	Rated breaking capacity (I <sub>cn</sub> ) acc. to IEC /EN 61009		A
	Rated breaking capacity (I <sub>cn</sub> ) acc. to IEC/EN 60947-2		A
	Rated residual breaking capacity I $\Delta$ m		kA
	Rated impulse withstand voltage (1.2/50) U <sub>imp</sub>		kV
	Dielectric test voltage at ind. freq. for 1 min.		kV
	Surge current resistance acc. to VDE 0432 Part 2 (wave 8/20)		A
<b>Mechanical features</b>	Toggle		
	Electrical life		
	Mechanical life		
	Protection degree	housing terminals	
	Tropicalization acc. to IEC /EN 60068-2	humid heat constant climatic conditions	°C/RH
		variable climatic conditions	°C/RH
	Ambient temperature (with daily average $\leq +35$ °C)		°C
<b>Installation</b>	Storage temperature		°C
	Terminal type	2P 3P/4P I <sub>n</sub> = 25 and 40 A 3P/4P I <sub>n</sub> = 63 A	
<b>Dimensions and weight</b>	Terminal size for cables	2P 3P/4P I <sub>n</sub> = 25 and 40 A 3P/4P I <sub>n</sub> = 63 A	mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>
	Tightening torque	2P 3P/4P I <sub>n</sub> = 25 and 40 A 3P/4P I <sub>n</sub> = 63 A	N*m N*m N*m
	Mounting		
<b>Combination with MCBs</b>	Dimensions (H x D x W)	2P 3P/4P I <sub>n</sub> = 25 and 40 A 3P/4P I <sub>n</sub> = 63 A	mm mm mm
	Weight	2P 3P/4P I <sub>n</sub> = 25 and 40 A 3P/4P I <sub>n</sub> = 63 A	g g g
	Combinable with:	S200 S200 M S200 P	

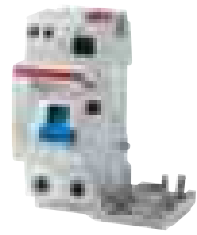


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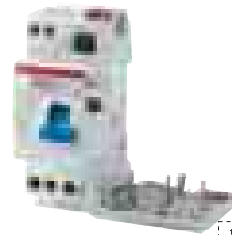
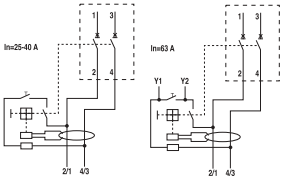
DDA200 AC	DDA200 A	DDA200 A AE	DDA200 AC AP-R	DDA200 A AP-R	DDA200 AC S	DDA200 A S
			IEC/EN 61009 Ann.G			
AC	A	A	AC	A	AC	A
25, 40, 63		63	2P, 3P, 4P	25, 40, 63		63
			230/400 - 240/415			
			500			
			254 (440 for 3P and 4P)			
			110 (195 for 3P and 4P)			
			50...60			
			Icn of the associated MCB			
			Icu of the associated MCB			
			Icn of the associated MCB			
			5			
	250		2.5		3000	
			5000			
			blue			
			10000			
			20000			
			IP4X			
			IP2X			
			28 cycles with 55/95...100			
			23/83 - 40/93 - 55/20			
			25/95 - 40/95			
			-25...+55			
			-40...+70			
			failsafe bi-directional cylinder-lift terminal (shock protected)			
			cage (shock protected)			
			failsafe bi-directional cylinder-lift terminal (shock protected)			
			(rigid and flexible) up to 25			
			(rigid and flexible) up to 16			
			(rigid and flexible) up to 25			
			2.8			
			1.2			
			2.8			
			on DIN rail EN 60715 (35 mm) by means of fast clip device			
			85 x 69 x 70			
			85 x 69 x 70			
			85 x 69 x 140			
			175			
			175			
			325			
			yes			
			yes			
			yes			

# AC

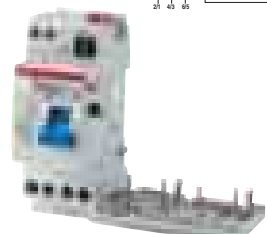
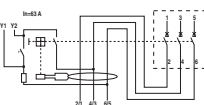
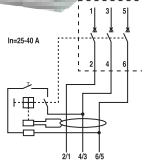
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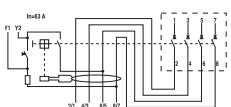
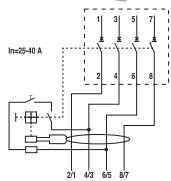
2.CSC4005F0001



2.CSC4005F0001



2.CSC4005F0001



## DDA 200 AC type

Function: RCD-block for assembly on site with MCBs S 200 series. Protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts.

Application: residential, commercial, industrial.

Standard: IEC/EN 61009 Ann. G

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code				
2	10	25	DDA202 AC-25/0.01	2CSB202001R0250	791003		0.200	1
		30	DDA202 AC-25/0.03	2CSB202001R1250	791102		0.200	1
		40	DDA202 AC-40/0.03	2CSB202001R1400	791201		0.200	1
		63 ②	DDA202 AC-63/0.03	2CSB202001R1630	791300		0.200	1
	100	25	DDA202 AC-25/0.1	2CSB202001R2250	791409		0.200	1
		40	DDA202 AC-40/0.1	2CSB202001R2400	791508		0.200	1
		63 ②	DDA202 AC-63/0.1	2CSB202001R2630	791607		0.200	1
	300	25	DDA202 AC-25/0.3	2CSB202001R3250	791706		0.200	1
		40	DDA202 AC-40/0.3	2CSB202001R3400	791805		0.200	1
		63 ②	DDA202 AC-63/0.3	2CSB202001R3630	791904		0.200	1
	500	25	DDA202 AC-25/0.5	2CSB202001R4250	790200		0.200	1
		40	DDA202 AC-40/0.5	2CSB202001R4400	792109		0.200	1
63 ②		DDA202 AC-63/0.5	2CSB202001R4630	792208		0.200	1	
1000	25	DDA202 AC-25/1	2CSB202001R5250	808305		0.200	1	
	40	DDA202 AC-40/1	2CSB202001R5400	808404		0.200	1	
	63 ②	DDA202 AC-63/1	2CSB202001R5630	792307		0.200	1	
3	30	25	DDA203 AC-25/0.03	2CSB203001R1250	792505		0.200	1
		40	DDA203 AC-40/0.03	2CSB203001R1400	792604		0.200	1
		63 ②	DDA203 AC-63/0.03	2CSB203001R1630	792703		0.350	1
	100	25	DDA203 AC-25/0.1	2CSB203001R2250	792802		0.200	1
		40	DDA203 AC-40/0.1	2CSB203001R2400	792901		0.200	1
		63 ②	DDA203 AC-63/0.1	2CSB203001R2630	793007		0.350	1
	300	25	DDA203 AC-25/0.3	2CSB203001R3250	793106		0.200	1
		40	DDA203 AC-40/0.3	2CSB203001R3400	793205		0.200	1
		63 ②	DDA203 AC-63/0.3	2CSB203001R3630	793304		0.350	1
	500	25	DDA203 AC-25/0.5	2CSB203001R4250	793403		0.200	1
		40	DDA203 AC-40/0.5	2CSB203001R4400	793502		0.200	1
		63 ②	DDA203 AC-63/0.5	2CSB203001R4630	793601		0.350	1
1000	25	DDA203 AC-25/1	2CSB203001R5250	808503		0.200	1	
	40	DDA203 AC-40/1	2CSB203001R5400	808602		0.200	1	
	63 ②	DDA203 AC-63/1	2CSB203001R5630	793700		0.350	1	
4	30	25	DDA204 AC-25/0.03	2CSB204001R1250	793908		0.200	1
		40	DDA204 AC-40/0.03	2CSB204001R1400	794004		0.200	1
		63 ① ②	DDA204 AC-63/0.03	2CSB204001R1630	794103		0.350	1
	100	25	DDA204 AC-25/0.1	2CSB204001R2250	794202		0.200	1
		40	DDA204 AC-40/0.1	2CSB204001R2400	794301		0.200	1
		63 ②	DDA204 AC-63/0.1	2CSB204001R2630	794400		0.350	1
	300	25	DDA204 AC-25/0.3	2CSB204001R3250	794509		0.200	1
		40	DDA204 AC-40/0.3	2CSB204001R3400	794608		0.200	1
		63 ②	DDA204 AC-63/0.3	2CSB204001R3630	794707		0.350	1
	500	25	DDA204 AC-25/0.5	2CSB204001R4250	794806		0.200	1
		40	DDA204 AC-40/0.5	2CSB204001R4400	794905		0.200	1
		63 ②	DDA204 AC-63/0.5	2CSB204001R4630	795001		0.350	1
1000	25	DDA204 AC-25/1	2CSB204001R5250	808701		0.200	1	
	40	DDA204 AC-40/1	2CSB204001R5400	808800		0.200	1	
	63 ②	DDA204 AC-63/1	2CSB204001R5630	795100		0.350	1	

① version with test button working at 115VAC - 127VAC is available on request  
② provided with additional terminals for remote tripping

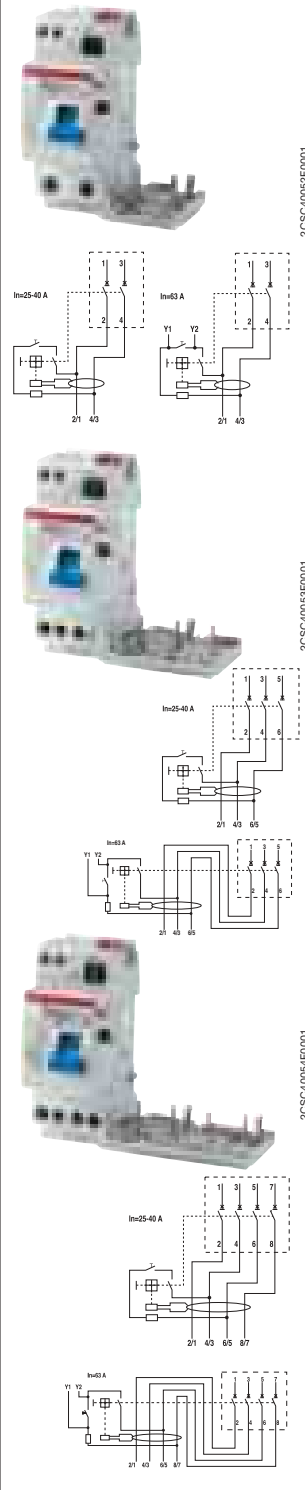
**A**

**DDA 200 A type**

Function: RCD-block for assembly on site with MCBs S 200 series. Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts.

Application: residential, commercial, industrial.

Standard: IEC/EN 61009 Ann. G



Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current $I_n$ A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	10	25	<b>DDA202 A-25/0.01</b>	2CSB202101R0250	<b>795308</b>			0.200	1
		30	25	<b>DDA202 A-25/0.03</b>	2CSB202101R1250	<b>795407</b>		0.200	1
			40	<b>DDA202 A-40/0.03</b>	2CSB202101R1400	<b>795506</b>		0.200	1
			63 ②	<b>DDA202 A-63/0.03</b>	2CSB202101R1630	<b>795605</b>		0.200	1
	100	25	<b>DDA202 A-25/0.1</b>	2CSB202101R2250	<b>795704</b>		0.200	1	
		40	<b>DDA202 A-40/0.1</b>	2CSB202101R2400	<b>795803</b>		0.200	1	
		63 ②	<b>DDA202 A-63/0.1</b>	2CSB202101R2630	<b>795902</b>		0.200	1	
	300	25	<b>DDA202 A-25/0.3</b>	2CSB202101R3250	<b>796008</b>		0.200	1	
		40	<b>DDA202 A-40/0.3</b>	2CSB202101R3400	<b>796107</b>		0.200	1	
		63 ②	<b>DDA202 A-63/0.3</b>	2CSB202101R3630	<b>796206</b>		0.200	1	
	500	25	<b>DDA202 A-25/0.5</b>	2CSB202101R4250	<b>796305</b>		0.200	1	
		40	<b>DDA202 A-40/0.5</b>	2CSB202101R4400	<b>796404</b>		0.200	1	
63 ②		<b>DDA202 A-63/0.5</b>	2CSB202101R4630	<b>796503</b>		0.200	1		
1000	25	<b>DDA202 A-25/1</b>	2CSB202101R5250	<b>808909</b>		0.200	1		
	40	<b>DDA202 A-40/1</b>	2CSB202101R5400	<b>809005</b>		0.200	1		
	63 ②	<b>DDA202 A-63/1</b>	2CSB202101R5630	<b>796602</b>		0.200	1		
3	30	25	<b>DDA203 A-25/0.03</b>	2CSB203101R1250	<b>796701</b>		0.200	1	
		40	<b>DDA203 A-40/0.03</b>	2CSB203101R1400	<b>796800</b>		0.200	1	
		63 ②	<b>DDA203 A-63/0.03</b>	2CSB203101R1630	<b>796909</b>		0.350	1	
	100	25	<b>DDA203 A-25/0.1</b>	2CSB203101R2250	<b>797005</b>		0.200	1	
		40	<b>DDA203 A-40/0.1</b>	2CSB203101R2400	<b>797104</b>		0.200	1	
		63 ②	<b>DDA203 A-63/0.1</b>	2CSB203101R2630	<b>797203</b>		0.350	1	
	300	25	<b>DDA203 A-25/0.3</b>	2CSB203101R3250	<b>797302</b>		0.200	1	
		40	<b>DDA203 A-40/0.3</b>	2CSB203101R3400	<b>797401</b>		0.200	1	
		63 ②	<b>DDA203 A-63/0.3</b>	2CSB203101R3630	<b>797500</b>		0.350	1	
	500	25	<b>DDA203 A-25/0.5</b>	2CSB203101R4250	<b>797609</b>		0.200	1	
		40	<b>DDA203 A-40/0.5</b>	2CSB203101R4400	<b>797708</b>		0.200	1	
		63 ②	<b>DDA203 A-63/0.5</b>	2CSB203101R4630	<b>797807</b>		0.350	1	
1000	25	<b>DDA203 A-25/1</b>	2CSB203101R5250	<b>809104</b>		0.200	1		
	40	<b>DDA203 A-40/1</b>	2CSB203101R5400	<b>809203</b>		0.200	1		
	63 ②	<b>DDA203 A-63/1</b>	2CSB203101R5630	<b>797906</b>		0.350	1		
4	30	25	<b>DDA204 A-25/0.03</b>	2CSB204101R1250	<b>798002</b>		0.200	1	
		40	<b>DDA204 A-40/0.03</b>	2CSB204101R1400	<b>798101</b>		0.200	1	
		63 ① ②	<b>DDA204 A-63/0.03</b>	2CSB204101R1630	<b>798200</b>		0.350	1	
	100	25	<b>DDA204 A-25/0.1</b>	2CSB204101R2250	<b>798309</b>		0.200	1	
		40	<b>DDA204 A-40/0.1</b>	2CSB204101R2400	<b>798408</b>		0.200	1	
		63 ②	<b>DDA204 A-63/0.1</b>	2CSB204101R2630	<b>798507</b>		0.350	1	
	300	25	<b>DDA204 A-25/0.3</b>	2CSB204101R3250	<b>798606</b>		0.200	1	
		40	<b>DDA204 A-40/0.3</b>	2CSB204101R3400	<b>798705</b>		0.200	1	
		63 ②	<b>DDA204 A-63/0.3</b>	2CSB204101R3630	<b>798804</b>		0.350	1	
	500	25	<b>DDA204 A-25/0.5</b>	2CSB204101R4250	<b>798903</b>		0.200	1	
		40	<b>DDA204 A-40/0.5</b>	2CSB204101R4400	<b>799009</b>		0.200	1	
		63 ②	<b>DDA204 A-63/0.5</b>	2CSB204101R4630	<b>799108</b>		0.350	1	
1000	25	<b>DDA204 A-25/1</b>	2CSB204101R5250	<b>809302</b>		0.200	1		
	40	<b>DDA204 A-40/1</b>	2CSB204101R5400	<b>809401</b>		0.200	1		
	63 ②	<b>DDA204 A-63/1</b>	2CSB204101R5630	<b>799207</b>		0.350	1		

① version with test button working at 115 VAC-127 VAC is available on request  
② provided with additional terminals for remote tripping

3

A

**DDA 200 AE, A type**

Function: RCD-block for assembly on site with MCBs S 200 series. Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; the RCD-block is provided with two additional terminals to be used in emergency circuits for remote opening in positive safety; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts.

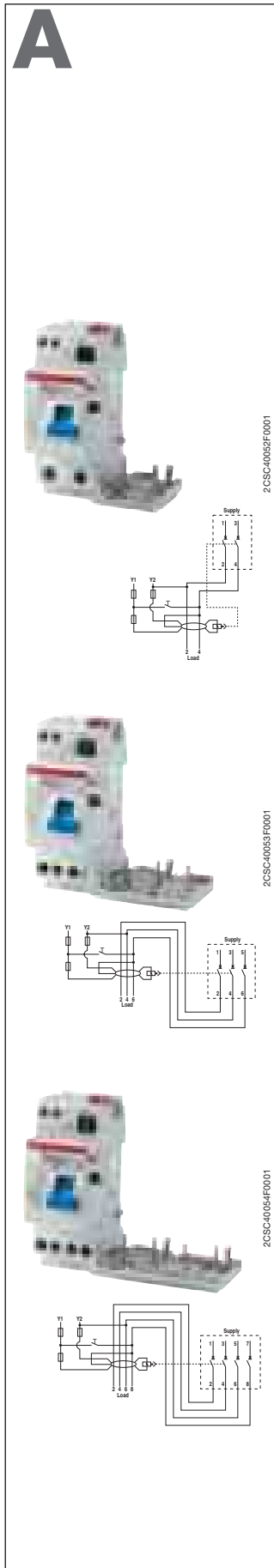
Application: commercial, industrial.

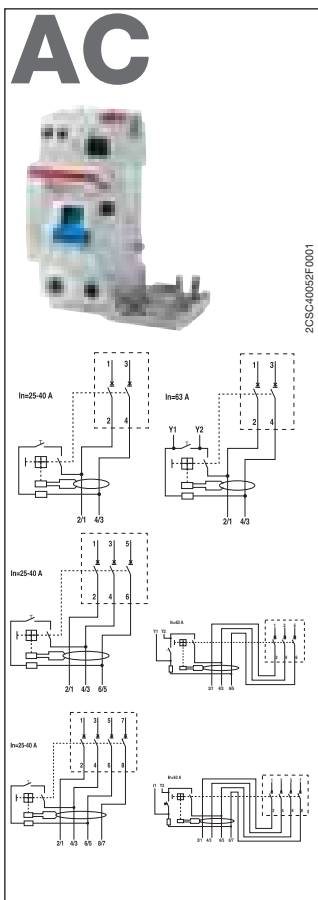
Standard: IEC/EN 61009 Ann. G

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	30	63	DDA202 A-63/0.03 AE	2CSB202701R1630	801702			0.200	1
	300	63	DDA202 A-63/0.3 AE	2CSB202701R3630	801801			0.200	1
	500	63	DDA202 A-63/0.5 AE	2CSB202701R4630	801900			0.200	1
	1000	63	DDA202 A-63/1 AE	2CSB202701R5630	802006			0.200	1

3	30	63	DDA203 A-63/0.03 AE	2CSB203701R1630	802105			0.350	1
	300	63	DDA203 A-63/0.3 AE	2CSB203701R3630	802204			0.350	1
	500	63	DDA203 A-63/0.5 AE	2CSB203701R4630	802303			0.350	1
	1000	63	DDA203 A-63/1 AE	2CSB203701R5630	802402			0.350	1

4	30	63	DDA204 A-63/0.03 AE	2CSB204701R1630	802501			0.350	1
	300	63	DDA204 A-63/0.3 AE	2CSB204701R3630	802600			0.350	1
	500	63	DDA204 A-63/0.5 AE	2CSB204701R4630	802709			0.350	1
	1000	63	DDA204 A-63/1 AE	2CSB204701R5630	802808			0.350	1





**DDA 200 AP-R, AC type**

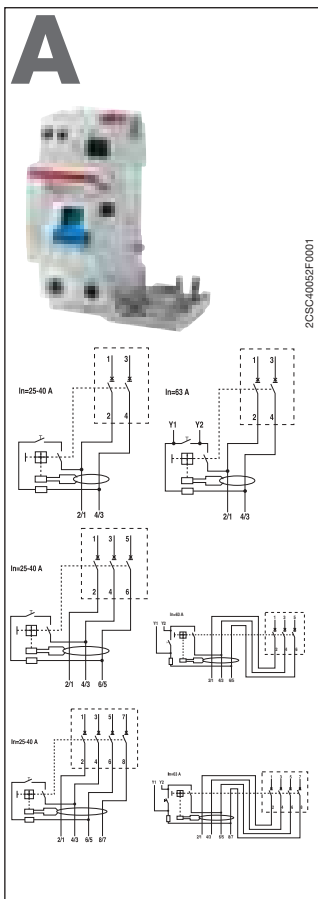
Function: RCD-block for assembly on site with MCBs S 200 series. Protection against the effects of sinusoidal alternating earth fault currents, providing the best compromise between safety and continuity in the service thanks to the resistance to unwanted trippings; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts.

**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61009 Ann. G**

**Surge current resistance (wave 8/20)=3000 A**

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current $I_n$ A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	30	25	DDA202 AC-25/0.03 AP-R	2CSB202301R1250	800507			0.200	1
		40	DDA202 AC-40/0.03 AP-R	2CSB202301R1400	800606			0.200	1
		63 ①	DDA202 AC-63/0.03 AP-R	2CSB202301R1630	800705			0.200	1
3	30	25	DDA203 AC-25/0.03 AP-R	2CSB203301R1250	810704			0.200	1
		40	DDA203 AC-40/0.03 AP-R	2CSB203301R1400	810803			0.200	1
		63 ①	DDA203 AC-63/0.03 AP-R	2CSB203301R1630	810902			0.350	1
4	30	25	DDA204 AC-25/0.03 AP-R	2CSB204301R1250	800804			0.200	1
		40	DDA204 AC-40/0.03 AP-R	2CSB204301R1400	800903			0.200	1
		63 ①	DDA204 AC-63/0.03 AP-R	2CSB204301R1630	801009			0.350	1



**DDA 200 AP-R, A type**

Function: RCD-block for assembly on site with MCBs S 200 series. Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents, providing the best compromise between safety and continuity in the service thanks to the resistance to unwanted trippings; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts.

**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61009 Ann. G**

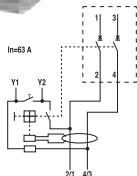
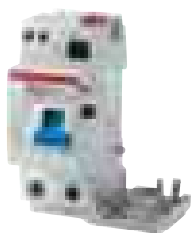
**Surge current resistance (wave 8/20)=3000 A**

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current $I_n$ A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	30	25	DDA202 A-25/0.03 AP-R	2CSB202401R1250	801108			0.200	1
		40	DDA202 A-40/0.03 AP-R	2CSB202401R1400	801207			0.200	1
		63 ①	DDA202 A-63/0.03 AP-R	2CSB202401R1630	801306			0.200	1
3	30	25	DDA203 A-25/0.03 AP-R	2CSB203401R1250	811008			0.200	1
		40	DDA203 A-40/0.03 AP-R	2CSB203401R1400	811107			0.200	1
		63 ①	DDA203 A-63/0.03 AP-R	2CSB203401R1630	811206			0.350	1
4	30	25	DDA204 A-25/0.03 AP-R	2CSB204401R1250	801405			0.200	1
		40	DDA204 A-40/0.03 AP-R	2CSB204401R1400	801504			0.200	1
		63 ①	DDA204 A-63/0.03 AP-R	2CSB204401R1630	801603			0.350	1

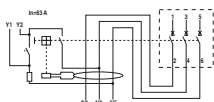
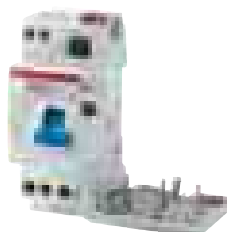
① provided with additional terminals for remote tripping

# AC

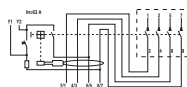
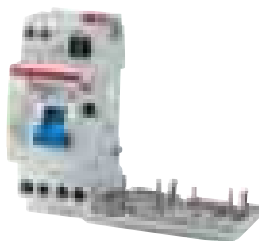
3



2CSB4002FR001



2CSB4003FR001



2CSB4004FR001

## DDA 200 AC selective type

Function: RCD-block for assembly on site with MCBs S 200 series. Protection against the effects of sinusoidal alternating earth fault currents with an intentional tripping delay, which permits to realize the selectivity with downstream instantaneous devices (for more information about selectivity see the technical guide).

Application: commercial, industrial.

Standard: IEC/EN 61009 Ann. G

Surge current resistance (wave 8/20)=5000 A

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	100	63	DDA202 AC S-63/0.1	2CSB202901R2630	809500			0.200	1
	300	63	DDA202 AC S-63/0.3	2CSB202901R3630	809609			0.200	1
	500	63	DDA202 AC S-63/0.5	2CSB202901R4630	809708			0.200	1
	1000	63	DDA202 AC S-63/1	2CSB202901R5630	809807			0.200	1

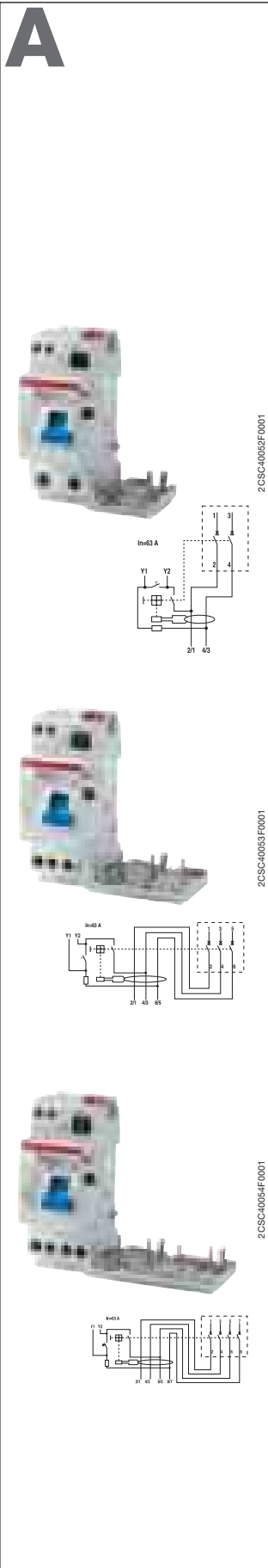
3	100	63	DDA203 AC S-63/0.1	2CSB203901R2630	809906			0.350	1
	300	63	DDA203 AC S-63/0.3	2CSB203901R3630	810001			0.350	1
	500	63	DDA203 AC S-63/0.5	2CSB203901R4630	810100			0.350	1
	1000	63	DDA203 AC S-63/1	2CSB203901R5630	810209			0.350	1

4	100	63	DDA204 AC S-63/0.1	2CSB204901R2630	810308			0.350	1
	300	63	DDA204 AC S-63/0.3	2CSB204901R3630	810407			0.350	1
	500	63	DDA204 AC S-63/0.5	2CSB204901R4630	810506			0.350	1
	1000	63	DDA204 AC S-63/1	2CSB204901R5630	810605			0.350	1

### Attention:

All DDA 200 AC S are provided with additional terminals for remote tripping





**DDA 200 A selective type**

Function: RCD-block for assembly on site with MCBs S 200 series. Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents with an intentional tripping delay, which permits to realize the selectivity with downstream instantaneous devices (for more information about selectivity see the technical guide).

Application: commercial, industrial.

Standard: IEC/EN 61009 Ann. G

Surge current resistance (wave 8/20)=5000 A

Number of poles	Rated residual current I $\Delta$ n mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	100	63	<b>DDA202 A S-63/0.1</b>	2CSB202201R2630	<b>799306</b>			0.200	1
	300	63	<b>DDA202 A S-63/0.3</b>	2CSB202201R3630	<b>799405</b>			0.200	1
	500	63	<b>DDA202 A S-63/0.5</b>	2CSB202201R4630	<b>799504</b>			0.200	1
	1000	63	<b>DDA202 A S-63/1</b>	2CSB202201R5630	<b>799603</b>			0.200	1

3	100	63	<b>DDA203 A S-63/0.1</b>	2CSB203201R2630	<b>799702</b>			0.350	1
	300	63	<b>DDA203 A S-63/0.3</b>	2CSB203201R3630	<b>799801</b>			0.350	1
	500	63	<b>DDA203 A S-63/0.5</b>	2CSB203201R4630	<b>799900</b>			0.350	1
	1000	63	<b>DDA203 A S-63/1</b>	2CSB203201R5630	<b>800002</b>			0.350	1

4	100	63	<b>DDA204 A S-63/0.1</b>	2CSB204201R2630	<b>800101</b>			0.350	1
	300	63	<b>DDA204 A S-63/0.3</b>	2CSB204201R3630	<b>800200</b>			0.350	1
	500	63	<b>DDA204 A S-63/0.5</b>	2CSB204201R4630	<b>800309</b>			0.350	1
	1000	63	<b>DDA204 A S-63/1</b>	2CSB204201R5630	<b>800408</b>			0.350	1

**Attention:**

All DDA 200 A S are provided with additional terminals for remote tripping



**TECHNICAL CHARACTERISTICS**

Standards

**Electrical features**

Operating characteristic: type (wave form of the earth leakage sensed)

Poles

Rated current  $I_n$  A

Rated voltage  $U_n$  V  
1P+N V  
2P, 3P, 4P V

Rated residual operating current A

Insulation voltage  $U_i$

Max. operating voltage of circuit test V

Min. operating voltage of circuit test V

Rated frequency Hz

Rated breaking capacity acc. to IEC/EN 61009 ultimate  $I_{cn}$  A

Rated breaking capacity ultimate  $I_{cu}$  kA

acc. to IEC/EN 60947-2 1P+N @230 VAC, 2P, 3P, 4P @400 VAC service  $I_{cs}$  kA

Rated residual breaking capacity  $I_{\Delta m}$  kA

Rated impulse withstand voltage (1.2/50)  $U_{imp}$  kV

Dielectric test voltage at ind. freq. for 1 min. kV

Overvoltage category

Thermomagnetic release characteristic B:  $3 I_n \leq I_m \leq 5 I_n$   
C:  $5 I_n \leq I_m \leq 10 I_n$   
K:  $8 I_n \leq I_m \leq 14 I_n$

Surge current resistance acc. to VDE 0432 Part 2 (wave 8/20) A

**Mechanical features**

Toggle 1P+N  
2P, 3P, 4P

Electrical life

Mechanical life

Protection degree housing terminals

Tropicalization humid heat °C/RH

acc. to IEC /EN 60068-2 constant climatic conditions °C/RH

variable climatic conditions °C/RH

Reference temperature for setting of thermal element °C

Ambient temperature (with daily average  $\leq +35^\circ\text{C}$ ) °C

Storage temperature °C

**Installation**

Terminal type top  
bottom 1P+N/2P  
3P/4P  $I_n \leq 40$  A  
3P/4P  $50 \text{ A} \leq I_n \leq 63$  A

Terminal size top/bottom per cable 1P+N mm<sup>2</sup>

2P mm<sup>2</sup>

3P/4P  $I_n \leq 40$  A mm<sup>2</sup>

3P/4P  $50 \text{ A} \leq I_n \leq 63$  A mm<sup>2</sup>

Tightening torque top/bottom 1P+N N\*m

2P N\*m

3P/4P  $I_n \leq 40$  A N\*m

3P/4P  $50 \text{ A} \leq I_n \leq 63$  A N\*m

Mounting

Connection

**Dimensions and weight**

Dimensions (H x D x W) 1P+N mm

2P mm

3P  $I_n \leq 40$  A mm

4P  $I_n \leq 40$  A mm

3P  $50 \text{ A} \leq I_n \leq 63$  A mm

4P  $50 \text{ A} \leq I_n \leq 63$  A mm

Weight 1P+N g

2P g

3P  $I_n \leq 40$  A g

4P  $I_n \leq 40$  A g

3P  $50 \text{ A} \leq I_n \leq 63$  A g

4P  $50 \text{ A} \leq I_n \leq 63$  A g

**Combination with auxiliary elements**

Combinable with:  
auxiliary contact  
signal contact/auxiliary switch  
shunt trip  
undervoltage release



FS 201	DS 200 AC	DS 200 A	DS 200 M AC	DS 200 M A
IEC/EN 61009, IEC/EN 60947-2				
A	AC	A	AC	A
1P+N		2P, 3P, 4P		
6, 10, 13, 16, 20, 25, 32, 40		6, 10, 13, 16, 20, 25, 32, 40, 50, 63		
		230-240		
		230/400 - 240/415		
0.01...0.3		0.03		
		500		
		254 (440 for 50 and 63 A 3P and 4P)		
		110 (195 for 50 and 63 A 3P and 4P)		
		50...60		
6000	6000	6000	10000	10000
10	10	10	15	15
7.5	7.5	7.5	11.2	11.2
6	6	6	10	10
		6		
		2.5		
		III, disconnector abilities		
■ ■ ■		■ ■		
		250		
black sealable in ON-OFF position		black (MCB) sealable in ON-OFF position + blue (RCD)		
		10000		
		20000		
		IP4X		
		IP2X		
		28 cycles with 55/95...100		
		23/83 - 40/93 - 55/20		
		25/95 - 40/95		
		30 (20 for characteristics K)		
		-25...+55		
		-40...+70		
-		failsafe bidirectional cylinder-lift terminal (shock protected)		
-		failsafe bidirectional cylinder-lift terminal (shock protected)		
-		cage (shock protected)		
(rigid and flexible) up to 16/16		failsafe bidirectional cylinder-lift terminal (shock protected)		
-		-		
-		(rigid and flexible) up to 25/25		
-		(rigid and flexible) up to 25/16		
-		(rigid and flexible) up to 25/25		
2.5/2.5		-		
-		2.8/2.8		
-		2.8/1.2		
-		2.8/2.8		
		on DIN rail EN 60715 (35 mm) by means of fast clip device		
		from top and bottom		
85 x 69 x 35		-		
-		85 x 69 x 70		
-		85 x 69 x 87.5		
-		85 x 69 x 105		
-		85 x 69 x 122.5		
-		85 x 69 x 140		
200		-		
-		475		
-		625		
-		775		
-		775		
-		925		
no		yes		
no		yes		
no		yes		
no		yes		

**B**

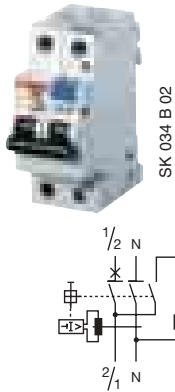
**FS 201 A type, B, C and K characteristics**

Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

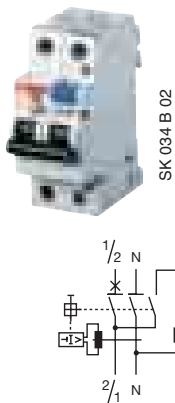
I<sub>cn</sub>=6 kA



Number of poles	Type/class	Rated residual current I <sub>Δn</sub> mA	Rated current I <sub>n</sub> A	Order details		Bbn 40 16779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.		
				Type code	Order code						EAN	
1P+N	A	10	10	FS 201-B 10/0.01	2CSR255101R0105	564731			0.200	1		
			13	FS 201-B 13/0.01	2CSR255101R0135	564748			0.200	1		
			16	FS 201-B 16/0.01	2CSR255101R0165	564755			0.200	1		
			30	6	FS 201-B 6/0.03	2CSR255101R1065	516990			0.200	1	
				10	FS 201-B 10/0.03	2CSR255101R1105	517034			0.200	1	
				13	FS 201-B 13/0.03	2CSR255101R1135	517041			0.200	1	
		30	A	30	16	FS 201-B 16/0.03	2CSR255101R1165	517072			0.200	1
					20	FS 201-B 20/0.03	2CSR255101R1205	517089			0.200	1
					25	FS 201-B 25/0.03	2CSR255101R1255	517119			0.200	1
					32	FS 201-B 32/0.03	2CSR255101R1325	517126			0.200	1
					40	FS 201-B 40/0.03	2CSR255101R1405	517133			0.200	1

**C**

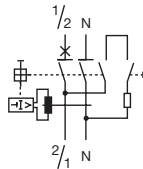
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			10	FS 201-C 10/0.03	2CSR255101R1104	552899			0.200	1			
			13	FS 201-C 13/0.03	2CSR255101R1134	552905			0.200	1			
			16	FS 201-C 16/0.03	2CSR255101R1164	552912			0.200	1			
			20	FS 201-C 20/0.03	2CSR255101R1204	552929			0.200	1			
			25	FS 201-C 25/0.03	2CSR255101R1254	552936			0.200	1			
			32	FS 201-C 32/0.03	2CSR255101R1324	552936			0.200	1			
			40	FS 201-C 40/0.03	2CSR255101R1404	552950			0.200	1			
			300	A	300	6	FS 201-C 6/0.3	2CSR255101R3064	539838			0.200	1
						10	FS 201-C 10/0.3	2CSR255101R3104	539845			0.200	1
						13	FS 201-C 13/0.3	2CSR255101R3134	539852			0.200	1
						16	FS 201-C 16/0.3	2CSR255101R3164	539869			0.200	1
		20				FS 201-C 20/0.3	2CSR255101R3204	539876			0.200	1	
		25				FS 201-C 25/0.3	2CSR255101R3254	539883			0.200	1	
		32	FS 201-C 32/0.3	2CSR255101R3324	539890			0.200	1				
		40	FS 201-C 40/0.3	2CSR255101R3404	539906			0.200	1				



**K**



SK 034 B 02



1P+N	A	10	16	FS 201-K 16/0.01	2CSR255101R0167	564762	0.200	1		
30	A	1	1	FS 201-K 1/0.03	2CSR255101R1017	569576	0.200	1		
		2	2	FS 201-K 2/0.03	2CSR255101R1027	569583	0.200	1		
		4	4	FS 201-K 4/0.03	2CSR255101R1047	569996	0.200	1		
		6	6	FS 201-K 6/0.03	2CSR255101R1067	517140	0.200	1		
		10	10	FS 201-K 10/0.03	2CSR255101R1107	517157	0.200	1		
		13	13	FS 201-K 13/0.03	2CSR255101R1137	569590	0.200	1		
		16	16	FS 201-K 16/0.03	2CSR255101R1167	517164	0.200	1		
		20	20	FS 201-K 20/0.03	2CSR255101R1207	517171	0.200	1		
		25	25	FS 201-K 25/0.03	2CSR255101R1257	517188	0.200	1		
		32	32	FS 201-K 32/0.03	2CSR255101R1327	517195	0.200	1		
		300	A	1	1	FS 201-K 1/0.3	2CSR255101R3017	569613	0.200	1
				2	2	FS 201-K 2/0.3	2CSR255101R3027	569620	0.200	1
4	4			FS 201-K 4/0.3	2CSR255101R3047	569637	0.200	1		
6	6			FS 201-K 6/0.3	2CSR255101R3067	569644	0.200	1		
10	10			FS 201-K 10/0.3	2CSR255101R3107	569651	0.200	1		
13	13			FS 201-K 13/0.3	2CSR255101R3137	569668	0.200	1		
16	16			FS 201-K 16/0.3	2CSR255101R3167	569675	0.200	1		
20	20			FS 201-K 20/0.3	2CSR255101R3207	569682	0.200	1		
25	25			FS 201-K 25/0.3	2CSR255101R3257	569699	0.200	1		
32	32			FS 201-K 32/0.3	2CSR255101R3327	569705	0.200	1		

**3**

**B**

**DS 200 AC type, B characteristic**

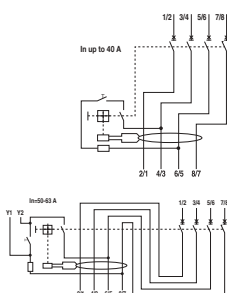
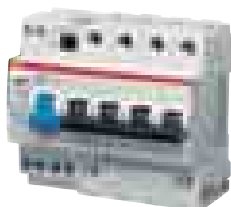
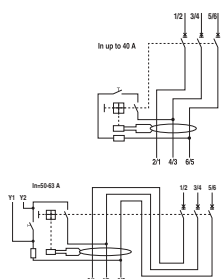
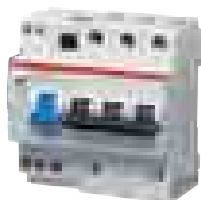
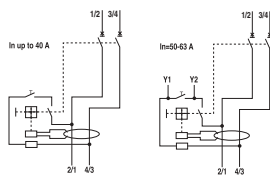
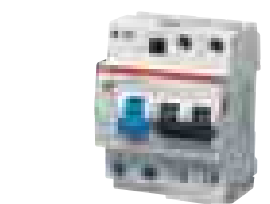
Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

I<sub>cn</sub>=6 kA

3



Number of poles	Type/class	Rated residual current I <sub>Δn</sub> mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				Type code	Order code					
2	AC	30	6	DS202 AC-B6/0.03	2CSR252001R1065	863502			0.475	1
			10	DS202 AC-B10/0.03	2CSR252001R1105	863601			0.475	1
			13	DS202 AC-B13/0.03	2CSR252001R1135	863700			0.475	1
			16	DS202 AC-B16/0.03	2CSR252001R1165	863809			0.475	1
			20	DS202 AC-B20/0.03	2CSR252001R1205	863908			0.475	1
			25	DS202 AC-B25/0.03	2CSR252001R1255	864004			0.475	1
			32	DS202 AC-B32/0.03	2CSR252001R1325	864103			0.475	1
			40	DS202 AC-B40/0.03	2CSR252001R1405	864202			0.475	1
			50 ①	DS202 AC-B50/0.03	2CSR252001R1505	864301			0.475	1
			63 ①	DS202 AC-B63/0.03	2CSR252001R1635	864400			0.475	1

3	AC	30	6	DS203 AC-B6/0.03	2CSR253001R1065	865506			0.625	1
			10	DS203 AC-B10/0.03	2CSR253001R1105	865605			0.625	1
			13	DS203 AC-B13/0.03	2CSR253001R1135	865704			0.625	1
			16	DS203 AC-B16/0.03	2CSR253001R1165	865803			0.625	1
			20	DS203 AC-B20/0.03	2CSR253001R1205	865902			0.625	1
			25	DS203 AC-B25/0.03	2CSR253001R1255	866008			0.625	1
			32	DS203 AC-B32/0.03	2CSR253001R1325	866107			0.625	1
			40	DS203 AC-B40/0.03	2CSR253001R1405	866206			0.625	1
			50 ①	DS203 AC-B50/0.03	2CSR253001R1505	866305			0.775	1
			63 ①	DS203 AC-B63/0.03	2CSR253001R1635	866404			0.775	1

4	AC	30	6	DS204 AC-B6/0.03	2CSR254001R1065	867500			0.775	1
			10	DS204 AC-B10/0.03	2CSR254001R1105	867609			0.775	1
			13	DS204 AC-B13/0.03	2CSR254001R1135	867708			0.775	1
			16	DS204 AC-B16/0.03	2CSR254001R1165	867807			0.775	1
			20	DS204 AC-B20/0.03	2CSR254001R1205	867906			0.775	1
			25	DS204 AC-B25/0.03	2CSR254001R1255	868002			0.775	1
			32	DS204 AC-B32/0.03	2CSR254001R1325	868101			0.775	1
			40	DS204 AC-B40/0.03	2CSR254001R1405	868200			0.775	1
			50 ①	DS204 AC-B50/0.03	2CSR254001R1505	868309			0.925	1
			63 ①	DS204 AC-B63/0.03	2CSR254001R1635	868408			0.925	1

① provided with additional terminals for remote tripping

**C**

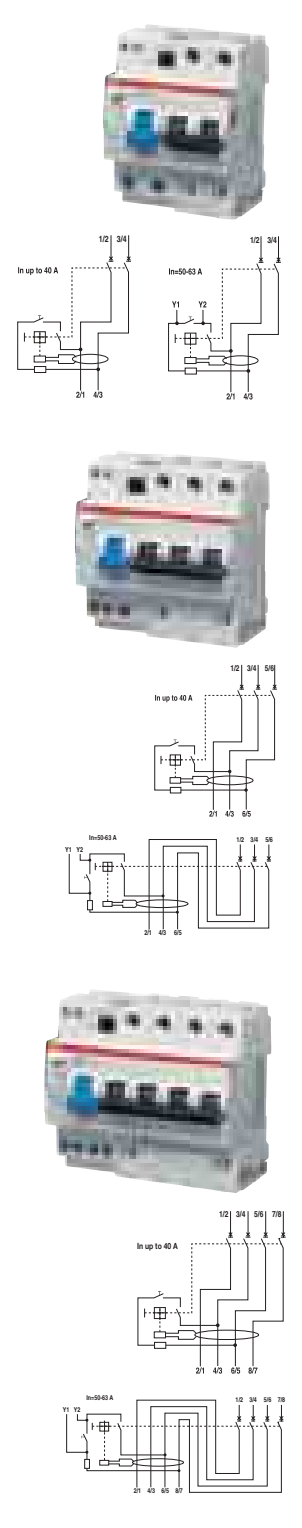
**DS 200 AC type, C characteristic**

Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

Icn=6 kA



Number of poles	Type/class	Rated residual current IΔn mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				Type code	Order code					
2	AC	30	6	<b>DS202 AC-C6/0.03</b>	2CSR252001R1064	<b>869504</b>			0.475	1
			10	<b>DS202 AC-C10/0.03</b>	2CSR252001R1104	<b>869603</b>			0.475	1
			13	<b>DS202 AC-C13/0.03</b>	2CSR252001R1134	<b>869702</b>			0.475	1
			16	<b>DS202 AC-C16/0.03</b>	2CSR252001R1164	<b>869801</b>			0.475	1
			20	<b>DS202 AC-C20/0.03</b>	2CSR252001R1204	<b>869900</b>			0.475	1
			25	<b>DS202 AC-C25/0.03</b>	2CSR252001R1254	<b>870005</b>			0.475	1
			32	<b>DS202 AC-C32/0.03</b>	2CSR252001R1324	<b>870104</b>			0.475	1
			40	<b>DS202 AC-C40/0.03</b>	2CSR252001R1404	<b>870203</b>			0.475	1
			50 ①	<b>DS202 AC-C50/0.03</b>	2CSR252001R1504	<b>870302</b>			0.475	1
63 ①	<b>DS202 AC-C63/0.03</b>	2CSR252001R1634	<b>870401</b>			0.475	1			

3	AC	30	6	<b>DS203 AC-C6/0.03</b>	2CSR253001R1064	<b>871507</b>			0.625	1
			10	<b>DS203 AC-C10/0.03</b>	2CSR253001R1104	<b>871606</b>			0.625	1
			13	<b>DS203 AC-C13/0.03</b>	2CSR253001R1134	<b>871705</b>			0.625	1
			16	<b>DS203 AC-C16/0.03</b>	2CSR253001R1164	<b>871804</b>			0.625	1
			20	<b>DS203 AC-C20/0.03</b>	2CSR253001R1204	<b>871903</b>			0.625	1
			25	<b>DS203 AC-C25/0.03</b>	2CSR253001R1254	<b>872009</b>			0.625	1
			32	<b>DS203 AC-C32/0.03</b>	2CSR253001R1324	<b>872108</b>			0.625	1
			40	<b>DS203 AC-C40/0.03</b>	2CSR253001R1404	<b>872207</b>			0.625	1
			50 ①	<b>DS203 AC-C50/0.03</b>	2CSR253001R1504	<b>872306</b>			0.775	1
63 ①	<b>DS203 AC-C63/0.03</b>	2CSR253001R1634	<b>872405</b>			0.775	1			

4	AC	30	6	<b>DS204 AC-C6/0.03</b>	2CSR254001R1064	<b>873501</b>			0.775	1
			10	<b>DS204 AC-C10/0.03</b>	2CSR254001R1104	<b>873600</b>			0.775	1
			13	<b>DS204 AC-C13/0.03</b>	2CSR254001R1134	<b>873709</b>			0.775	1
			16	<b>DS204 AC-C16/0.03</b>	2CSR254001R1164	<b>873808</b>			0.775	1
			20	<b>DS204 AC-C20/0.03</b>	2CSR254001R1204	<b>873907</b>			0.775	1
			25	<b>DS204 AC-C25/0.03</b>	2CSR254001R1254	<b>874003</b>			0.775	1
			32	<b>DS204 AC-C32/0.03</b>	2CSR254001R1324	<b>874102</b>			0.775	1
			40	<b>DS204 AC-C40/0.03</b>	2CSR254001R1404	<b>874201</b>			0.775	1
			50 ①	<b>DS204 AC-C50/0.03</b>	2CSR254001R1504	<b>874300</b>			0.925	1
63 ①	<b>DS204 AC-C63/0.03</b>	2CSR254001R1634	<b>874409</b>			0.925	1			

① provided with additional terminals for remote tripping

B

DS 200 A type, B characteristic

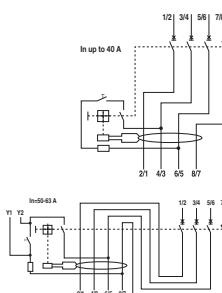
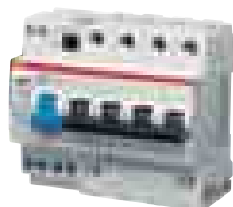
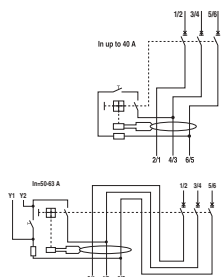
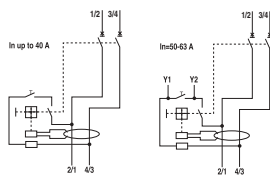
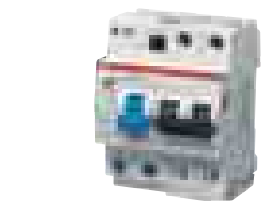
Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

Icn=6 kA

3



Number of poles	Type/class	Rated residual current I $\Delta$ n mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				Type code	Order code					
2	A	30	6	DS202 A-B6/0.03	2CSR252101R1065	857501			0.475	1
			10	DS202 A-B10/0.03	2CSR252101R1105	857600			0.475	1
			13	DS202 A-B13/0.03	2CSR252101R1135	857709			0.475	1
			16	DS202 A-B16/0.03	2CSR252101R1165	857808			0.475	1
			20	DS202 A-B20/0.03	2CSR252101R1205	857907			0.475	1
			25	DS202 A-B25/0.03	2CSR252101R1255	858003			0.475	1
			32	DS202 A-B32/0.03	2CSR252101R1325	858102			0.475	1
			40	DS202 A-B40/0.03	2CSR252101R1405	858201			0.475	1
			50 ①	DS202 A-B50/0.03	2CSR252101R1505	858300			0.475	1
			63 ①	DS202 A-B63/0.03	2CSR252101R1635	858409			0.475	1

3	A	30	6	DS203 A-B6/0.03	2CSR253101R1065	858508			0.625	1
			10	DS203 A-B10/0.03	2CSR253101R1105	858607			0.625	1
			13	DS203 A-B13/0.03	2CSR253101R1135	858706			0.625	1
			16	DS203 A-B16/0.03	2CSR253101R1165	858805			0.625	1
			20	DS203 A-B20/0.03	2CSR253101R1205	858904			0.625	1
			25	DS203 A-B25/0.03	2CSR253101R1255	859000			0.625	1
			32	DS203 A-B32/0.03	2CSR253101R1325	859109			0.625	1
			40	DS203 A-B40/0.03	2CSR253101R1405	859208			0.625	1
			50 ①	DS203 A-B50/0.03	2CSR253101R1505	859307			0.775	1
			63 ①	DS203 A-B63/0.03	2CSR253101R1635	859406			0.775	1

4	A	30	6	DS204 A-B6/0.03	2CSR254101R1065	859505			0.775	1
			10	DS204 A-B10/0.03	2CSR254101R1105	859604			0.775	1
			13	DS204 A-B13/0.03	2CSR254101R1135	859703			0.775	1
			16	DS204 A-B16/0.03	2CSR254101R1165	859802			0.775	1
			20	DS204 A-B20/0.03	2CSR254101R1205	859901			0.775	1
			25	DS204 A-B25/0.03	2CSR254101R1255	860006			0.775	1
			32	DS204 A-B32/0.03	2CSR254101R1325	860105			0.775	1
			40	DS204 A-B40/0.03	2CSR254101R1405	860204			0.775	1
			50 ①	DS204 A-B50/0.03	2CSR254101R1505	860303			0.925	1
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① provided with additional terminals for remote tripping

**C**

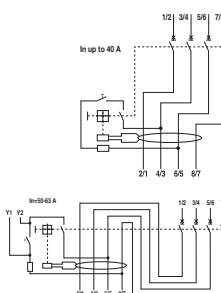
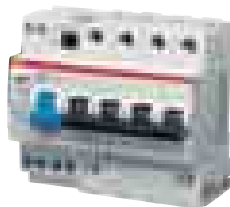
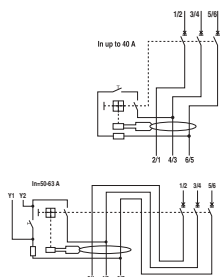
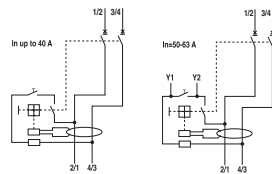
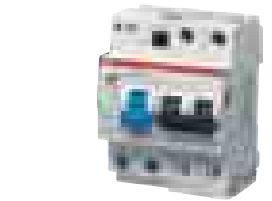
**DS 200 A type, C characteristic**

Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

Icn=6 kA



Number of poles	Type/class	Rated residual current IΔn mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				Type code	Order code					
2	A	30	6	<b>DS202 A-C6/0.03</b>	2CSR252101R1064	<b>860501</b>			0.475	1
			10	<b>DS202 A-C10/0.03</b>	2CSR252101R1104	<b>860600</b>			0.475	1
			13	<b>DS202 A-C13/0.03</b>	2CSR252101R1134	<b>860709</b>			0.475	1
			16	<b>DS202 A-C16/0.03</b>	2CSR252101R1164	<b>860808</b>			0.475	1
			20	<b>DS202 A-C20/0.03</b>	2CSR252101R1204	<b>860907</b>			0.475	1
			25	<b>DS202 A-C25/0.03</b>	2CSR252101R1254	<b>861003</b>			0.475	1
			32	<b>DS202 A-C32/0.03</b>	2CSR252101R1324	<b>861102</b>			0.475	1
			40	<b>DS202 A-C40/0.03</b>	2CSR252101R1404	<b>861201</b>			0.475	1
			50 ①	<b>DS202 A-C50/0.03</b>	2CSR252101R1504	<b>861300</b>			0.475	1
			63 ①	<b>DS202 A-C63/0.03</b>	2CSR252101R1634	<b>861409</b>			0.475	1

3	A	30	6	<b>DS203 A-C6/0.03</b>	2CSR253101R1064	<b>861508</b>			0.625	1
			10	<b>DS203 A-C10/0.03</b>	2CSR253101R1104	<b>861607</b>			0.625	1
			13	<b>DS203 A-C13/0.03</b>	2CSR253101R1134	<b>861706</b>			0.625	1
			16	<b>DS203 A-C16/0.03</b>	2CSR253101R1164	<b>861805</b>			0.625	1
			20	<b>DS203 A-C20/0.03</b>	2CSR253101R1204	<b>861904</b>			0.625	1
			25	<b>DS203 A-C25/0.03</b>	2CSR253101R1254	<b>862000</b>			0.625	1
			32	<b>DS203 A-C32/0.03</b>	2CSR253101R1324	<b>862109</b>			0.625	1
			40	<b>DS203 A-C40/0.03</b>	2CSR253101R1404	<b>862208</b>			0.625	1
			50 ①	<b>DS203 A-C50/0.03</b>	2CSR253101R1504	<b>862307</b>			0.775	1
			63 ①	<b>DS203 A-C63/0.03</b>	2CSR253101R1634	<b>862406</b>			0.775	1

4	A	30	6	<b>DS204 A-C6/0.03</b>	2CSR254101R1064	<b>862505</b>			0.775	1
			10	<b>DS204 A-C10/0.03</b>	2CSR254101R1104	<b>862604</b>			0.775	1
			13	<b>DS204 A-C13/0.03</b>	2CSR254101R1134	<b>862703</b>			0.775	1
			16	<b>DS204 A-C16/0.03</b>	2CSR254101R1164	<b>862802</b>			0.775	1
			20	<b>DS204 A-C20/0.03</b>	2CSR254101R1204	<b>862901</b>			0.775	1
			25	<b>DS204 A-C25/0.03</b>	2CSR254101R1254	<b>863007</b>			0.775	1
			32	<b>DS204 A-C32/0.03</b>	2CSR254101R1324	<b>863106</b>			0.775	1
			40	<b>DS204 A-C40/0.03</b>	2CSR254101R1404	<b>863205</b>			0.775	1
			50 ①	<b>DS204 A-C50/0.03</b>	2CSR254101R1504	<b>863304</b>			0.925	1
			63 ①	<b>DS204 A-C63/0.03</b>	2CSR254101R1634	<b>863403</b>			0.925	1

① provided with additional terminals for remote tripping



**B**

**DS 200 M AC type, B characteristic**

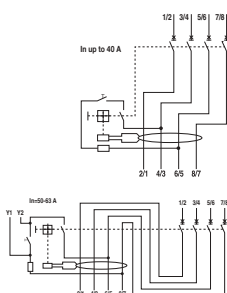
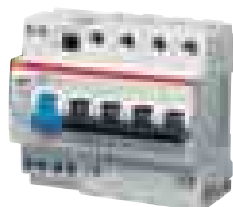
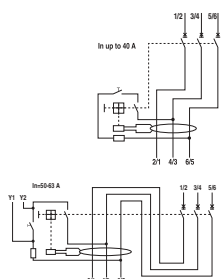
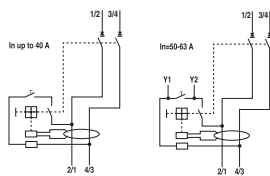
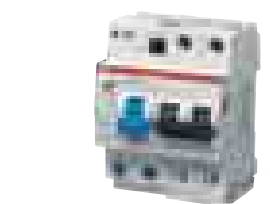
Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

I<sub>cn</sub>=10 kA

3



Number of poles	Type/class	Rated residual current I <sub>Δn</sub> mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				Type code	Order code					
2	AC	30	6	DS202 M AC-B6/0.03	2CSR272001R1065	851509			0.475	1
			10	DS202 M AC-B10/0.03	2CSR272001R1105	851608			0.475	1
			13	DS202 M AC-B13/0.03	2CSR272001R1135	851707			0.475	1
			16	DS202 M AC-B16/0.03	2CSR272001R1165	851806			0.475	1
			20	DS202 M AC-B20/0.03	2CSR272001R1205	851905			0.475	1
			25	DS202 M AC-B25/0.03	2CSR272001R1255	852001			0.475	1
			32	DS202 M AC-B32/0.03	2CSR272001R1325	852100			0.475	1
			40	DS202 M AC-B40/0.03	2CSR272001R1405	852209			0.475	1
			50 ①	DS202 M AC-B50/0.03	2CSR272001R1505	852308			0.475	1
			63 ①	DS202 M AC-B63/0.03	2CSR272001R1635	852407			0.475	1

3	AC	30	6	DS203 M AC-B6/0.03	2CSR273001R1065	852506			0.625	1
			10	DS203 M AC-B10/0.03	2CSR273001R1105	852605			0.625	1
			13	DS203 M AC-B13/0.03	2CSR273001R1135	852704			0.625	1
			16	DS203 M AC-B16/0.03	2CSR273001R1165	852803			0.625	1
			20	DS203 M AC-B20/0.03	2CSR273001R1205	852902			0.625	1
			25	DS203 M AC-B25/0.03	2CSR273001R1255	853008			0.625	1
			32	DS203 M AC-B32/0.03	2CSR273001R1325	853107			0.625	1
			40	DS203 M AC-B40/0.03	2CSR273001R1405	853206			0.625	1
			50 ①	DS203 M AC-B50/0.03	2CSR273001R1505	853305			0.775	1
			63 ①	DS203 M AC-B63/0.03	2CSR273001R1635	853404			0.775	1

4	AC	30	6	DS204 M AC-B6/0.03	2CSR274001R1065	853503			0.775	1
			10	DS204 M AC-B10/0.03	2CSR274001R1105	853602			0.775	1
			13	DS204 M AC-B13/0.03	2CSR274001R1135	853701			0.775	1
			16	DS204 M AC-B16/0.03	2CSR274001R1165	853800			0.775	1
			20	DS204 M AC-B20/0.03	2CSR274001R1205	853909			0.775	1
			25	DS204 M AC-B25/0.03	2CSR274001R1255	854005			0.775	1
			32	DS204 M AC-B32/0.03	2CSR274001R1325	854104			0.775	1
			40	DS204 M AC-B40/0.03	2CSR274001R1405	854203			0.775	1
			50 ①	DS204 M AC-B50/0.03	2CSR274001R1505	854302			0.925	1
			63 ①	DS204 M AC-B63/0.03	2CSR274001R1635	854401			0.925	1

① provided with additional terminals for remote tripping

**C**

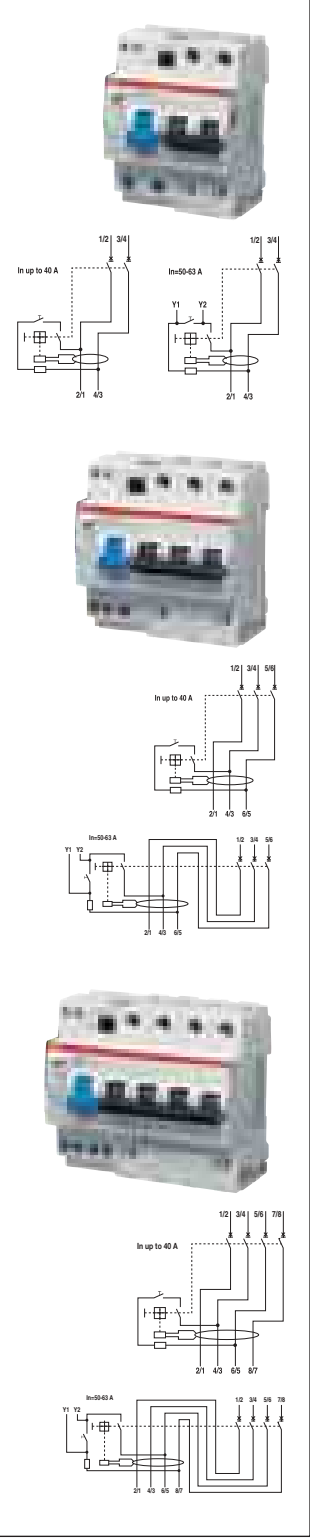
**DS 200 M AC type, C characteristic**

Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

Icn=10 kA



Number of poles	Type/class	Rated residual current IΔn mA	Rated current In A	Order details Type code	Order code	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
2	AC	30	6	DS202 M AC-C6/0.03	2CSR272001R1064	851509			0.475	1
			10	DS202 M AC-C10/0.03	2CSR272001R1104	851608			0.475	1
			13	DS202 M AC-C13/0.03	2CSR272001R1134	851707			0.475	1
			16	DS202 M AC-C16/0.03	2CSR272001R1164	851806			0.475	1
			20	DS202 M AC-C20/0.03	2CSR272001R1204	851905			0.475	1
			25	DS202 M AC-C25/0.03	2CSR272001R1254	852001			0.475	1
			32	DS202 M AC-C32/0.03	2CSR272001R1324	852100			0.475	1
			40	DS202 M AC-C40/0.03	2CSR272001R1404	852209			0.475	1
			50 ①	DS202 M AC-C50/0.03	2CSR272001R1504	852308			0.475	1
			63 ①	DS202 M AC-C63/0.03	2CSR272001R1634	852407			0.475	1
3	AC	30	6	DS203 M AC-C6/0.03	2CSR273001R1064	852506			0.625	1
			10	DS203 M AC-C10/0.03	2CSR273001R1104	852605			0.625	1
			13	DS203 M AC-C13/0.03	2CSR273001R1134	852704			0.625	1
			16	DS203 M AC-C16/0.03	2CSR273001R1164	852803			0.625	1
			20	DS203 M AC-C20/0.03	2CSR273001R1204	852902			0.625	1
			25	DS203 M AC-C25/0.03	2CSR273001R1254	853008			0.625	1
			32	DS203 M AC-C32/0.03	2CSR273001R1324	853107			0.625	1
			40	DS203 M AC-C40/0.03	2CSR273001R1404	853206			0.625	1
			50 ①	DS203 M AC-C50/0.03	2CSR273001R1504	853305			0.775	1
			63 ①	DS203 M AC-C63/0.03	2CSR273001R1634	853404			0.775	1
4	AC	30	6	DS204 M AC-C6/0.03	2CSR274001R1064	853503			0.775	1
			10	DS204 M AC-C10/0.03	2CSR274001R1104	853602			0.775	1
			13	DS204 M AC-C13/0.03	2CSR274001R1134	853701			0.775	1
			16	DS204 M AC-C16/0.03	2CSR274001R1164	853800			0.775	1
			20	DS204 M AC-C20/0.03	2CSR274001R1204	853909			0.775	1
			25	DS204 M AC-C25/0.03	2CSR274001R1254	854005			0.775	1
			32	DS204 M AC-C32/0.03	2CSR274001R1324	854104			0.775	1
			40	DS204 M AC-C40/0.03	2CSR274001R1404	854203			0.775	1
			50 ①	DS204 M AC-C50/0.03	2CSR274001R1504	854302			0.925	1
			63 ①	DS204 M AC-C63/0.03	2CSR274001R1634	854401			0.925	1

① provided with additional terminals for remote tripping

B

DS 200 M A type, B characteristic

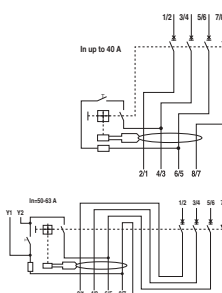
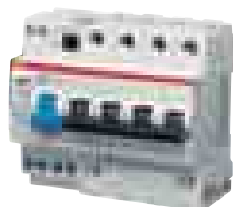
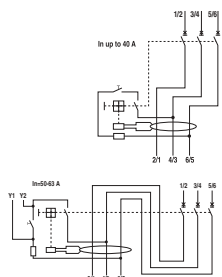
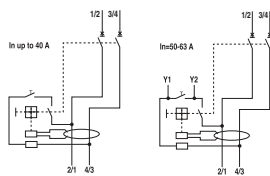
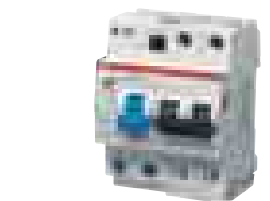
Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

I<sub>cn</sub>=10 kA

3



Number of poles	Type/class	Rated residual current I <sub>Δn</sub> mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				Type code	Order code					
2	A	30	6	DS202 M A-B6/0.03	2CSR272101R1065	845508			0.475	1
			10	DS202 M A-B10/0.03	2CSR272101R1105	845607			0.475	1
			13	DS202 M A-B13/0.03	2CSR272101R1135	845706			0.475	1
			16	DS202 M A-B16/0.03	2CSR272101R1165	845805			0.475	1
			20	DS202 M A-B20/0.03	2CSR272101R1205	845904			0.475	1
			25	DS202 M A-B25/0.03	2CSR272101R1255	846000			0.475	1
			32	DS202 M A-B32/0.03	2CSR272101R1325	846109			0.475	1
			40	DS202 M A-B40/0.03	2CSR272101R1405	846208			0.475	1
			50 ①	DS202 M A-B50/0.03	2CSR272101R1505	846307			0.475	1
			63 ①	DS202 M A-B63/0.03	2CSR272101R1635	846406			0.475	1

3	A	30	6	DS203 M A-B6/0.03	2CSR273101R1065	846505			0.625	1
			10	DS203 M A-B10/0.03	2CSR273101R1105	846604			0.625	1
			13	DS203 M A-B13/0.03	2CSR273101R1135	846703			0.625	1
			16	DS203 M A-B16/0.03	2CSR273101R1165	846802			0.625	1
			20	DS203 M A-B20/0.03	2CSR273101R1205	846901			0.625	1
			25	DS203 M A-B25/0.03	2CSR273101R1255	847007			0.625	1
			32	DS203 M A-B32/0.03	2CSR273101R1325	847106			0.625	1
			40	DS203 M A-B40/0.03	2CSR273101R1405	847205			0.625	1
			50 ①	DS203 M A-B50/0.03	2CSR273101R1505	847304			0.775	1
			63 ①	DS203 M A-B63/0.03	2CSR273101R1635	847403			0.775	1

4	A	30	6	DS204 M A-B6/0.03	2CSR274101R1065	847502			0.775	1
			10	DS204 M A-B10/0.03	2CSR274101R1105	847601			0.775	1
			13	DS204 M A-B13/0.03	2CSR274101R1135	847700			0.775	1
			16	DS204 M A-B16/0.03	2CSR274101R1165	847809			0.775	1
			20	DS204 M A-B20/0.03	2CSR274101R1205	847908			0.775	1
			25	DS204 M A-B25/0.03	2CSR274101R1255	848004			0.775	1
			32	DS204 M A-B32/0.03	2CSR274101R1325	848103			0.775	1
			40	DS204 M A-B40/0.03	2CSR274101R1405	848202			0.775	1
			50 ①	DS204 M A-B50/0.03	2CSR274101R1505	848301			0.925	1
			63 ①	DS204 M A-B63/0.03	2CSR274101R1635	848400			0.925	1

① provided with additional terminals for remote tripping

**C**

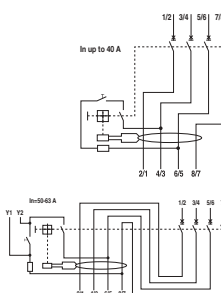
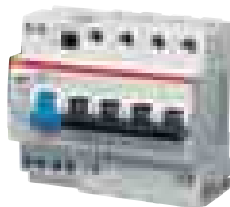
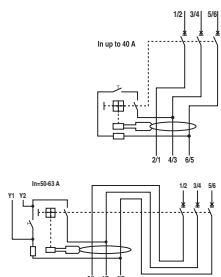
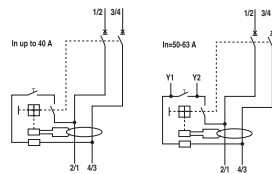
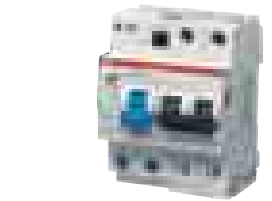
**DS 200 M A type, C characteristic**

Function: protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts; command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

Icn=10 kA



Number of poles	Type/class	Rated residual current IΔn mA	Rated current In A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
				Type code	Order code					
2	A	30	6	<b>DS202 M A-C6/0.03</b>	2CSR272101R1064	<b>848509</b>			0.475	1
			10	<b>DS202 M A-C10/0.03</b>	2CSR272101R1104	<b>848608</b>			0.475	1
			13	<b>DS202 M A-C13/0.03</b>	2CSR272101R1134	<b>848707</b>			0.475	1
			16	<b>DS202 M A-C16/0.03</b>	2CSR272101R1164	<b>848806</b>			0.475	1
			20	<b>DS202 M A-C20/0.03</b>	2CSR272101R1204	<b>848905</b>			0.475	1
			25	<b>DS202 M A-C25/0.03</b>	2CSR272101R1254	<b>849001</b>			0.475	1
			32	<b>DS202 M A-C32/0.03</b>	2CSR272101R1324	<b>849100</b>			0.475	1
			40	<b>DS202 M A-C40/0.03</b>	2CSR272101R1404	<b>849209</b>			0.475	1
			50 ①	<b>DS202 M A-C50/0.03</b>	2CSR272101R1504	<b>849308</b>			0.475	1
			63 ①	<b>DS202 M A-C63/0.03</b>	2CSR272101R1634	<b>849407</b>			0.475	1

3	A	30	6	<b>DS203 M A-C6/0.03</b>	2CSR273101R1064	<b>849506</b>			0.625	1
			10	<b>DS203 M A-C10/0.03</b>	2CSR273101R1104	<b>849605</b>			0.625	1
			13	<b>DS203 M A-C13/0.03</b>	2CSR273101R1134	<b>849704</b>			0.625	1
			16	<b>DS203 M A-C16/0.03</b>	2CSR273101R1164	<b>849803</b>			0.625	1
			20	<b>DS203 M A-C20/0.03</b>	2CSR273101R1204	<b>849902</b>			0.625	1
			25	<b>DS203 M A-C25/0.03</b>	2CSR273101R1254	<b>850007</b>			0.625	1
			32	<b>DS203 M A-C32/0.03</b>	2CSR273101R1324	<b>850106</b>			0.625	1
			40	<b>DS203 M A-C40/0.03</b>	2CSR273101R1404	<b>850205</b>			0.625	1
			50 ①	<b>DS203 M A-C50/0.03</b>	2CSR273101R1504	<b>850304</b>			0.775	1
			63 ①	<b>DS203 M A-C63/0.03</b>	2CSR273101R1634	<b>850403</b>			0.775	1

4	A	30	6	<b>DS204 M A-C6/0.03</b>	2CSR274101R1064	<b>850502</b>			0.775	1
			10	<b>DS204 M A-C10/0.03</b>	2CSR274101R1104	<b>850601</b>			0.775	1
			13	<b>DS204 M A-C13/0.03</b>	2CSR274101R1134	<b>850700</b>			0.775	1
			16	<b>DS204 M A-C16/0.03</b>	2CSR274101R1164	<b>850809</b>			0.775	1
			20	<b>DS204 M A-C20/0.03</b>	2CSR274101R1204	<b>850908</b>			0.775	1
			25	<b>DS204 M A-C25/0.03</b>	2CSR274101R1254	<b>851004</b>			0.775	1
			32	<b>DS204 M A-C32/0.03</b>	2CSR274101R1324	<b>851103</b>			0.775	1
			40	<b>DS204 M A-C40/0.03</b>	2CSR274101R1404	<b>851202</b>			0.775	1
			50 ①	<b>DS204 M A-C50/0.03</b>	2CSR274101R1504	<b>851301</b>			0.925	1
			63 ①	<b>DS204 M A-C63/0.03</b>	2CSR274101R1634	<b>851400</b>			0.925	1

① provided with additional terminals for remote tripping



With the range of RCBOs DS 9.. 1P+N ABB is able to provide a protection solution for all type of single-phase circuits in modern applications.

All the RCBOs are characterized by an innovative design with a single red/green two-color operating lever and residual current trip signal on the front of the apparatus.

The DS 9.. range satisfies all protection requirements in two modules, offering the opportunity of choosing between three

different breaking capacities, five different sensitivities, and for each of these, the possibility of choosing between type A or type AC residual current protection.

The DS 9.. range consists of three series, DS 941, DS 951 and DS 971, with 4.5 kA, 6 kA and 10 kA respectively of breaking capacity.

Overload and short-circuit protection is provided by the same thermomagnetic component as the S 9.. MCBs range.

All RCBOs are insensitive to temporary surge currents generated by lightning, operations on the power network, interferences, etc.

It can be fitted with the same accessories of the S 9.. range, therefore permitting many different functions and configurations.

RCBO DS 271 is a particular combination of MCB+RCCB in a compact housing of only 1 module. It protects both people and lines and equipments.



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**3**

**TECHNICAL CHARACTERISTICS**

	Standards		
<b>Electrical features</b>	Type (wave form of the earth leakage sensed)		
	Poles		
	Rated current $I_n$		A
	Rated voltage $U_e$		V
	Insulation voltage $U_i$		
	Max. operating voltage of circuit test		V
	Min. operating voltage of circuit test		V
	Rated frequency		Hz
	Rated breaking capacity acc. to IEC/EN 61009	ultimate $I_{cn}$	A
	Rated breaking capacity acc. to IEC/EN 60947-2 1P+N @230 VAC, 2P, 3P, 4P @400 VAC	ultimate $I_{cu}$ service $I_{cs}$	kA
	Rated impulse withstand voltage (1.2/50) $U_{imp}$		kV
	Dielectric test voltage at ind. freq. for 1 min.		kV
	Overvoltage category		
	Thermomagnetic release characteristic	B: $3 I_n \leq I_m \leq 5 I_n$ C: $5 I_n \leq I_m \leq 10 I_n$	
	Surge current resistance acc. to VDE 0432 Part 2 (wave 8/20)		A
<b>Mechanical features</b>	Toggle		
	Electrical life		
	Mechanical life		
	Protection degree	housing terminals	
	Tropicalization acc. to IEC /EN 60068-2	humid heat constant climatic conditions variable climatic conditions	°C/RH °C/RH °C/RH
	Reference temperature for setting of thermal element		°C
	Ambient temperature (with daily average $\leq +35^\circ\text{C}$ )		°C
	Storage temperature		°C
<b>Installation</b>	Terminal type	top bottom	
	Terminal size top/bottom for cables	1P+N line side load side	mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>
	Tightening torque top/bottom	1P+N	N*m
	Mounting		
	Connection		
<b>Dimensions and weight</b>	Dimensions (H x D x W)	1P+N	mm
	Weight	1P+N	g
<b>Combination with auxiliary elements</b>	Combinable with:	auxiliary contact signal contact shunt trip undervoltage release	

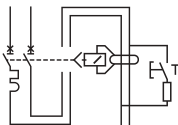


DS941 AC	DS941 A	DS951 AC	DS951 A	DS971 AC	DS971 A
IEC / EN 61009, IEC / EN 60947-2					
AC	A	AC	A	AC	A
6 ≤ In ≤ 40		1P+N		6 ≤ In ≤ 32	
		230-240			
		500			
		254			
		110			
		50...60			
4500		6000		10000	
6		10		10	
4.5		6		10	
		5			
		2.5			
		III, disconnector abilities			
		■			
		■			
		250			
		black sealable in ON-OFF position			
		10000			
		20000			
		IP4X			
		IP2X			
		28 cycles with 55/95...100			
		23/83 - 40/93 - 55/20			
		25/95 - 40/95			
		30			
		-25...+55			
		-40...+70			
		cage (shock protected)			
		cage (shock protected)			
		(rigid and flexible) up to 16/16			
		-			
		-			
		1.2			
		on DIN rail EN 60715 (35 mm) by means of fast clip device			
		from top and bottom			
		85 x 70 x 35.6			
		200			
		yes			
		yes			
		yes			
		yes			



4500 AC type

B



**DS 941 AC type, B characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads, especially in presence of big length cables (typical of single-phase terminal circuits).

Application: residential, commercial, industrial.

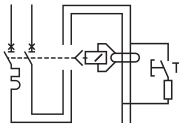
Standard: IEC/EN 61009 and IEC/EN 60947-2

$I_{cn}=4.5$  kA

Number of poles	Rated residual current	Rated current	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit	
	$I_{\Delta n}$ mA	In A	Type code	Order code	EAN		kg	pc.	
1 + N	30	6	DS 941 B6 30MA AC	16020007	403005		0.200	5	
		10	DS 941 B10 30MA AC	16020015	403104		0.200	5	
		16	DS 941 B16 30MA AC	16020023	403203		0.200	5	
		20	DS 941 B20 30MA AC	16020031	403302		0.200	5	
		25	DS 941 B25 30MA AC	16020049	403401		0.200	5	
		32	DS 941 B32 30MA AC	16020056	403500		0.200	5	
	100	30	40	DS 941 B40 30MA AC	16020064	403609		0.200	5
			6	DS 941 B6 100MA AC	16020072	403708		0.200	5
			10	DS 941 B10 100MA AC	16020080	403807		0.200	5
			16	DS 941 B16 100MA AC	16020098	403906		0.200	5
			20	DS 941 B20 100MA AC	16020106	404002		0.200	5
			25	DS 941 B25 100MA AC	16020114	404101		0.200	5
	300	30	32	DS 941 B32 100MA AC	16020122	404200		0.200	5
			40	DS 941 B40 100MA AC	16020130	404309		0.200	5
			6	DS 941 B6 300MA AC	16020148	404408		0.200	5
			10	DS 941 B10 300MA AC	16020155	404507		0.200	5
			16	DS 941 B16 300MA AC	16020163	404606		0.200	5
			20	DS 941 B20 300MA AC	16020171	404705		0.200	5
	500	30	25	DS 941 B25 300MA AC	16020189	404804		0.200	5
			32	DS 941 B32 300MA AC	16020197	404903		0.200	5
			40	DS 941 B40 300MA AC	16020205	405009		0.200	5
			6	DS 941 B6 500MA AC	16020213	405108		0.200	5
			10	DS 941 B10 500MA AC	16020221	405207		0.200	5
			16	DS 941 B16 500MA AC	16020239	405306		0.200	5
1000	30	20	DS 941 B20 500MA AC	16020247	405405		0.200	5	
		25	DS 941 B25 500MA AC	16020254	405504		0.200	5	
		32	DS 941 B32 500MA AC	16020262	405603		0.200	5	
		40	DS 941 B40 500MA AC	16020270	405702		0.200	5	
		6	DS 941 B6 1000MA AC	16020288	405801		0.200	5	
		10	DS 941 B10 1000MA AC	16020296	405900		0.200	5	
		16	DS 941 B16 1000MA AC	16020304	406006		0.200	5	
		20	DS 941 B20 1000MA AC	16020312	406105		0.200	5	
1000	30	25	DS 941 B25 1000MA AC	16020320	406204		0.200	5	
		32	DS 941 B32 1000MA AC	16020338	406303		0.200	5	
		40	DS 941 B40 1000MA AC	16020346	406402		0.200	5	

4500 AC  type

C



**DS 941 AC type, C characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads.

Application: residential, commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

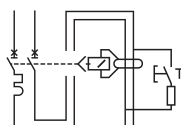
$I_{cn}=4.5$  kA

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current $I_n$ A	Order details Type code	Order code	Bhn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.	
1 + N	30	6	DS 941 C6 30MA AC	16020395	406501			0.200	5	
		10	DS 941 C10 30MA AC	16020403	406600			0.200	5	
		16	DS 941 C16 30MA AC	16020411	406709			0.200	5	
		20	DS 941 C20 30MA AC	16020429	406808			0.200	5	
		25	DS 941 C25 30MA AC	16020437	406907			0.200	5	
		32	DS 941 C32 30MA AC	16020445	407003			0.200	5	
	100	30	40	DS 941 C40 30MA AC	16020452	407102			0.200	5
			6	DS 941 C6 100MA AC	16020460	407201			0.200	5
			10	DS 941 C10 100MA AC	16020478	407300			0.200	5
			16	DS 941 C16 100MA AC	16020486	407409			0.200	5
			20	DS 941 C20 100MA AC	16020494	407508			0.200	5
			25	DS 941 C25 100MA AC	16020502	407607			0.200	5
	300	100	32	DS 941 C32 100MA AC	16020510	407706			0.200	5
			40	DS 941 C40 100MA AC	16020528	407805			0.200	5
			6	DS 941 C6 300MA AC	16020536	407904			0.200	5
			10	DS 941 C10 300MA AC	16020544	408000			0.200	5
			16	DS 941 C16 300MA AC	16020551	408109			0.200	5
			20	DS 941 C20 300MA AC	16020569	408208			0.200	5
	500	300	25	DS 941 C25 300MA AC	16020577	408307			0.200	5
			32	DS 941 C32 300MA AC	16020585	408406			0.200	5
			40	DS 941 C40 300MA AC	16020593	408505			0.200	5
			6	DS 941 C6 500MA AC	16020601	408604			0.200	5
			10	DS 941 C10 500MA AC	16020619	408703			0.200	5
			16	DS 941 C16 500MA AC	16020627	408802			0.200	5
1000	500	20	DS 941 C20 500MA AC	16020635	408901			0.200	5	
		25	DS 941 C25 500MA AC	16020643	409007			0.200	5	
		32	DS 941 C32 500MA AC	16020650	409106			0.200	5	
		40	DS 941 C40 500MA AC	16020668	409205			0.200	5	
		6	DS 941 C6 1000MA AC	16020825	409304			0.200	5	
		10	DS 941 C10 1000MA AC	16020833	409403			0.200	5	
	1000	16	DS 941 C16 1000MA AC	16020841	409502			0.200	5	
		20	DS 941 C20 1000MA AC	16020858	409601			0.200	5	
		25	DS 941 C25 1000MA AC	16020866	409700			0.200	5	
		32	DS 941 C32 1000MA AC	16020874	409809			0.200	5	
		40	DS 941 C40 1000MA AC	16020882	409908			0.200	5	

3

4500 A  type

B



### DS 941 A type, B characteristic

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads, especially in presence of big length cables (typical of single-phase terminal circuits).

Application: residential, commercial, industrial.

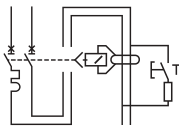
Standard: IEC/EN 61009 and IEC/EN 60947-2

$I_{cn}=4.5$  kA

Number of poles	Rated residual current	Rated current	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
	$I_{\Delta n}$ mA	In A	Type code	Order code	EAN		kg	pc.
1 + N	10	6	DS 941 B6-10MA A	16023555	424000		0.200	5
		10	DS 941 B10-10MA A	16023563	424109		0.200	5
		16	DS 941 B16-10MA A	16023571	424208		0.200	5
	30	6	DS 941 B6-30MA A	16023753	424307		0.200	5
		10	DS 941 B10 30MA A	16023761	424406		0.200	5
		16	DS 941 B16 30MA A	16023779	424505		0.200	5
		20	DS 941 B20 30MA A	16023787	424604		0.200	5
		25	DS 941 B25 30MA A	16023795	424703		0.200	5
		32	DS 941 B32 30MA A	16023803	424802		0.200	5
		40	DS 941 B40 30MA A	16023811	424901		0.200	5
	100	6	DS 941 B6-100MA A	16023829	425007		0.200	5
		10	DS 941 B10-100MA A	16023837	425106		0.200	5
		16	DS 941 B16-100MA A	16023845	425205		0.200	5
		20	DS 941 B20-100MA A	16023852	425304		0.200	5
		25	DS 941 B25-100MA A	16023860	425403		0.200	5
		32	DS 941 B32-100MA A	16023878	425502		0.200	5
	300	6	DS 941 B6-300MA A	16023886	425601		0.200	5
		10	DS 941 B10 300MA A	16023894	425700		0.200	5
		16	DS 941 B16 300MA A	16023902	425809		0.200	5
		20	DS 941 B16 300MA A	16023910	425908		0.200	5
		25	DS 941 B20 300MA A	16023928	426004		0.200	5
		32	DS 941 B25 300MA A	16023936	426103		0.200	5
		40	DS 941 B32 300MA A	16023944	426202		0.200	5
	500	6	DS 941 B40 300MA A	16023951	426301		0.200	5
6		DS 941 B6-500MA A	16023969	426400		0.200	5	
10		DS 941 B10-500MA A	16023977	426509		0.200	5	
16		DS 941 B16-500MA A	16023985	426608		0.200	5	
20		DS 941 B20-500MA A	16023993	426707		0.200	5	
25		DS 941 B25-500MA A	16024009	426806		0.200	5	
32		DS 941 B32-500MA A	16024017	426905		0.200	5	
	40	DS 941 B40-500MA A	16024025	427001		0.200	5	

4500 A type

C



### DS 941 A type, C characteristic

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30\text{ mA}$ ); command and isolation of resistive and inductive loads.

Application: residential, commercial, industrial.

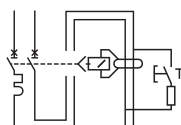
Standard: IEC/EN 61009 and IEC/EN 60947-2

$I_{cn}=4.5\text{ kA}$

Number of poles	Rated residual current $I_{\Delta n}\text{ mA}$	Rated current $I_n\text{ A}$	Order details  Type code	Order code	Bbn 8012542  EAN	Price 1 piece	Price group	Weight 1 piece  kg	Pack unit  pc.
1 + N	30	6	DS 941 C6 30MA A	16024108	427803			0.200	5
		10	DS 941 C10 30MA A	16024116	427902			0.200	5
		16	DS 941 C16 30MA A	16024124	428008			0.200	5
		20	DS 941 C20 30MA A	16024132	428107			0.200	5
		25	DS 941 C25 30MA A	16024140	428206			0.200	5
		32	DS 941 C32 30MA A	16024157	428305			0.200	5
		40	DS 941 C40 30MA A	16024165	428404			0.200	5
		100	6	DS 941 C6-100MA A	16024173	428503			0.200
	10		DS 941 C10-100MA A	16024181	428602			0.200	5
	16		DS 941 C16-100MA A	16024199	428701			0.200	5
	20		DS 941 C20-100MA A	16024207	428800			0.200	5
	25		DS 941 C25-100MA A	16024215	428909			0.200	5
	32		DS 941 C32-100MA A	16024223	429005			0.200	5
	300	6	DS 941 C6 300MA A	16024249	429203			0.200	5
		10	DS 941 C10 300MA A	16024256	429302			0.200	5
		16	DS 941 C16 300MA A	16024264	429401			0.200	5
		20	DS 941 C20 300MA A	16024272	429500			0.200	5
		25	DS 941 C25 300MA A	16024280	429609			0.200	5
		32	DS 941 C32 300MA A	16024298	429708			0.200	5
	500	6	DS 941 C6-500MA A	16024314	429906			0.200	5
10		DS 941 C10-500MA A	16024322	430001			0.200	5	
16		DS 941 C16-500MA A	16024330	430100			0.200	5	
20		DS 941 C20-500MA A	16024348	430209			0.200	5	
25		DS 941 C25-500MA A	16024355	430308			0.200	5	
32		DS 941 C32-500MA A	16024363	430407			0.200	5	
		40	DS 941 C40-500MA A	16024371	430506		0.200	5	

6000 AC type

B



**DS 951 AC type, B characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads, especially in presence of big length cables (typical of single-phase terminal circuits).

Application: residential, commercial, industrial.

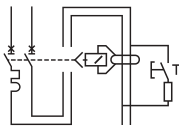
Standard: IEC/EN 61009 and IEC/EN 60947-2

$I_{cn}=6$  kA

Number of poles	Rated residual current	Rated current	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit	
	$I_{\Delta n}$ mA	In A	Type code	Order code	EAN		kg	pc.	
1 + N	30	6	DS 951 B6-30MA AC	16021005	410003		0.200	5	
		10	DS 951 B10-30MA AC	16021013	410102		0.200	5	
		16	DS 951 B16-30MA AC	16021021	410201		0.200	5	
		20	DS 951 B20-30MA AC	16021039	410300		0.200	5	
		25	DS 951 B25-30MA AC	16021047	410409		0.200	5	
		32	DS 951 B32-30MA AC	16021054	410508		0.200	5	
	100	30	40	DS 951 B40-30MA AC	16021062	410607		0.200	5
			6	DS 951 B6-100MA AC	16021070	410706		0.200	5
			10	DS 951 B10-100MA AC	16021088	410805		0.200	5
			16	DS 951 B16-100MA AC	16021096	410904		0.200	5
			20	DS 951 B20-100MA AC	16021104	411000		0.200	5
			25	DS 951 B25-100MA AC	16021112	411109		0.200	5
	300	30	32	DS 951 B32-100MA AC	16021120	411208		0.200	5
			40	DS 951 B40-100MA AC	16021138	411307		0.200	5
			6	DS 951 B6-300MA AC	16021146	411406		0.200	5
			10	DS 951 B10-300MA AC	16021153	411505		0.200	5
			16	DS 951 B16-300MA AC	16021161	411604		0.200	5
			20	DS 951 B20-300MA AC	16021179	411703		0.200	5
	500	30	25	DS 951 B25-300MA AC	16021187	411802		0.200	5
			32	DS 951 B32-300MA AC	16021195	411901		0.200	5
			40	DS 951 B40-300MA AC	16021203	412007		0.200	5
			6	DS 951 B6-500MA AC	16021211	412106		0.200	5
			10	DS 951 B10-500MA AC	16021229	412205		0.200	5
			16	DS 951 B16-500MA AC	16021237	412304		0.200	5
1000	30	20	DS 951 B20-500MA AC	16021245	412403		0.200	5	
		25	DS 951 B25-500MA AC	16021252	412502		0.200	5	
		32	DS 951 B32-500MA AC	16021260	412601		0.200	5	
		40	DS 951 B40-500MA AC	16021278	412700		0.200	5	
		6	DS 951 B6-1000MA AC	16021286	412809		0.200	5	
		10	DS 951 B10-1000MA AC	16021294	412908		0.200	5	
		16	DS 951 B16-1000MA AC	16021302	413004		0.200	5	
		20	DS 951 B20-1000MA AC	16021310	413103		0.200	5	
1000	30	25	DS 951 B25-1000MA AC	16021328	413202		0.200	5	
		32	DS 951 B32-1000MA AC	16021336	413301		0.200	5	
		40	DS 951 B40-1000MA AC	16021344	413400		0.200	5	

6000 AC type

C



**DS 951 AC type, C characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads.

Application: residential, commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

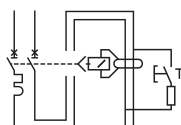
$I_{cn}=6$  kA

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current $I_n$ A	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.	
1 + N	30	6	DS 951 C6-30MA AC	16021351	413509			0.200	5	
		10	DS 951 C10-30MA AC	16021369	413608			0.200	5	
		16	DS 951 C16-30MA AC	16021377	413707			0.200	5	
		20	DS 951 C20-30MA AC	16021385	413806			0.200	5	
		25	DS 951 C25-30MA AC	16021393	413905			0.200	5	
		32	DS 951 C32-30MA AC	16021401	414001			0.200	5	
	100	30	40	DS 951 C40-30MA AC	16021419	414100			0.200	5
			6	DS 951 C6-100MA AC	16021427	414209			0.200	5
			10	DS 951 C10-100MA AC	16021435	414308			0.200	5
			16	DS 951 C16-100MA AC	16021443	414407			0.200	5
			20	DS 951 C20-100MA AC	16021450	414506			0.200	5
			25	DS 951 C25-100MA AC	16021468	414605			0.200	5
	300	30	32	DS 951 C32-100MA AC	16021476	414704			0.200	5
			40	DS 951 C40-100MA AC	16021484	414803			0.200	5
			6	DS 951 C6-300MA AC	16021492	414902			0.200	5
			10	DS 951 C10-300MA AC	16021500	415008			0.200	5
			16	DS 951 C16-300MA AC	16021518	415107			0.200	5
			20	DS 951 C20-300MA AC	16021526	415206			0.200	5
	500	30	25	DS 951 C25-300MA AC	16021534	415305			0.200	5
			32	DS 951 C32-300MA AC	16021542	415404			0.200	5
			40	DS 951 C40-300MA AC	16021559	415503			0.200	5
			6	DS 951 C6-500MA AC	16021567	415602			0.200	5
			10	DS 951 C10-500MA AC	16021575	415701			0.200	5
			16	DS 951 C16-500MA AC	16021583	415800			0.200	5
1000	30	20	DS 951 C20-500MA AC	16021591	415909			0.200	5	
		25	DS 951 C25-500MA AC	16021609	416005			0.200	5	
		32	DS 951 C32-500MA AC	16021617	416104			0.200	5	
		40	DS 951 C40-500MA AC	16021625	416203			0.200	5	
		6	DS 951 C6-1000MA AC	16021633	416302			0.200	5	
		10	DS 951 C10-1000MA AC	16021641	416401			0.200	5	
1000	30	16	DS 951 C16-1000MA AC	16021658	416500			0.200	5	
		20	DS 951 C20-1000MA AC	16021666	416609			0.200	5	
		25	DS 951 C25-1000MA AC	16021674	416708			0.200	5	
		32	DS 951 C32-1000MA AC	16021682	416807			0.200	5	
1000	30	40	DS 951 C40-1000MA AC	16021690	416906			0.200	5	

3

6000 A type

B



### DS 951 A type, B characteristic

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads, especially in presence of big length cables (typical of single-phase terminal circuits).

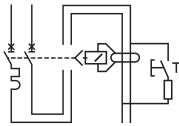
Application: residential, commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

$I_{cn}=6$  kA

Number of poles	Rated residual current C	Rated current	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
	$I_{\Delta n}$ mA	In A	Type code	Order code	EAN		kg	pc.
1 + N	30	6	DS 951 B6-30MA A	16024751	431305		0.200	5
		10	DS 951 B10-30MA A	16024769	431404		0.200	5
		16	DS 951 B16-30MA A	16024777	431503		0.200	5
		20	DS 951 B20-30MA A	16024785	431602		0.200	5
		25	DS 951 B25-30MA A	16024793	431701		0.200	5
		32	DS 951 B32-30MA A	16024801	431800		0.200	5
		40	DS 951 B40-30MA A	16024819	431909		0.200	5
	100	6	DS 951 B6-100MA A	16024827	432005		0.200	5
		10	DS 951 B10-100MA A	16024835	432104		0.200	5
		16	DS 951 B16-100MA A	16024843	432203		0.200	5
		20	DS 951 B20-100MA A	16024850	432302		0.200	5
		25	DS 951 B25-100MA A	16024868	432401		0.200	5
		32	DS 951 B32-100MA A	16024876	432500		0.200	5
		40	DS 951 B40-100MA A	16024884	432609		0.200	5
	300	6	DS 951 B6-300MA A	16024892	432708		0.200	5
		10	DS 951 B10-300MA A	16024900	432807		0.200	5
		16	DS 951 B16-300MA A	16024918	432906		0.200	5
		20	DS 951 B20-300MA A	16024926	433002		0.200	5
		25	DS 951 B25-300MA A	16024934	433101		0.200	5
		32	DS 951 B32-300MA A	16024942	433200		0.200	5
40		DS 951 B40-300MA A	16024959	433309		0.200	5	
500	6	DS 951 B6-500MA A	16024967	433408		0.200	5	
	10	DS 951 B10-500MA A	16024975	433507		0.200	5	
	16	DS 951 B16-500MA A	16024983	433606		0.200	5	
	20	DS 951 B20-500MA A	16024991	433705		0.200	5	
	25	DS 951 B25-500MA A	16025006	433804		0.200	5	
	32	DS 951 B32-500MA A	16025014	433903		0.200	5	
	40	DS 951 B40-500MA A	16025022	434009		0.200	5	

**C**



**DS 951 A type, C characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I\Delta n=30\text{ mA}$ ); command and isolation of resistive and inductive loads.

**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61009 and IEC/EN 60947-2**

**Icn=6 kA**

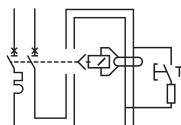
Number of poles	Rated residual current $I\Delta n\text{ mA}$	Rated current $I_n\text{ A}$	Order details  Type code	Order code	Bbn 8012542  EAN	Price 1 piece	Price group	Weight 1 piece  kg	Pack unit  pc.
<b>1 + N</b>	30	6	<b>DS 951 C6-30MA A</b>	16025154	<b>434801</b>			0.200	5
		10	<b>DS 951 C10-30MA A</b>	16025162	<b>434900</b>			0.200	5
		16	<b>DS 951 C16-30MA A</b>	16025170	<b>435006</b>			0.200	5
		20	<b>DS 951 C20-30MA A</b>	16025188	<b>435105</b>			0.200	5
		25	<b>DS 951 C25-30MA A</b>	16025196	<b>435204</b>			0.200	5
		32	<b>DS 951 C32-30MA A</b>	16025204	<b>435303</b>			0.200	5
	100	40	<b>DS 951 C40-30MA A</b>	16025212	<b>435402</b>			0.200	5
		6	<b>DS 951 C6-100MA A</b>	16025220	<b>435501</b>			0.200	5
		10	<b>DS 951 C10-100MA A</b>	16025238	<b>435600</b>			0.200	5
		16	<b>DS 951 C16-100MA A</b>	16025246	<b>435709</b>			0.200	5
		20	<b>DS 951 C20-100MA A</b>	16025253	<b>435808</b>			0.200	5
		25	<b>DS 951 C25-100MA A</b>	16025261	<b>435907</b>			0.200	5
	300	32	<b>DS 951 C32-100MA A</b>	16025279	<b>436003</b>			0.200	5
		40	<b>DS 951 C40-100MA A</b>	16025287	<b>436102</b>			0.200	5
		6	<b>DS 951 C6-300MA A</b>	16025295	<b>436201</b>			0.200	5
		10	<b>DS 951 C10-300MA A</b>	16025303	<b>436300</b>			0.200	5
		16	<b>DS 951 C16-300MA A</b>	16025311	<b>436409</b>			0.200	5
		20	<b>DS 951 C20-300MA A</b>	16025329	<b>436508</b>			0.200	5
	500	25	<b>DS 951 C25-300MA A</b>	16025337	<b>436607</b>			0.200	5
		32	<b>DS 951 C32-300MA A</b>	16025345	<b>436706</b>			0.200	5
		40	<b>DS 951 C40-300MA A</b>	16025352	<b>436805</b>			0.200	5
		6	<b>DS 951 C6-500MA A</b>	16025360	<b>436904</b>			0.200	5
		10	<b>DS 951 C10-500MA A</b>	16025378	<b>437000</b>			0.200	5
		16	<b>DS 951 C16-500MA A</b>	16025386	<b>437109</b>			0.200	5
	20	<b>DS 951 C20-500MA A</b>	16025394	<b>437208</b>			0.200	5	
	25	<b>DS 951 C25-500MA A</b>	16025402	<b>437307</b>			0.200	5	
	32	<b>DS 951 C32-500MA A</b>	16025410	<b>437406</b>			0.200	5	
	40	<b>DS 951 C40-500MA A</b>	16025428	<b>437505</b>			0.200	5	

**3**



10000 AC  type

**B**



**DS 971 AC type, B characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads, especially in presence of big length cables (typical of single-phase terminal circuits).

Application: residential, commercial, industrial.

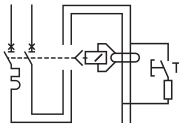
Standard: IEC/EN 61009 and IEC/EN 60947-2

$I_{cn}=10$  kA

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
			Type code	Order code	EAN		kg	pc.
1 + N	30	6	DS 971 B6-30MA AC	16021955	417002		0.200	5
		10	DS 971 B10-30MA AC	16021963	417101		0.200	5
		16	DS 971 B16-30MA AC	16021971	417200		0.200	5
		20	DS 971 B20-30MA AC	16021989	417309		0.200	5
		25	DS 971 B25-30MA AC	16021997	417408		0.200	5
		32	DS 971 B32-30MA AC	16022003	417507		0.200	5
	100	6	DS 971 B6-100MA AC	16022029	417705		0.200	5
		10	DS 971 B10-100MA AC	16022037	417804		0.200	5
		16	DS 971 B16-100MA AC	16022045	417903		0.200	5
		20	DS 971 B20-100MA AC	16022052	418009		0.200	5
		25	DS 971 B25-100MA AC	16022060	418108		0.200	5
		32	DS 971 B32-100MA AC	16022078	418207		0.200	5
	300	6	DS 971 B6-300MA AC	16022094	418405		0.200	5
		10	DS 971 B10-300MA AC	16022102	418504		0.200	5
		16	DS 971 B16-300MA AC	16022110	418603		0.200	5
		20	DS 971 B20-300MA AC	16022128	418702		0.200	5
		25	DS 971 B25-300MA AC	16022136	418801		0.200	5
		32	DS 971 B32-300MA AC	16022144	418900		0.200	5
500	6	DS 971 B6-500MA AC	16022169	419105		0.200	5	
	10	DS 971 B10-500MA AC	16022177	419204		0.200	5	
	16	DS 971 B16-500MA AC	16022185	419303		0.200	5	
	20	DS 971 B20-500MA AC	16022193	419402		0.200	5	
	25	DS 971 B25-500MA AC	16022201	419501		0.200	5	
	32	DS 971 B32-500MA AC	16022219	419600		0.200	5	
1000	6	DS 971 B6-1000MA AC	16022235	419808		0.200	5	
	10	DS 971 B10-1000MA AC	16022243	419907		0.200	5	
	16	DS 971 B16-1000MA AC	16022250	420002		0.200	5	
	20	DS 971 B20-1000MA AC	16022268	420101		0.200	5	
	25	DS 971 B25-1000MA AC	16022276	420200		0.200	5	
	32	DS 971 B32-1000MA AC	16022284	420309		0.200	5	

10000 AC  type

C



**DS 971 AC type, C characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30\text{ mA}$ ); command and isolation of resistive and inductive loads.

Application: residential, commercial, industrial.

Standard: IEC/EN 61009 and IEC/EN 60947-2

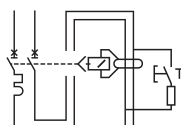
$I_{cn}=10\text{ kA}$

Number of poles	Rated residual current $I_{\Delta n}\text{ mA}$	Rated current $I_n\text{ A}$	Order details  Type code	Order code	Bbn 8012542  EAN	Price 1 piece	Price group	Weight 1 piece  kg	Pack unit  pc.
1 + N	30	6	DS 971 C6-30MA AC	16023159	420507			0.200	5
		10	DS 971 C10-30MA AC	16023167	420606			0.200	5
		16	DS 971 C16-30MA AC	16023175	420705			0.200	5
		20	DS 971 C20-30MA AC	16023183	420804			0.200	5
		25	DS 971 C25-30MA AC	16023191	420903			0.200	5
		32	DS 971 C32-30MA AC	16023209	421009			0.200	5
	100	6	DS 971 C6-100MA AC	16023225	421207			0.200	5
		10	DS 971 C10-100MA AC	16023233	421306			0.200	5
		16	DS 971 C16-100MA AC	16023241	421405			0.200	5
		20	DS 971 C20-100MA AC	16023258	421504			0.200	5
		25	DS 971 C25-100MA AC	16023266	421603			0.200	5
		32	DS 971 C32-100MA AC	16023274	421702			0.200	5
	300	6	DS 971 C6-300MA AC	16023290	421900			0.200	5
		10	DS 971 C10-300MA AC	16023308	422006			0.200	5
		16	DS 971 C16-300MA AC	16023316	422105			0.200	5
		20	DS 971 C20-300MA AC	16023324	422204			0.200	5
		25	DS 971 C25-300MA AC	16023332	422303			0.200	5
		32	DS 971 C32-300MA AC	16023340	422402			0.200	5
500	6	DS 971 C6-500MA AC	16023365	422600			0.200	5	
	10	DS 971 C10-500MA AC	16023373	422709			0.200	5	
	16	DS 971 C16-500MA AC	16023381	422808			0.200	5	
	20	DS 971 C20-500MA AC	16023399	422907			0.200	5	
	25	DS 971 C25-500MA AC	16023407	423003			0.200	5	
	32	DS 971 C32-500MA AC	16023415	423102			0.200	5	
1000	6	DS 971 C6-1000MA AC	16023431	423300			0.200	5	
	10	DS 971 C10-1000MA AC	16023449	423409			0.200	5	
	16	DS 971 C16-1000MA AC	16023456	423508			0.200	5	
	20	DS 971 C20-1000MA AC	16023464	423607			0.200	5	
	25	DS 971 C25-1000MA AC	16023472	423706			0.200	5	
	32	DS 971 C32-1000MA AC	16023480	423805			0.200	5	

3

10000 A  type

**B**



**DS 971 A type, B characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads, especially in presence of big length cables (typical of single-phase terminal circuits).

Application: residential, commercial, industrial.

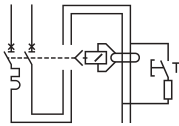
Standard: IEC/EN 61009 and IEC/EN 60947-2

$I_{cn}=10$  kA

Number of poles	Rated residual current	Rated current	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
	$I_{\Delta n}$ mA	In A	Type code	Order code	EAN		kg	pc.
1 + N	30	6	DS 971 B6-30MA A	16025758	438304		0.200	5
		10	DS 971 B10-30MA A	16025766	438403		0.200	5
		16	DS 971 B16-30MA A	16025774	438502		0.200	5
		20	DS 971 B20-30MA A	16025782	438601		0.200	5
		25	DS 971 B25-30MA A	16025790	438700		0.200	5
		32	DS 971 B32-30MA A	16025808	438809		0.200	5
	100	6	DS 971 B6-100MA A	16025824	439004		0.200	5
		10	DS 971 B10-100MA A	16025832	439103		0.200	5
		16	DS 971 B16-100MA A	16025840	439202		0.200	5
		20	DS 971 B20-100MA A	16025857	439301		0.200	5
		25	DS 971 B25-100MA A	16025865	439400		0.200	5
		32	DS 971 B32-100MA A	16025873	439509		0.200	5
	300	6	DS 971 B6-300MA A	16025899	439707		0.200	5
		10	DS 971 B10-300MA A	16025907	439806		0.200	5
		16	DS 971 B16-300MA A	16025915	439905		0.200	5
		20	DS 971 B20-300MA A	16025923	440000		0.200	5
		25	DS 971 B25-300MA A	16025931	440109		0.200	5
		32	DS 971 B32-300MA A	16025949	440208		0.200	5
500	6	DS 971 B6-500MA A	16025964	440406		0.200	5	
	10	DS 971 B10-500MA A	16025972	440505		0.200	5	
	16	DS 971 B16-500MA A	16025980	440604		0.200	5	
	20	DS 971 B20-500MA A	16025998	440703		0.200	5	
	25	DS 971 B25-500MA A	16026004	440802		0.200	5	
	32	DS 971 B32-500MA A	16026012	440901		0.200	5	

**10000 A**  type

**C**



**DS 971 A type, C characteristic**

Function: Protection in terminal single-phase circuit against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I\Delta n=30\text{ mA}$ ); command and isolation of resistive and inductive loads.

**Application: residential, commercial, industrial.**

**Standard: IEC/EN 61009 and IEC/EN 60947-2**

**Icn=10 kA**

Number of poles	Rated residual current $I\Delta n\text{ mA}$	Rated current $I_n\text{ A}$	Order details  Type code	Order code	Bbn 8012542  EAN	Price 1 piece	Price group	Weight 1 piece  kg	Pack unit  pc.
1 + N	30	6	<b>DS 971 C6-30MA A</b>	16026657	<b>441809</b>			0.200	5
		10	<b>DS 971 C10-30MA A</b>	16026665	<b>441908</b>			0.200	5
		16	<b>DS 971 C16-30MA A</b>	16026673	<b>442004</b>			0.200	5
		20	<b>DS 971 C20-30MA A</b>	16026681	<b>442103</b>			0.200	5
		25	<b>DS 971 C25-30MA A</b>	16026699	<b>442202</b>			0.200	5
		32	<b>DS 971 C32-30MA A</b>	16026707	<b>442301</b>			0.200	5
	100	6	<b>DS 971 C6-100MA A</b>	16026723	<b>442509</b>			0.200	5
		10	<b>DS 971 C10-100MA A</b>	16026731	<b>442608</b>			0.200	5
		16	<b>DS 971 C16-100MA A</b>	16026749	<b>442707</b>			0.200	5
		20	<b>DS 971 C20-100MA A</b>	16026756	<b>442806</b>			0.200	5
		25	<b>DS 971 C25-100MA A</b>	16026764	<b>442905</b>			0.200	5
		32	<b>DS 971 C32-100MA A</b>	16026772	<b>443001</b>			0.200	5
	300	6	<b>DS 971 C6-300MA A</b>	16026798	<b>443209</b>			0.200	5
		10	<b>DS 971 C10-300MA A</b>	16026806	<b>443308</b>			0.200	5
		16	<b>DS 971 C16-300MA A</b>	16026814	<b>443407</b>			0.200	5
		20	<b>DS 971 C20-300MA A</b>	16026822	<b>443506</b>			0.200	5
		25	<b>DS 971 C25-300MA A</b>	16026830	<b>443605</b>			0.200	5
		32	<b>DS 971 C32-300MA A</b>	16026848	<b>443704</b>			0.200	5
500	6	<b>DS 971 C6-500MA A</b>	16026863	<b>443902</b>			0.200	5	
	10	<b>DS 971 C10-500MA A</b>	16026871	<b>444008</b>			0.200	5	
	16	<b>DS 971 C16-500MA A</b>	16026889	<b>444107</b>			0.200	5	
	20	<b>DS 971 C20-500MA A</b>	16026897	<b>444206</b>			0.200	5	
	25	<b>DS 971 C25-500MA A</b>	16026905	<b>444305</b>			0.200	5	
	32	<b>DS 971 C32-500MA A</b>	16026913	<b>444404</b>			0.200	5	

**3**

**3**

**TECHNICAL CHARACTERISTICS**

	Standards		
<b>Electrical features</b>	Type (wave form of the earth leakage sensed)		
	Poles		
	Rated current $I_n$		A
	Rated voltage $U_e$		V
	Insulation voltage $U_i$		
	Max. operating voltage of circuit test		V
	Min. operating voltage of circuit test		V
	Rated frequency		Hz
	Rated breaking capacity acc. to IEC/EN 61009	ultimate $I_{cn}$	A
	Rated breaking capacity	ultimate $I_{cu}$	kA
	acc. to IEC/EN 60947-2 1P+N @230 VAC, 2P, 3P, 4P @400 VAC	service $I_{cs}$	kA
	Rated residual breaking capacity $I_{\Delta m}$		kA
	Rated impulse withstand voltage (1.2/50) $U_{imp}$		kV
	Dielectric test voltage at ind. freq. for 1 min.		kV
	Overvoltage category		
	Thermomagnetic release characteristic	B: $3 I_n \leq I_m \leq 5 I_n$ C: $5 I_n \leq I_m \leq 10 I_n$	
	Surge current resistance acc. to VDE 0432 Part 2 (wave 8/20)		A
<b>Mechanical features</b>	Toggle		
	Electrical life		
	Mechanical life		
	Protection degree	housing terminals	
	Tropicalization acc. to IEC /EN 60068-2	humid heat constant climatic conditions variable climatic conditions	°C/RH °C/RH °C/RH
	Reference temperature for setting of thermal element		°C
	Ambient temperature (with daily average $\leq +35$ °C)		°C
	Storage temperature		°C
<b>Installation</b>	Terminal type	top bottom	
	Terminal size top/bottom for cables	1P+N line side load side	mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>
	Tightening torque top/bottom	1P+N	N*m
	Mounting		
<b>Dimensions and weight</b>	Dimensions (H x D x W)	1P+N	mm
	Weight	1P+N	g
<b>Combination with auxiliary elements</b>	Combinable with:	auxiliary contact signal contact shunt trip undervoltage release	



	DS 271 AC	DS 271 A
	AC	A
	IEC / EN 61009, BSEN 61009-2-2	
	1P+N	
	6 ≤ In ≤ 32	
	230-240	
	500	
	254	
	110	
	50...60	
	10000	
	-	
	7.5	
	6	
	5	
	2.5	
	III, disconnecter abilities	
	■	
	■	
	250	
	black sealable in on-off position	
	10000	
	20000	
	IP4X	
	IP2X	
	28 cycles with 55/95...100	
	23/83 - 40/93 - 55/20	
	25/95 - 40/95	
	30	
	-25...+55	
	-25...+70	
	cage (shock protected)	
	cage (shock protected)	
	-	
	L1: 1 up to 25; N: flexible 4; FE: flexible 0.5	
	L1 and N: 1 up to 10	
	2 top; 1.2 bottom	
	on DIN rail EN 60715 (35 mm) by means of fast clip device	
	120 x 67.6 x 17.5	
	205	
	no	
	no	
	no	
	no	

# B

## DS 271 AC type, B and C characteristics

Function: Protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $\Delta n=30$  mA); command and isolation of resistive and inductive loads.

Application: residential, commercial, industrial.

Standard: IEC/EN 61009 and BSEN61009-2-2

Icn=10 kA



Characteristics/ Curve	Rated residual current $\Delta n$ mA	Rated current In A	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
B	10	6	DS271 AC-B6/0.01 ELN	2CSR175096R0065	831303			0.205	1
		10	DS271 AC-B10/0.01 ELN	2CSR175096R0105	831402			0.205	1
		16	DS271 AC-B16/0.01 ELN	2CSR175096R0165	831600			0.205	1
		20	DS271 AC-B20/0.01 ELN	2CSR175096R0205	831709			0.205	1
		25	DS271 AC-B25/0.01 ELN	2CSR175096R0255	831808			0.205	1
		32	DS271 AC-B32/0.01 ELN	2CSR175096R0325	831907			0.205	1
	30	6	DS271 AC-B6/0.03 ELN	2CSR175096R1065	832003			0.205	1
		10	DS271 AC-B10/0.03 ELN	2CSR175096R1105	832102			0.205	1
		16	DS271 AC-B16/0.03 ELN	2CSR175096R1165	832300			0.205	1
		20	DS271 AC-B20/0.03 ELN	2CSR175096R1205	832409			0.205	1
		25	DS271 AC-B25/0.03 ELN	2CSR175096R1255	832508			0.205	1
		32	DS271 AC-B32/0.03 ELN	2CSR175096R1325	832607			0.205	1
	100	6	DS271 AC-B6/0.1 ELN	2CSR175096R2065	844808			0.205	1
		10	DS271 AC-B10/0.1 ELN	2CSR175096R2105	844907			0.205	1
		16	DS271 AC-B16/0.1 ELN	2CSR175096R2165	845003			0.205	1
		20	DS271 AC-B20/0.1 ELN	2CSR175096R2205	845102			0.205	1
		25	DS271 AC-B25/0.1 ELN	2CSR175096R2255	845201			0.205	1
		32	DS271 AC-B32/0.1 ELN	2CSR175096R2325	845300			0.205	1

# C

C	10	6	DS271 AC-C6/0.01 ELN	2CSR175096R0064	832706			0.205	1
		10	DS271 AC-C10/0.01 ELN	2CSR175096R0104	832805			0.205	1
		16	DS271 AC-C16/0.01 ELN	2CSR175096R0164	833000			0.205	1
		20	DS271 AC-C20/0.01 ELN	2CSR175096R0204	833109			0.205	1
		25	DS271 AC-C25/0.01 ELN	2CSR175096R0254	833208			0.205	1
		32	DS271 AC-C32/0.01 ELN	2CSR175096R0324	833307			0.205	1
	30	6	DS271 AC-C6/0.03 ELN	2CSR175096R1064	833406			0.205	1
		10	DS271 AC-C10/0.03 ELN	2CSR175096R1104	833505			0.205	1
		16	DS271 AC-C16/0.03 ELN	2CSR175096R1164	833703			0.205	1
		20	DS271 AC-C20/0.03 ELN	2CSR175096R1204	833802			0.205	1
		25	DS271 AC-C25/0.03 ELN	2CSR175096R1254	833901			0.205	1
		32	DS271 AC-C32/0.03 ELN	2CSR175096R1324	834007			0.205	1
	100	6	DS271 AC-C6/0.1 ELN	2CSR175096R2064	841708			0.205	1
		10	DS271 AC-C10/0.1 ELN	2CSR175096R2104	841807			0.205	1
		16	DS271 AC-C16/0.1 ELN	2CSR175096R2164	842002			0.205	1
		20	DS271 AC-C20/0.1 ELN	2CSR175096R2204	842101			0.205	1
		25	DS271 AC-C25/0.1 ELN	2CSR175096R2254	842200			0.205	1
		32	DS271 AC-C32/0.1 ELN	2CSR175096R2324	842309			0.205	1
300	6	DS271 AC-C6/0.3 ELN	2CSR175096R3064	842408			0.205	1	
	10	DS271 AC-C10/0.3 ELN	2CSR175096R3104	842507			0.205	1	
	16	DS271 AC-C16/0.3 ELN	2CSR175096R3164	842705			0.205	1	
	20	DS271 AC-C20/0.3 ELN	2CSR175096R3204	842804			0.205	1	
	25	DS271 AC-C25/0.3 ELN	2CSR175096R3254	842903			0.205	1	
	32	DS271 AC-C32/0.3 ELN	2CSR175096R3324	843009			0.205	1	





**DS 271 A type, B and C characteristics**

Function: Protection against overload and short-circuit currents; protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct contacts ( $I_{\Delta n}=30$  mA); command and isolation of resistive and inductive loads.

Application: commercial, industrial.

Standard: IEC/EN 61009 and BSEN61009-2-2

$I_{cn}=10$  kA

Characteristics/ Curve	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details  Type code	Order code	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
					EAN			kg	pc.
<b>B</b>	10	6	<b>DS271 A-B6/0.01 ELN</b>	2CSR175196R0065	<b>827504</b>			0.205	1
		10	<b>DS271 A-B10/0.01 ELN</b>	2CSR175196R0105	<b>827603</b>			0.205	1
		16	<b>DS271 A-B16/0.01 ELN</b>	2CSR175196R0165	<b>827801</b>			0.205	1
		20	<b>DS271 A-B20/0.01 ELN</b>	2CSR175196R0205	<b>827900</b>			0.205	1
		25	<b>DS271 A-B25/0.01 ELN</b>	2CSR175196R0255	<b>828006</b>			0.205	1
		32	<b>DS271 A-B32/0.01 ELN</b>	2CSR175196R0325	<b>828105</b>			0.205	1
	30	6	<b>DS271 A-B6/0.03 ELN</b>	2CSR175196R1065	<b>828204</b>			0.205	1
		10	<b>DS271 A-B10/0.03 ELN</b>	2CSR175196R1105	<b>828303</b>			0.205	1
		16	<b>DS271 A-B16/0.03 ELN</b>	2CSR175196R1165	<b>828501</b>			0.205	1
		20	<b>DS271 A-B20/0.03 ELN</b>	2CSR175196R1205	<b>828600</b>			0.205	1
		25	<b>DS271 A-B25/0.03 ELN</b>	2CSR175196R1255	<b>828709</b>			0.205	1
		32	<b>DS271 A-B32/0.03 ELN</b>	2CSR175196R1325	<b>828808</b>			0.205	1
	100	6	<b>DS271 A-B6/0.1 ELN</b>	2CSR175196R2065	<b>844204</b>			0.205	1
		10	<b>DS271 A-B10/0.1 ELN</b>	2CSR175196R2105	<b>844303</b>			0.205	1
		16	<b>DS271 A-B16/0.1 ELN</b>	2CSR175196R2165	<b>844402</b>			0.205	1
		20	<b>DS271 A-B20/0.1 ELN</b>	2CSR175196R2205	<b>844501</b>			0.205	1
		25	<b>DS271 A-B25/0.1 ELN</b>	2CSR175196R2255	<b>844600</b>			0.205	1
		32	<b>DS271 A-B32/0.1 ELN</b>	2CSR175196R2325	<b>844709</b>			0.205	1



<b>C</b>	10	6	<b>DS271 A-C6/0.01 ELN</b>	2CSR175196R0064	<b>828907</b>			0.205	1
		10	<b>DS271 A-C10/0.01 ELN</b>	2CSR175196R0104	<b>829003</b>			0.205	1
		16	<b>DS271 A-C16/0.01 ELN</b>	2CSR175196R0164	<b>829201</b>			0.205	1
		20	<b>DS271 A-C20/0.01 ELN</b>	2CSR175196R0204	<b>829300</b>			0.205	1
		25	<b>DS271 A-C25/0.01 ELN</b>	2CSR175196R0254	<b>829409</b>			0.205	1
		32	<b>DS271 A-C32/0.01 ELN</b>	2CSR175196R0324	<b>829508</b>			0.205	1
	30	6	<b>DS271 A-C6/0.03 ELN</b>	2CSR175196R1064	<b>829607</b>			0.205	1
		10	<b>DS271 A-C10/0.03 ELN</b>	2CSR175196R1104	<b>829706</b>			0.205	1
		16	<b>DS271 A-C16/0.03 ELN</b>	2CSR175196R1164	<b>829904</b>			0.205	1
		20	<b>DS271 A-C20/0.03 ELN</b>	2CSR175196R1204	<b>830009</b>			0.205	1
		25	<b>DS271 A-C25/0.03 ELN</b>	2CSR175196R1254	<b>830108</b>			0.205	1
		32	<b>DS271 A-C32/0.03 ELN</b>	2CSR175196R1324	<b>830207</b>			0.205	1
	100	6	<b>DS271 A-C6/0.1 ELN</b>	2CSR175196R2064	<b>840305</b>			0.205	1
		10	<b>DS271 A-C10/0.1 ELN</b>	2CSR175196R2104	<b>840404</b>			0.205	1
		16	<b>DS271 A-C16/0.1 ELN</b>	2CSR175196R2164	<b>840602</b>			0.205	1
		20	<b>DS271 A-C20/0.1 ELN</b>	2CSR175196R2204	<b>840701</b>			0.205	1
		25	<b>DS271 A-C25/0.1 ELN</b>	2CSR175196R2254	<b>840800</b>			0.205	1
		32	<b>DS271 A-C32/0.1 ELN</b>	2CSR175196R2324	<b>840909</b>			0.205	1
300	6	<b>DS271 A-C6/0.3 ELN</b>	2CSR175196R3064	<b>841005</b>			0.205	1	
	10	<b>DS271 A-C10/0.3 ELN</b>	2CSR175196R3104	<b>841104</b>			0.205	1	
	16	<b>DS271 A-C16/0.3 ELN</b>	2CSR175196R3164	<b>841302</b>			0.205	1	
	20	<b>DS271 A-C20/0.3 ELN</b>	2CSR175196R3204	<b>841401</b>			0.205	1	
	25	<b>DS271 A-C25/0.3 ELN</b>	2CSR175196R3254	<b>841500</b>			0.205	1	
	32	<b>DS271 A-C32/0.3 ELN</b>	2CSR175196R3324	<b>841609</b>			0.205	1	



The range of DDA 60, 70 and selective 90 RCD blocks for the S 290 series includes 100A devices suitable for assembly with MCBs in the S 290 series of type C only.

The DDA 560, 570 and 590 series include blocks of type A, AC and selective with a rated current of 63 A, which can be assembled with all MCBs in the S 500 series (with the exception of S 500 in curve K, 6 A in curves B, C, D and 75 A in curve KM).

In compliance with IEC EN 61009, which establishes that the RCD blocks can be assembled with an MCB only once, the S 290 series DDA blocks have a mechanical pin which prevents disassembly once inserted.

In contrast, RCD blocks for the S 500 series which conform to IEC EN 60947-2 app. B do not have unlosable coupling elements.

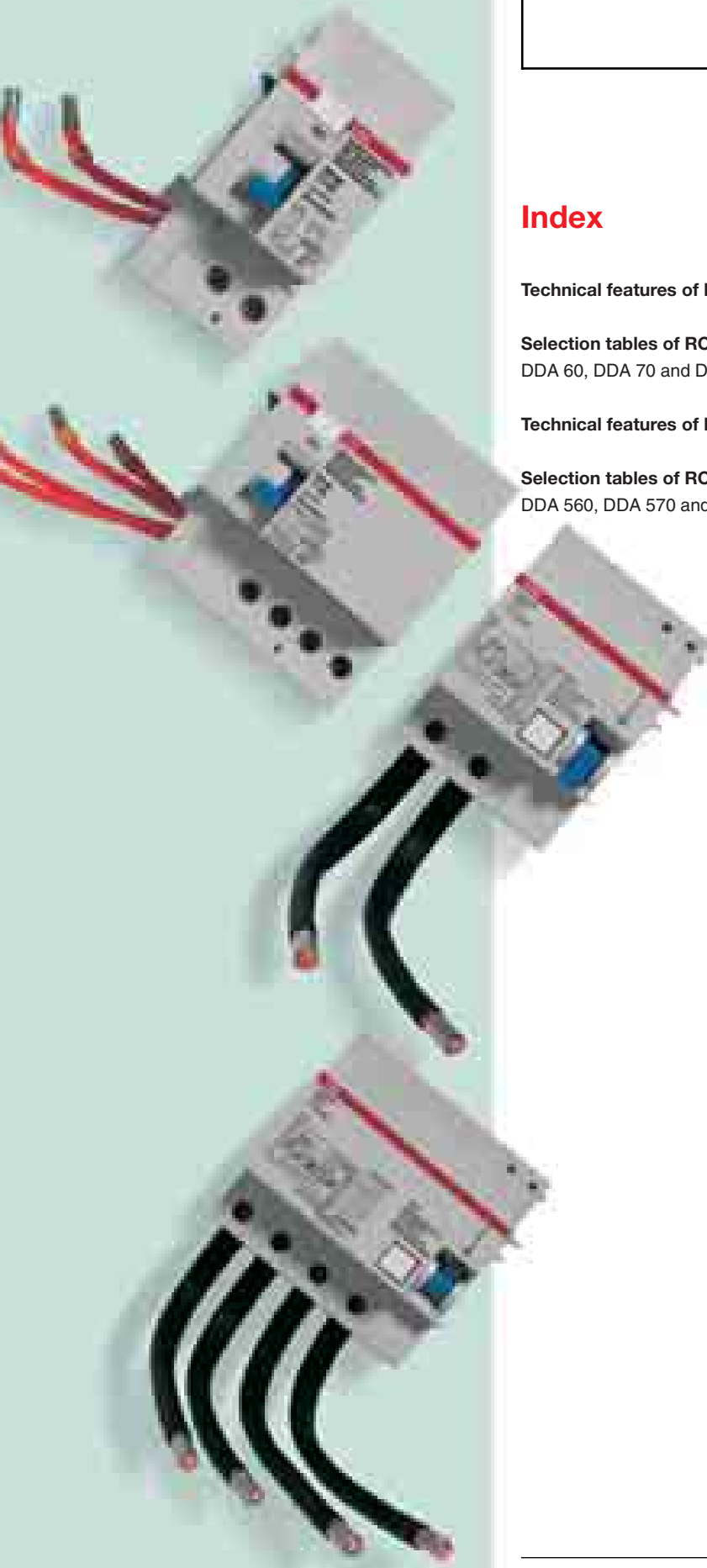
DDA RCD blocks for the S 290 and S 500 series are not sensitive to impulsive atmospheric and operational discharges, therefore, they are not subject to unwanted

tripping in accordance with IEC EN 61008, and IEC EN 61009, even with 8/20  $\mu$ s wave up to 250 A in accordance with VDE 0432 T2.





## Residual current devices DDA for S 290 and S 500 series



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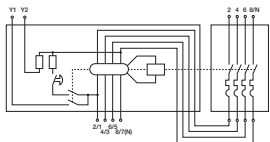
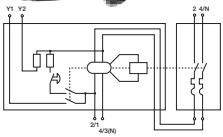
<b>TECHNICAL FEATURES</b>			
	Standards		
<b>Electrical features</b>	Operating characteristic: type		
	Poles		
	Size		A
	Rated voltage $U_N$		V
	Insulation voltage $U_i$		V
	Max. operating voltage of circuit test		V
	Min. operating voltage of circuit test		V
	Rated frequency		Hz
	Rated breaking capacity (I <sub>cn</sub> ) acc. to IEC /EN 61009		A
	Rated breaking capacity (I <sub>cn</sub> ) acc. to IEC/EN 60947-2		A
	Rated residual breaking capacity I $\Delta$ m		kA
	Rated impulse withstand voltage (1.2/50) U <sub>imp</sub>		kV
	Dielectric test voltage at ind. freq. for 1 min.		kV
	Surge current resistance acc. to VDE 0432 Part 2 (wave 8/20)		A
<b>Mechanical features</b>	Toggle		
	Electrical life		
	Mechanical life		
	Protection degree	housing terminals	
	Tropicalization acc. to IEC /EN 60068-2	humid heat	°C/RH
		constant climatic conditions	°C/RH
	Ambient temperature (with daily average $\leq +35$ °C)	variable climatic conditions	°C/RH
		°C	
Storage temperature		°C	
<b>Installation</b>	Terminal type		
	Terminal size for cables		mm <sup>2</sup>
	Tightening torque		N*m
	Mounting		
<b>Dimensions and weight</b>	Dimensions (H x D x W)	2P	mm
		3P/4P	mm
	Weight	2P	g
		3P/4P	g
<b>Combination with auxiliary elements</b>	Combinable with:		
	S290 C characteristic		
	S290 D and K characteristics		
	S500 B, C and D characteristics		
	S500 K characteristic		
	S500 KM characteristic		
S500 UC B and C characteristics			



	<b>DDA60</b>	<b>DDA70</b>	<b>DDA90</b>
		IEC/EN 61009 Ann. G	
	AC	A	A
		2P, 4P	
		100	
		230/400	
		500	
		240(2P), 415(4P)	
		100(2P), 175(4P)	
		50...60	
		according to the breaking capacity of the associated MCB	
		according to the breaking capacity of the associated MCB	
		7.5	
		4	
		2.5	
	250	1000	3000
		black operating from ON-OFF position	
		10000	
		20000	
		IP4X	
		IP2X	
		28 cycles with 55/95...100	
		23/83 - 40/93 - 55/20	
		25/95 - 40/95	
		-25...+45	
		-40...+60	
		50	
		3.5	
		on DIN rail EN 60715 (35 mm) by means of rapid fixing device	
		94 x 68 x 61	
		94 x 68 x 90	
		325	
		600	
		yes	
		no	
		no	
		no	
		no	

# AC

3



## DDA 60 AC type for MCBs S 290

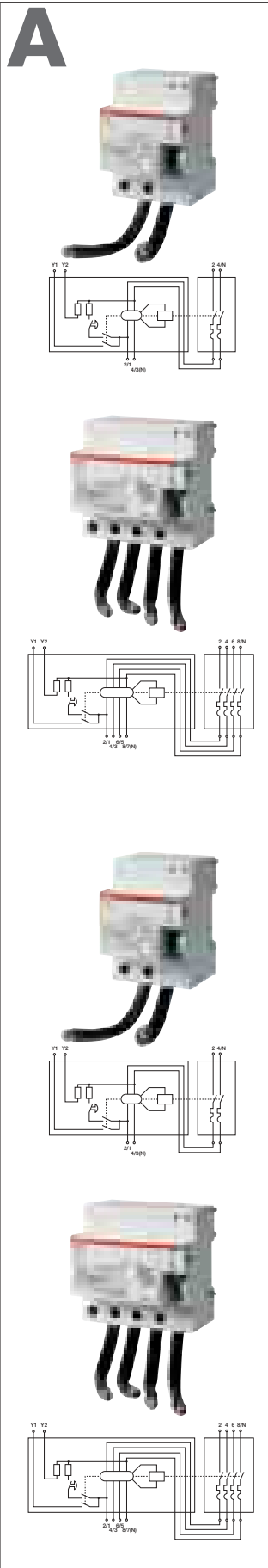
Function: RCD-block for assembly on site with MCBs S290 series only in C characteristic. Protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I\Delta n=30$  mA) contacts.

Application: commercial, industrial.

Standard: IEC/EN 61009 Ann. G

Number of poles	Rated residual current $I\Delta n$ mA	Rated current $I_n$ A	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
2	0.03	100	<b>DDA62 100 30MA</b>	36229002	<b>183307</b>			0.325	1
	0.3	100	<b>DDA62 100 300MA</b>	36229010	<b>183505</b>			0.325	1

4	0.03	100	<b>DDA 64 100 30MA</b>	36229044	<b>183901</b>			0.600	1
	0.3	100	<b>DDA 64 100 300MA</b>	36229051	<b>184106</b>			0.600	1



**DDA 70 A type for MCBs S 290**

Function: RCD-block for assembly on site with MCBs S290 series only in C characteristic. Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I\Delta n=30\text{ mA}$ ) contacts.

Application: commercial, industrial.

Standard: IEC/EN 61009 Ann. G

Number of poles	Rated residual current $I\Delta n$ mA	Rated current $I_n$ A	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	0.03	100	<b>DDA 72 100 30MA</b>	36229069	<b>184304</b>			0.325	1
	0.3	100	<b>DDA 72 100 300MA</b>	36229077	<b>184403</b>			0.325	1

4	0.03	100	<b>DDA 74 100 30MA</b>	36229101	<b>184700</b>			0.600	1
	0.3	100	<b>DDA 74 100 300MA</b>	36229119	<b>184809</b>			0.600	1

**DDA 90 A selective type for MCBs S 290**

Function: RCD-block for assembly on site with MCBs S290 series (only in C characteristic). Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents with an intentional tripping delay, which permits to realize the selectivity with downstream instantaneous devices (for more information about selectivity see the technical guide).

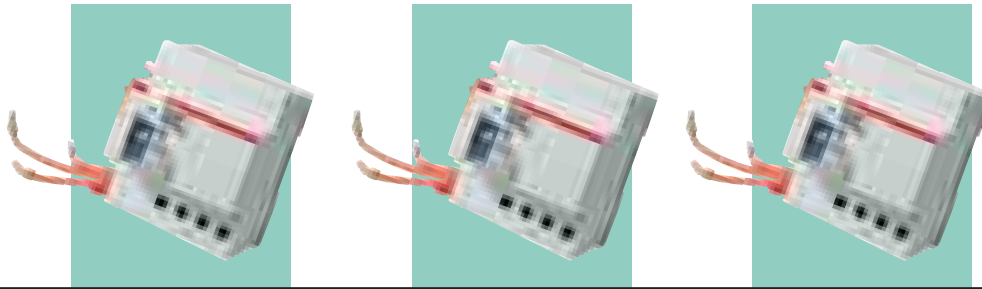
Application: commercial, industrial.

Standard: IEC/EN 61009 Ann. G

2	0.3	100	<b>DDA 92 100 300MA S</b>	36229127	<b>185103</b>			0.325	1
	1	100	<b>DDA 92 100 1A S</b>	36229135	<b>185509</b>			0.325	1

4	0.3	100	<b>DDA 94 100 300MA S</b>	36229168	<b>185905</b>			0.600	1
	1	100	<b>DDA 94 100 1A S</b>	36229176	<b>186001</b>			0.600	1

<b>TECHNICAL FEATURES</b>			
	Standards		
<b>Electrical features</b>	Type (wave form of the earth leakage sensed)		
	Poles		
	Size	A	
	Rated voltage Ue	V	
	Insulation voltage Ui	V	
	Max. operating voltage of circuit test	V	
	Min. operating voltage of circuit test	V	
	Rated frequency	Hz	
	Rated breaking capacity (Icn) acc. to IEC /EN 61009	A	
	Rated breaking capacity (Icn) acc. to IEC/EN 60947-2	A	
	Rated residual breaking capacity IΔm	kA	
	Rated impulse withstand voltage (1.2/50) Uimp	kV	
	Dielectric test voltage at ind. freq. for 1 min.	kV	
	Surge current resistance acc. to VDE 0432 Part 2 (wave 8/20)	A	
<b>Mechanical features</b>	Toggle		
	Electrical life		
	Mechanical life		
	Protection degree	housing terminals	
	Tropicalization acc. to IEC /EN 60068-2	humid heat constant climatic conditions variable climatic conditions	°C/RH °C/RH °C/RH
	Ambient temperature (with daily average ≤ +35 °C)		°C
	Storage temperature		°C
<b>Installation</b>	Terminal type		
	Terminal size for cables		mm <sup>2</sup>
	Tightening torque		N*m
	Mounting		
<b>Dimensions and weight</b>	Dimensions (H x D x W)	2P 3P/4P	mm mm
	Weight	2P 3P/4P	g g
	<b>Combination with auxiliary elements</b>	Combinable with:	S290 C characteristic S290 D and K characteristics S500 B, C and D characteristics S500 K characteristic S500 KM characteristic S500 UC B and C characteristics

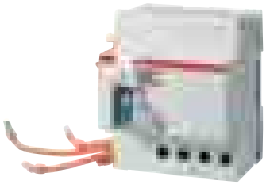


**3**

	<b>DDA560</b>	<b>DDA570</b>	<b>DDA590</b>
		IEC/EN 60947-2 Ann. B	
	AC	A	A
	2P, 3P, 4P	2P, 3P, 4P	4P
		100	
		230/400	
		690	
		440	
		195	
		50...60	
		according to the breaking capacity of the associated MCB	
		according to the breaking capacity of the associated MCB	
		25	
		5	
		2.5	
	250	250	3000
		blue operating just from OFF position	
		10000	
		20000	
		IP4X/IPXXD (excluding terminal area)	
		IP2X/IPXXB	
		28 cycles with 55/95...100	
		23/83 - 40/93 - 55/20	
		25/95 - 40/95	
		-25...+55	
		-40...+70	
		25	
		2	
		on DIN rail EN 60715 (35 mm) by means of rapid fixing device	
		94 x 68 x 44	
		94 x 68 x 79	
		250	
		325 for 3P and 390 for 4P	
		no	
		no	
		yes (except for 6 A size)	
		no	
		yes (except for 75 A size)	
		yes	



# AC



## DDA 560 AC type for MCBs S 500

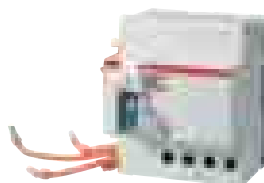
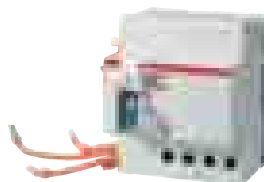
Function: RCD-block for assembly on site with MCBs S500 series (except for K characteristic, size of 6A in B, C, D characteristics and size of 75A in KM characteristic). Protection against the effects of sinusoidal alternating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I_{\Delta n}=30$  mA) contacts.

Application: commercial, industrial.

Standard: IEC/EN 61009 Ann. G

Number of poles	Rated residual current $I_{\Delta n}$ mA	Rated current In A	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
			Type code	Order code					
2	0.03	63	<b>DDA 562 63A 30MA</b>	16258302	<b>509004</b>			0.250	1
	0.3	63	<b>DDA 562 63A 300MA</b>	16258310	<b>509103</b>			0.250	1
3	0.03	63	<b>DDA 563 63A 30MA</b>	16258328	<b>509202</b>			0.325	1
	0.3	63	<b>DDA 563 63A 300MA</b>	16258336	<b>509301</b>			0.325	1
4	0.03	63	<b>DDA 564 63A 30MA</b>	16258344	<b>509400</b>			0.390	1
	0.3	63	<b>DDA 564 63A 300MA</b>	16258351	<b>509509</b>			0.390	1

**A**



**DDA 570 A type for MCBs S 500**

Function: RCD-block for assembly on site with MCBs S500 series (except for K characteristic, size of 6A in B, C, D characteristics and size of 75A in KM characteristic). Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents; protection against indirect contacts and additional protection against direct (with  $I\Delta n=30$  mA) contacts.

**Application: commercial, industrial.**

**Standard: IEC/EN 61009 Ann. G**

Number of poles	Rated residual current $I\Delta n$ mA	Rated current $I_n$ A	Order details <b>Type code</b>	Order code	Bbn 8012542 <b>EAN</b>	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
<b>2</b>	0.03	63	<b>DDA 572 63A 30MA</b>	16258369	<b>509608</b>			0.250	1
	0.3	63	<b>DDA 572 63A 300MA</b>	16258377	<b>509707</b>			0.250	1
<b>3</b>	0.03	63	<b>DDA 573 63A 30MA</b>	16258385	<b>509806</b>			0.325	1
	0.3	63	<b>DDA 573 63A 300MA</b>	16258393	<b>509905</b>			0.325	1
<b>4</b>	0.3	63	<b>DDA 574 63A 30MA</b>	16258401	<b>510000</b>			0.390	1
	1	63	<b>DDA 574 63A 300MA</b>	16258419	<b>510109</b>			0.390	1

**DDA 590 A selective type for MCBs S 500**

Function: RCD-block for assembly on site with MCBs S500 series (except for K characteristic, size of 6A in B, C, D characteristics and size of 75A in KM characteristic). Protection against the effects of sinusoidal alternating and direct pulsating earth fault currents with an intentional tripping delay, which permits to realize the selectivity with downstream instantaneous devices (for more information about selectivity see the technical guide).

**Application: commercial, industrial.**

**Standard: IEC/EN 61009 Ann. G**

<b>4</b>	0.3	63	<b>DDA 594 63A 300MA</b>	16258427	<b>510208</b>			0.390	1
	0.1	63	<b>DDA 594 63A 500MA</b>	16258435	<b>510307</b>			0.390	1
	1	63	<b>DDA 594 63A 1000MA</b>	16258443	<b>510406</b>			0.390	1

**3**





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New System pro *M* compact range of auxiliary elements and accessories is universal: in fact it is suitable for MCBs S 200 range, for RCDs F 200 range and also for RCBOs DS 200 range and it is useful in terms of stock management.

The auxiliary elements range (composed by auxiliary and signal contacts, shunt trips, undervoltage releases and automatic reclosing units) is quite wide and there are different possible schemes for assemblage with devices. All these configurations are possible without the need of any dedicated auxiliary interface contact. Thus MCBs and RCDs performances are improved, even because innovative and integrated solutions can be used in every installation.

The connection accessories range (busbars, connection terminals, feeder terminals) allows any kind of wiring. The range of standard accessories (labels, covers) permits to customize the installation.





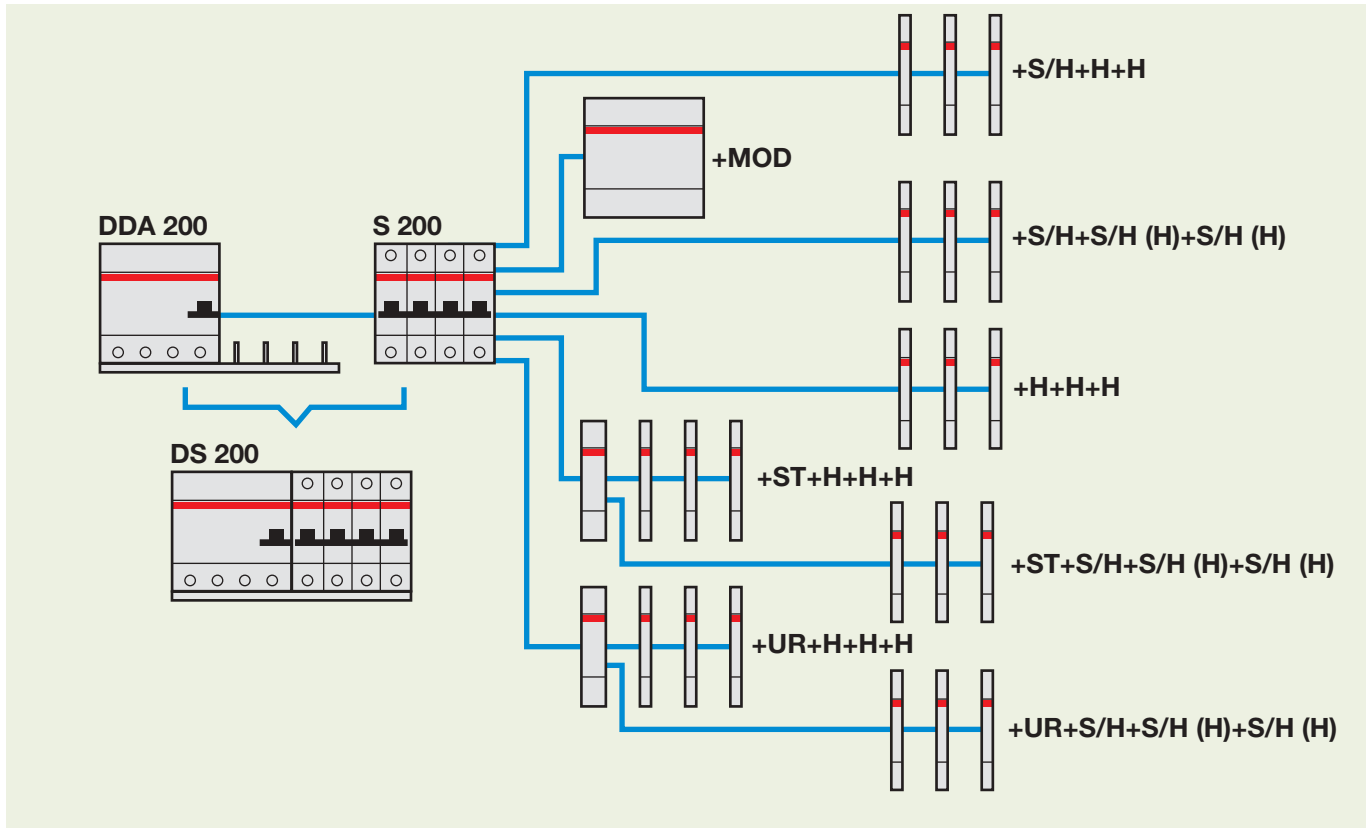
# Auxiliary elements and accessories for MCBs S 200 and RCDs F 200 and DS 200 series



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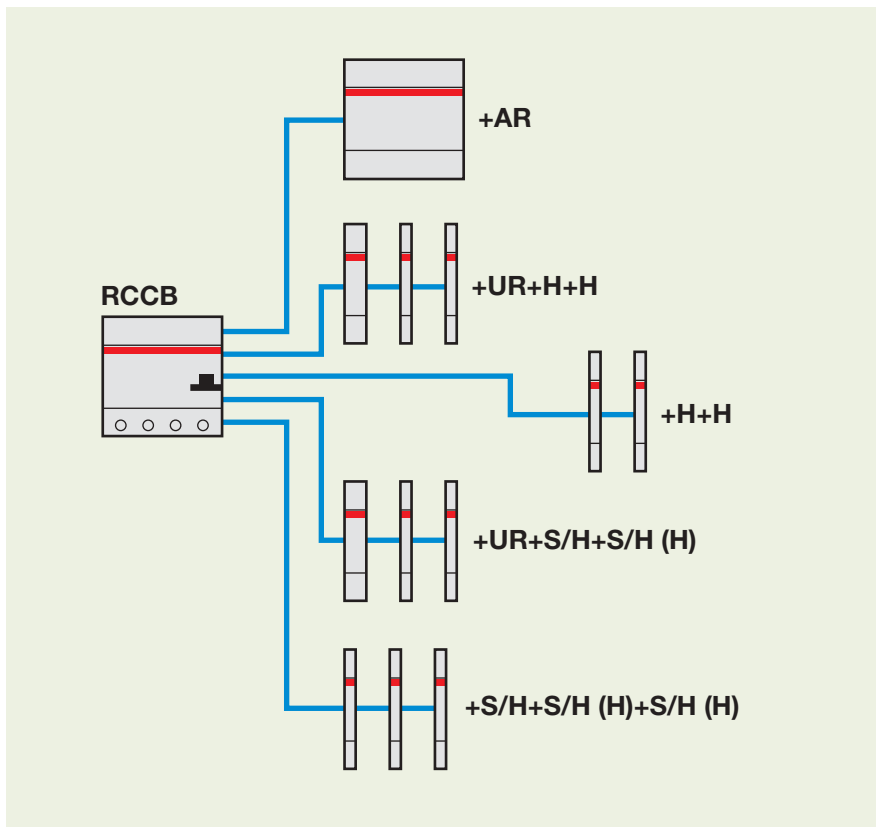
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**Combination between auxiliary elements and S 200\***



\* it could also be considered the combination between auxiliary elements and DS 200 because DS 200 RCBO is composed by a RCD-block DDA 200 and a MCB S 200 factory fitted

**Combination between auxiliary elements and F 200**



**Legenda**

Auxiliary contact	<b>H</b>
Signal/Auxiliary contact	<b>S/H</b>
Signal/Auxiliary contact used as auxiliary contact	<b>S/H (H)</b>
Shunt trip	<b>ST</b>
Undervoltage release	<b>UR</b>
Autro reclosing unit	<b>AR</b>
Motor operating device	<b>MOD</b>

Auxiliary contact and signal/auxiliary contact	Type	S2C-H6R, S2C-H11L, S2C-H20, S2c-H02 and S2C-S/H6R
Rated current	A	10
Min. rated voltage UBmin	AC DC	24 24
Min. rated operational current/voltage		10 mA at 12 V; 5 mA at 24 V
Short-circuit withstand capacity	V	230 a.c. 100A with S201 K4
Overtoltage category		III
Surge voltage (1.2/50 ms)	kV	4
Connection cross section	mm <sup>2</sup>	0.75...2.5 (up to 2 x 1.5 mm <sup>2</sup> for S2C-H11L, S2C-H20L and S2C-H02L)
Tightening torque	Nm	1.2 (max. 0.8 for S2C-H11L, S2C-H20L and S2C-H02L)
Contact stability in vibration test according to DIN IEC 68-2-6		5g, 20 sweep cycles 5...150...5 Hz at 24 V AC/DC, 5 mA automatic reclosing < 10 ms
Mechanical service life		10000 operations
Dimensions (H x D x W)	mm	85 x 69 x 8.8

Bottom-fitting auxiliary contact	Type	S 2C-H10 and S 2C-H01
Contact complement		1NO (1 make contact), 1NC (1 normally closed contact), leading make contact, late closing
Contact load		AC14 2 A/230 V - DC 12 identical DC13/DC13 1 A /50 V, 2 A/30 V
Min. rated voltage	V	12 AC/DC at 0.1 VA
Short-circuit withstand capacity		230 VAC 1000 A, fault protection with S 201-K2 or Z2
Electrical serviceable life		> 4000 switchover cycles
Standard		VDE 0106 Part 101
Connection cross-section	mm <sup>2</sup>	0.75 to 25
Tightening torque	N*m	0.5

Shunt trip	Type	S 2C-A1	S 2C-A2
Rated voltage	AC DC	V V	12...60 110...415
Max release duration	ms	<10	<10
Min. release voltage	AC DC	V V	7 10
Consumption on release	Ub Ib max	V A	12 DC 12 AC 24 DC 24 AC 60 DC 60 AC 2.2 2.5 4.5 5 14 8.8
Coil resistance	Ω	3.7	225
Terminals	mm <sup>2</sup>	16	16
Tightening torque	Nm	2.5	2.5
Dimensions (H x D x W)	mm	85 x 69 x 17.5	85 x 69 x 17.5

Undervoltage release	Type	S2C-UA 12 DC	S2C-UA 24 AC	S2C-UA 24 DC	S2C-UA 48 AC	S2C-UA 48 DC	S2C-UA 110 AC	S2C-UA 110 DC	S2C-UA 230 AC	S2C-UA 230 DC	S2C-UA 400 AC	
Standards		IEC/EN 60947-1										
Rated voltage	AC DC	V V	12 24	24	48	48	110	110	230	230	400	
Frequency	Hz	50...60										
Release trip	V	0.35 UnOVO 0.7 Un										
Terminals	mm <sup>2</sup>	2x1.5										
Consumption	VA	0.2	3.6	2	3.6	2.1	3.5	2.2	3.7	2.3	2.4	
Resistance to corrosion	°C/RH	constant atmosphere: 23/83 - 40/93 - 55/20; variable atmosphere: 25/95 - 40/93										
Protection degree		IPXXB/IP2X										
Tightening torque	Nm	0.4										
Dimensions (H x D x W)	mm	85 x 69 x 17.5										

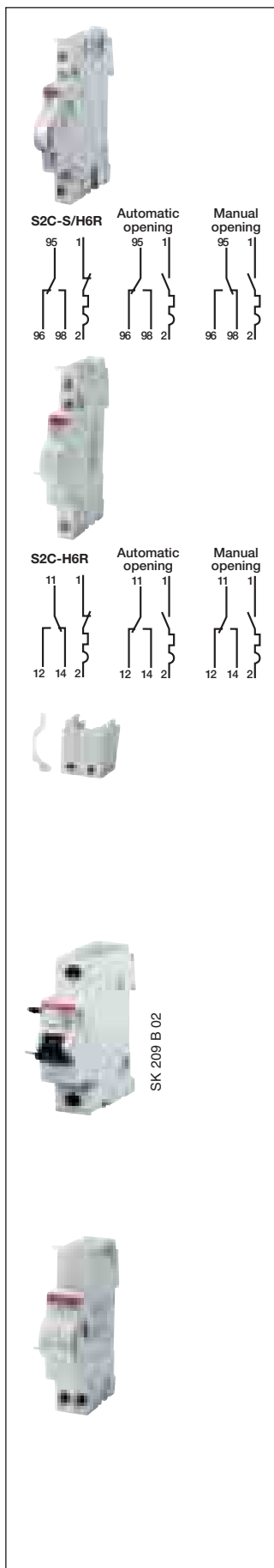
Busbars	Type	Busbars for S200 MCBs, F200 RCCBs, DDA200 RCD-blocks, DS200 RCBs and FS201 RCBs
Specifications		DIN IEC/EN 60439-1
Busbars material		SF-Cu F 244
Insulating profile material		plastic temperature resistant ≥90°C flame-retardant, self extinguishing, dioxine and halogene-free
Busbar cross section	mm <sup>2</sup>	10
Max. operating voltage	V	440
Rated surge voltage	kV	4
Test surge voltage (1.2/50)	kV	6.02
Short-circuit withstand capacity	kA	25
Climatic resistance		constant climate L23/83; 40/92 55/20 according to DIN 50015 humid heat, 28 cycles (≥ IEC/EN 60068-2-30)
Overtoltage category		III



**Accessories for range S 200 U and S 200 UP acc. to UL 489/CSA-22.2 No.5**

Auxiliary contact and signal contact		Type	S2C-H6R U, S2C-S/6RU
Rated current		A	10
Min. rated voltage UBmin	AC	V	24
	DC	V	24
Min. rated operational current/voltage			10 mA at 12 V; 5 mA at 24 V
Short-circuit withstand capacity		V	230 a.c. 100A with S201 K4
Overvoltage category			III
Surge voltage (1.2/50 ms)		kV	4
Connection cross section		mm <sup>2</sup>	0.75...2.5
Tightening torque		Nm	1.2
Contact stability in vibration test according to DIN IEC 68-2-6			5g, 20 sweep cycles 5...150...5 Hz at 24 V AC/DC, 5 mA automatic reclosing < 10 ms
Mechanical service life			10000 operations
Dimensions (H x D x W)		mm	100 x 69 x 8.8

Shunt trip		Type	S 2C-A1 U				S 2C-A2 U						
Rated voltage	AC	V	12...60				110...415						
	DC	V	12...60				110...250						
Max release duration		ms	<10				<10						
Min. release voltage	AC	V	7				55						
	DC	V	10				80						
Consumption on release	Ub	V	12 DC	12 AC	24 DC	24 AC	60 DC	60 AC	110 DC	110 AC	220 DC	230 AC	415 AC
	Ib max	A	2.2	2.5	4.5	5	14	8.8	0.35	0.5	1.1	1.0	2.7
Coil resistance		Ω	3.7				225						
Terminals		mm <sup>2</sup>	16				16						
Tightening torque		Nm	2				2						
Dimensions (H x D x W)		mm	100 x 69 x 17.5				100 x 69 x 17.5						



**Signal/auxiliary contacts**

Function: choice through a selector between indication of the position of the device's contacts and signalling of the fault (overcurrent/short-circuit for MCBs and RCBOs; earth fault for RCCBs and RCBOs). Suitable for MCBs S 200 series, RCCBs F 200 series, RCBOs DS 200 series.

Description	Order details Type code	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
Signal contact/ auxiliary switch	<b>S 2C-S/H6R</b>	2CDS200922R0001	<b>563819</b>			0.04	1

**Auxiliary contacts**

Function: indication of the position of the device's contacts. Suitable for MCBs S200 series. To be mounted on the left side of the MCB thanks to the special pin (max 1 contact per MCB).

Description	Order details Type code	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
Auxiliary contact	<b>S 2C-H6R</b>	2CDS200912R0001	<b>563826</b>			0.04	1
Auxiliary contact 1 NO/1NC	<b>S2C-H11L</b>	2CDS200936R0001	<b>648820</b>			0.04	1
Auxiliary contact 2 NO	<b>S2C-H20L</b>	2CDS200936R0002	<b>648837</b>			0.04	1
Auxiliary contact 2 NC	<b>S2C-H02L</b>	2CDS200936R0003	<b>648844</b>			0.04	1

**Bottom-fitting auxiliary contact for S 200, S 200 M, S 200 P**

1 NC	<b>S 2C-H01</b>	2CDS 200 970 R0001	<b>64551 5</b>			0.01	1
1 NO	<b>S 2C-H10</b>	2CDS 200 970 R0002	<b>64552 2</b>			0.01	1

**packing unit 15 parts**

1 NC	<b>S 2C-H01 15x</b>	2CDS 200 970 R0011	<b>64677 2</b>			0.01	15
1 NO	<b>S 2C-H10 15x</b>	2CDS 200 970 R0012	<b>64681 9</b>			0.01	15

**Shunt trip**

Function: remote opening of the device when a voltage is applied. Suitable for MCBs S 200 series and RCBOs DS 200 series.

Shunt trip							
AC/DC 12...60 V	<b>S 2C-A1</b>	2CDS200909R0001	<b>570992</b>			0.15	1
AC 110...415 V/ DC110...250 V	<b>S 2C-A2</b>	2CDS200909R0002	<b>571005</b>			0.15	1

**Undervoltage release**

Function: protection of the load in the event of a voltage drop (between 70% and 35% of its rated value); positive safety (device's tripping when the voltage is disconnected) emergency stop by means of a button. Suitable for MCBs S 200 series, RCBOs DS 200 series.

Description	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
12VDC	<b>S2C-UA 12 DC</b>	2CSS200911R0001	<b>839705</b>			0.09	1
24VAC	<b>S2C-UA 24 AC</b>	2CSS200911R0002	<b>839804</b>			0.09	1
24VDC	<b>S2C-UA 24 DC</b>	2CSS200911R0007	<b>896401</b>			0.09	1
48VAC	<b>S2C-UA 48 AC</b>	2CSS200911R0003	<b>839903</b>			0.09	1
48VDC	<b>S2C-UA 48 DC</b>	2CSS200911R0008	<b>896500</b>			0.09	1
110VAC	<b>S2C-UA 110 AC</b>	2CSS200911R0004	<b>840008</b>			0.09	1
110VDC	<b>S2C-UA 110 DC</b>	2CSS200911R0009	<b>896609</b>			0.09	1
230VAC	<b>S2C-UA 230 AC</b>	2CSS200911R0005	<b>840107</b>			0.09	1
230VDC	<b>S2C-UA 230 DC</b>	2CSS200911R0010	<b>896708</b>			0.09	1
400VAC	<b>S2C-UA 400 AC</b>	2CSS200911R0006	<b>840206</b>			0.09	1

4



S 2C-S6R U



S 2C-H6R U



S 2C-A1 U



PS 3/6/16 BP

Description	Order details	Bbn	Price	Price group	Weight	Pack unit
	Type code	Order code	1 piece		1 piece	pc.
					kg	

**Accessories for range S 200 U and S 200 UP acc. UL 489 and CSA-22.2 No. 5**

**Auxiliary contact (switch)**

only for range U and UP	<b>S 2C-H6R U</b>	2CDS 200 914 R0001	<b>61561 7</b>		0.035	1
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**Signal contact (bell alarm)**

only for range U and UP	<b>S 2C-S6R U</b>	2CDS 200 924 R0001	<b>64677 2</b>		0.035	1
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**Shunt trip only for range U and UP**

12 - 60 V AC/DC	<b>S 2C-A1 U</b>	2CDS 200 908 R0001	<b>64472 3</b>		0.15	1
110-415 V AC,110-250V DC	<b>S 2C-A2 U</b>	2CDS 200 908 R0002	<b>64473 0</b>		0.15	1

Conn. capacity	Length	No. of poles	Order details	Bbn	CuNo	Price	Price group	Weight	Pack unit
mm <sup>2</sup>	mm		Type code	Order code	1 piece	1 piece		1 piece	pc.
								kg	

**UL-approved busbar blocks (not to be cut)**

**1 pole busbars, spacing 17.5 mm, UL 489**

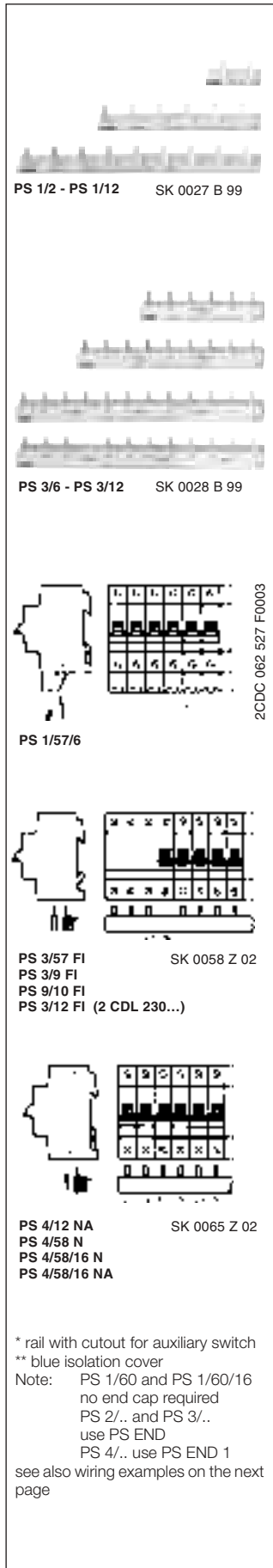
16	6	1	<b>PS 1/6/16 BP</b>	2CDL 210 489 R1606	<b>64496 9</b>	0.035		0.058	1
16	12	1	<b>PS 1/12/16 BP</b>	2CDL 210 489 R1612	<b>64497 6</b>	0.070		0.108	1
16	18	1	<b>PS 1/18/16 BP</b>	2CDL 210 489 R1618	<b>64498 3</b>	0.105		0.163	1

**2 pole busbars, spacing 17.5 mm, UL 489**

16	6	2	<b>PS 2/6/16 BP</b>	2CDL 220 489 R1606	<b>64499 0</b>	0.070		0.062	1
16	12	2	<b>PS 2/12/16 BP</b>	2CDL 220 489 R1612	<b>64500 3</b>	0.140		0.133	1
16	18	2	<b>PS 2/18/16 BP</b>	2CDL 220 489 R1618	<b>64501 0</b>	0.210		0.203	1

**3 pole busbars, spacing 17.5 mm, UL 489**

16	6	3	<b>PS 3/6/16 BP</b>	2CDL 230 489 R1606	<b>64502 7</b>	0.110		0.066	1
16	12	3	<b>PS 3/12/16 BP</b>	2CDL 230 489 R1612	<b>64503 4</b>	0.221		0.152	1
16	18	3	<b>PS 3/18/16 BP</b>	2CDL 230 489 R1618	<b>64504 1</b>	0.332		0.237	1



No. of pins	Phases	mm <sup>2</sup>	Order details		Bbn	Price	Price	Cu-No.	Weight	Pack
			Type code	Order code	4016779	1 piece	group	kg	kg	unit
					EAN					pc.

**Pre-assembled busbars (not to be cut)**

**1-phase busbars, pin distance 17.6 mm, end caps PS-END 0**

2	1	10	PS1/2	2CDL 210 001 R1002	463003			0.01	0.01	180
3	1	10	PS1/3	2CDL 210 001 R1003	514651			0.03	0.03	120
4	1	10	PS1/4	2CDL 210 001 R1004	648233			0.03	0.03	100
6	1	10	PS1/6	2CDL 210 001 R1006	463102			0.03	0.03	60
9	1	10	PS1/9	2CDL 210 001 R1009	463201			0.04	0.04	30
12	1	10	PS1/12	2CDL 210 001 R1012	463300			0.05	0.05	30

**3-phase busbars, pin distance 17.6 mm**

6	3	10	PS3/6	2CDL 231 001 R1006	463409			0.04	0.04	60
9	3	10	PS3/9	2CDL 231 001 R1009	463508			0.07	0.07	30
12	3	10	PS3/12	2CDL 231 001 R1012	463607			0.10	0.10	30
12	3	10	PS3/12FI	2CDL 231 002 R1012	463706			0.10	0.09	50

**Busbars suitable for cutting**

**1-phase busbars, pin distance 17.6 mm, end caps PS-END 0**

60	1	10	PS1/60	2CDL 210 001 R1060	514668			0.26	0.26	20
60	1	16	PS1/60/16	2CDL 210 001 R1660	516655			0.41	0.41	20

**1-phase busbars, connection of 1-pole devices with auxiliary, end caps PS-END 0**

38	1	10	PS1/38H	2CDL 210 001 R1038	586139			0.27	0.27	30
38	1	16	PS1/38/16H	2CDL 210 001 R1638	586146			0.45	0.45	30

**1-phase busbars, connection of neutral (blue insulation), end caps END 1.1**

28	1	10	PS1/28N	2CDL 210 001 R1028	629546			0.24	0.14	50
28	1	16	PS1/28/16N	2CDL 210 001 R1628	629560			0.32	0.20	50
57	1	10	PS1/57NA	2CDL 210 011 R1057	579728			0.24	0.14	50
57	1	10	PS1/57N	2CDL 210 001 R1057	629539			0.24	0.14	50
57	1	16	PS1/57/16NA	2CDL 210 011 R1657	579735			0.32	0.20	50
57	1	16	PS1/57/16N	2CDL 210 001 R1657	629553			0.32	0.20	50

**1-phase busbars, connection of auxiliaries, end caps END 1.1 except PS 1/57/6**

23	1	6	PS1/23/6	2CDL 210 005 R0623	584739			0.16	0.09	50
29	1	6	PS1/29/6	2CDL 210 005 R0629	580823			0.14	0.10	50
38	1	6	PS1/38/6	2CDL 210 005 R0638	580816			0.14	0.09	50
57	1	6	PS1/57/6	2CDL 210 005 R0657	585309			0.11	0.08	50

**2-phase busbars, pin distance 17.6 mm, end caps PS-END**

12	2	10	PS2/12	2CDL 220 001 R1012	556521			0.07	0.08	50
12	2	10	PS2/12A	2CDL 220 010 R1012	584616			0.07	0.08	50
12	2	16	PS2/12/16	2CDL 220 001 R1612	646918			0.11	0.09	50
58	2	10	PS2/58	2CDL 220 001 R1058	556552			0.32	0.36	10
58	2	16	PS2/58/16	2CDL 220 001 R1658	556569			0.55	0.49	10
58	2	16	PS2/58/16A	2CDL 220 010 R1658	584746			0.55	0.49	10

Note: PS...A is a busbar with removable pin

No. of pins	Phases	mm <sup>2</sup>	Order details		Bbn	Price 1 piece	Price group	Cu-No.	Weight 1 piece	Pack unit
			Type code	Order code	4016779					

**2-phase busbars, connection of 2-pole devices with auxiliary, end caps PS-END**

48	2	10	PS2/48H	2CDL 220 001 R1048	556538			0.47	0.35	10
48	2	16	PS2/48/16H	2CDL 220 001 R1648	556545			0.68	0.48	10
48	2	16	PS2/48/16HA	2CDL 220 012 R1648	584630			0.68	0.48	10

**3-phase busbars, pin distance 17.6 mm, end caps PS-END**

12	3	10	PS3/12	2CDL 230 001 R1012	576116			0.09	0.09	50
12	3	10	PS3/12A	2CDL 230 010 R1012	584647			0.09	0.09	50
12	3	16	PS3/12/16	2CDL 230 001 R1612	562805			0.16	0.12	50
60	3	10	PS3/60	2CDL 230 001 R1060	514699			0.51	0.47	10
60	3	10	PS3/60A	2CDL 230 010 R1060	563758			0.51	0.47	10
60	3	16	PS3/60/16	2CDL 230 001 R1660	514705			0.76	0.65	10
60	3	16	PS3/60/16A	2CDL 230 010 R1660	563765			0.76	0.65	10

**3-phase busbars, connection of 1-pole devices with auxiliary, end caps PS-END**

39	3	10	PS3/39H	2CDL 230 001 R1039	556590			0.51	0.43	10
39	3	16	PS3/39/16H	2CDL 230 001 R1639	556606			0.76	0.60	10

**3-phase busbars, connection of 2-pole devices with auxiliary, end caps PS-END**

24	3	10	PS3/24H	2CDL 230 001 R1024	556576			0.80	0.41	10
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**3-phase busbars, connection of 3-pole devices with auxiliary, end caps PS-END**

48	3	10	PS3/48H	2CDL 230 001 R1048	556613			0.51	0.43	10
48	3	16	PS3/48/16H	2CDL 230 001 R1648	556644			0.76	0.60	10
48	3	16	PS3/48/16HA	2CDL 230 012 R1648	584654			0.76	0.60	10

**3-phase busbars, connection of 1+N or RCBOs, end caps PS-END**

30	3	10	PS3/30	2CDL 230 001 R1030	556583			0.50	0.42	10
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**3-phase busbars, N of the RCD omitted, end caps PS-END**

9	3	10	PS3/9FI	2CDL 230 002 R1009	517515			0.10	0.06	50
10	3	10	PS3/10FI	2CDL 230 002 R1010	517522			0.10	0.07	50
12	3	10	PS3/12FI	2CDL 230 002 R1012	571074			0.11	0.09	50
57	3	10	PS3/57FI	2CDL 230 002 R1057	556651			0.55	0.46	10

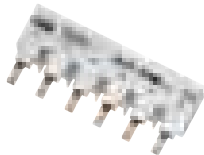
**3-phase busbars, N of the RCD omitted, with auxiliary at RCD. end caps PS-END**

12	3	10	PS3/12FIH	2CDL 230 003 R1012	571081			0.11	0.09	50
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**4-phase busbars, pin distance 17.6 mm, end caps PS-END 1**

12	4	10	PS4/12	2CDL 240 001 R1012	556668			0.12	0.11	30
12	4	10	PS4/12A	2CDL 240 010 R1012	584678			0.12	0.11	30
12	4	16	PS4/12/16	2CDL 240 001 R1612	556675			0.24	0.16	30
60	4	10	PS4/60	2CDL 240 001 R1060	556682			0.80	0.64	10
60	4	16	PS4/60/16	2CDL 240 001 R1660	556743			1.21	0.89	10
60	4	16	PS4/60/16A	2CDL 240 010 R1660	584685			1.21	0.89	10

Note: PS...A is a busbar with removable pin



PS3/6/16 BP

**4-phase busbars, connection of 4-pole devices with auxiliary, end caps PS-END 1**

52	4	16	<b>PS4/52/16H</b>	2CDL 240 001 R1652	<b>556699</b>	1.30	0.78	10
52	4	16	<b>PS4/52/16HA</b>	2CDL 240 012 R1652	<b>584692</b>	1.30	0.78	10

**4-phase busbars, connection of 1+N or RCBOs, end caps PS-END 1**

12	4	10	<b>PS4/12NA</b>	2CDL 240 013 R1012	<b>584708</b>	0.14	0.10	30
58	4	10	<b>PS4/58N</b>	2CDL 240 001 R1058	<b>556705</b>	0.80	0.59	10
58	4	16	<b>PS4/58/16N</b>	2CDL 240 001 R1658	<b>556736</b>	1.21	0.77	10
58	4	16	<b>PS4/58/16NA</b>	2CDL 240 013 R1658	<b>584715</b>	1.21	0.77	10

**4-phase busbars, connection of 1+N or RCBOs with auxiliary, end caps PS-END 1**

48	4	16	<b>PS4/48/16NHA</b>	2CDL 240 014 R1648	<b>584722</b>	1.48	0.76	10
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**4-phase busbars, connection of 4-pole RCD with 1+N , end caps PS-END 1**

58	4	10	<b>PS4/58NNA</b>	2CDL 240 010 R1058	<b>563734</b>	0.80	0.58	10
58	4	16	<b>PS4/58/16NNA</b>	2CDL 240 010 R1658	<b>563741</b>	1.21	0.80	10

**Pre-assembled busbars (not to be cut) UL 489**

**1-phase busbars, pin distance 17.6 mm, UL 489**

6	1	16	<b>PS 1/6/16 BP</b>	2CDL 210 489 R1606	<b>644969</b>	0.04	0.05	1
12	1	16	<b>PS 1/12/16 BP</b>	2CDL 210 489 R1612	<b>644976</b>	0.07	0.11	1
18	1	16	<b>PS 1/18/16 BP</b>	2CDL 210 489 R1618	<b>644983</b>	0.11	0.16	1

**2-phase busbars, pin distance 17.6 mm, UL489**

6	2	16	<b>PS 2/6/16 BP</b>	2CDL 220 489 R1606	<b>644990</b>	0.07	0.06	1
12	2	16	<b>PS 2/12/16 BP</b>	2CDL 220 489 R1612	<b>645003</b>	0.14	0.13	1
18	2	16	<b>PS 2/18/16 BP</b>	2CDL 220 489 R1618	<b>645010</b>	0.21	0.20	1

**3-phase busbars. pin distance 17.6 mm. UL 489**

6	3	16	<b>PS 3/6/16 BP</b>	2CDL 230 489 R1606	<b>645027</b>	0.11	0.07	1
12	3	16	<b>PS 3/12/16 BP</b>	2CDL 230 489 R1612	<b>645034</b>	0.22	0.15	1
18	3	16	<b>PS 3/18/16 BP</b>	2CDL 230 489 R1618	<b>645041</b>	0.33	0.24	1

**Busbars (suitable for cutting) UL 1077**

**1-phase busbars, pin distance 17.6 mm, end caps PS-END 0**

60	1	10	<b>PS 1/60</b>	2CDL 210 001 R1060	<b>514668</b>	0.26	0.26	20
60	1	16	<b>PS 1/60/16</b>	2CDL 210 001 R1660	<b>516655</b>	0.41	0.41	20

**1-phase busbars, connection of 1-pole devices with auxiliary, PS-END 0**

38	1	10	<b>PS 1/38H</b>	2CDL 210 001 R1038	<b>586139</b>	0.27	0.27	30
38	1	16	<b>PS 1/38/16H</b>	2CDL 210 001 R1638	<b>586146</b>	0.45	0.45	30

**2-phase busbars, pin distance 17.6 mm, end caps PS-END SP**

58	2	10	<b>PS 2/58 SP</b>	2CDL 220 111 R1058	<b>646413</b>	0.42		10
58	2	16	<b>PS 2/58/16 SP</b>	2CDL 220 111 R1658	<b>646420</b>	0.69		10

Note: PS...A is a busbar with removable pin

No. of pins	Phases	mm <sup>2</sup>	Order details	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Cu-No. kg	Weight 1 piece kg	Pack unit pc.
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2-phase busbars, connection of 2-pole devices with auxiliary, end caps PS-END SP

48	2	16	PS 2/48/16 SP	2CDL 220 112 R1648	646437			0.68		10
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3-phase busbars, pin distance 17.6 mm, end caps PS-END SP

60	3	10	PS 3/60 SP	2CDL 230 111 R1060	646444			0.68		10
60	3	16	PS 3/60/16 SP	2CDL 230 111 R1660	646451			1.02		10

3-phase busbars, connection of 3-pole devices with auxiliary, end caps PS-END SP

48	3	16	PS 3/48/16 SP	2CDL 230 112 R1648	646468			1.16		10
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4-phase busbars, pin distance 17.6 mm, PS-END 1 SP

60	4	16	PS 4/60/16 SP	2CDL 240 111 R1660	646475			1.97		10
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4-phase busbars, connection of 4-pole devices with auxiliary, end caps PS-END 1 SP

52	4	16	PS 4/52/16 SP	2CDL 240 112 R1652	646482			1.90		10
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4-phase busbars, connection of 1+N and RCBO, end caps PS-END 1 SP

58	4	16	PS4/58/16N SP	2CDL 240 113 R1658	646499			1.86		10
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Busbars (suitable for cutting) for DDA

3-phase busbars, connection of DDA 202, end caps PS-END

30	3	10	PS 3/30-DDA 202	2CDL 230 202 R1030	647472			0.97	0.41	10
30	3	16	PS 3/30/16-DDA 202	2CDL 230 202 R1630	647502			1.46	0.55	10

3-phase busbars, connection of DDA 202 with auxiliary, end caps PS-END

26	3	16	PS 3/26/16H-DDA 202	2CDL 230 202 R1626	648912			1.43	0.54	10
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4-phase busbars, connection of DDA 204, end caps PS-END 1

32	4	10	PS 4/32-DDA 204	2CDL 240 204 R1032	647458			1.41	0.56	10
32	4	16	PS 4/32/16-DDA 204	2CDL 240 204 R1632	647465			2.12	0.77	10

A = breakable pins

Conn. capacity mm <sup>2</sup>	Module	Phases	Order details	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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End caps

			END 1.1	2CDL 200 011 R0011	638913			0.001	50
			PS-END 0	2CDL 200 001 R0004	652261			0.001	50
			PS-END	2CDL 200 001 R0001	514729			0.001	50
			PS-END 1	2CDL 200 001 R0002	570114			0.001	50
			PS-END SP	2CDL 200 110 R0001	646505			0.001	50
			PS-END 1 SP	2CDL 200 110 R0002	646512			0.001	50

Main circuit breaker busbar

3-phase busbar (10 mm<sup>2</sup>) for connecting main circuit breaker E 463/3-KB and pro M compact devices incl. end caps. No. of poles: 12 (1 x E 463/3-KB + 9 x S 201)

12	3		PS 3/12 E463	2CDL230004R1012	51741 6			0.220		30
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END 1.1



PS-END 0



PS-END



### Rail connectors

For wiring of component rails in the consumer unit, rail-to-rail clearance 125 mm. In the case of the 4-pole connector, the color of the N conductor is blue.

10	3-pole	<b>RV 3</b>	GH V036 0504 R0023	<b>51238 1</b>	0.080	25
10	4-pole	<b>RV 4</b>	GH V036 0504 R0024	<b>51224 4</b>	0.114	25

### Auxiliary contact bridge

Wire jumper for integrated auxiliary contact S 200 H for series connections.

1/2 mod.	<b>HKB</b>	GH V036 0504 R0100	<b>52313 4</b>	0.001	1000
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### Shock-protection caps for PS...

5 parts	<b>SZ-BSK</b>	2CDL 200 001 R0011	<b>42000 6</b>	0.003	10
5 parts	<b>BSK*</b>	2CDL 200 001 R0022	<b>649834</b>	0.003	10

\* closed version

### Labelling system

Package comes with 40 labels, marked or blank. Blank labels can be labeled by hand with an indelible, waterproof pen or with computerised labelling systems (plotter).

identification labels blank	<b>BS</b>	GH S200 1946 R0001	<b>47810 6</b>	0.004	30
identification labels with pictograms	<b>BS Pikto</b>	GH S200 1946 R0002	<b>47820 5</b>	0.004	30
identification labels marked 4 x 1 – 10	<b>BS 1/10</b>	GH S200 1946 R0003	<b>47830 4</b>	0.004	30
identification labels marked 2 x 1 – 20	<b>BS 1/20</b>	GH S200 1946 R0004	<b>47840 3</b>	0.004	30
identification labels marked 1 – 40	<b>BS 1/40</b>	GH S200 1946 R0005	<b>47850 2</b>	0.004	30
identification labels marked 41 – 80	<b>BS 41 – 80</b>	GH S200 1946 R0006	<b>58591 0</b>	0.004	30
identification labels marked 81 – 120	<b>BS 81 – 120</b>	GH S200 1946 R0007	<b>58592 7</b>	0.004	30
identification labels marked 121 – 160	<b>BS 121/160</b>	GH S200 1946 R0008	<b>58593 4</b>	0.004	30

### Individual labelling system ILS

At the individual labelling system ILS is a matter of a DIN A5 polyester foil with coating for ink jet and laser printer (in case of using a laser printer, please check, if it is possible to print adhesive coating foils with thickness of 250µm) with high temperature resistance. The adhesive coating 3M( 9471 LE is noted at UL files number MH 11410. The single labels are punched on one side for easy take-out. Word file could be downloaded under [www.abb.de/stotz-kontakt](http://www.abb.de/stotz-kontakt).

Also inscribable with ink, ball-pen, pencil and crayon

1 foil with 126 labels (1-module: 6 x 17.2 mm)	<b>ILS</b>	2CDL 200 002 R0001	<b>58922 2</b>	0.011	1
1 foil with 210 labels (1/2-module: 6 x 8.5 mm)	<b>ILS-H</b>	2CDL 200 002 R0002	<b>58923 9</b>	0.011	1
1 foil with 210 labels (1/2-module: 6 x 8.5 mm printed with auxiliary contact assignment)	<b>ILS-H1</b>	2CDL 200 012 R0002	<b>648516</b>	0.011	1





Conn. capacity mm <sup>2</sup>	Type of connection lug	Terminal LxW mm	Order details Type code	Order code	Bbn 4016779 EAN	Cu No.	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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**Terminals, insulated**

6-25	Pin	15x6	<b>SZ-Ast25 I</b>	2CDL200001R2501	<b>649933</b>	0.012			0.011	50
6-25	Pin	32x4	<b>SZ-Ast9 I</b>	2CDL200001R2502	<b>651097</b>	0.012			0.012	50
6-25	Pin	32x6	<b>SZ-Ast6 I</b>	2CDL200001R2503	<b>651103</b>	0.014			0.013	50
6-25	Pin	15x4	<b>SZ-Ast1 I</b>	2CDL200001R2504	<b>652766</b>	0.012			0.010	50
6-25	Pin	15x4	<b>SZ-Ast2 I</b>	2CDL200002R2505	<b>652773</b>	0.012			0.010	50
6-50	Pin	15x6	<b>SZ-Ast50 I</b>	2CDL200001R5001	<b>649940</b>	0.014			0.020	50
6-50	Pin	15x6	<b>SZ-Ast55 I</b>	2CDL200002R5002	<b>649957</b>	0.014			0.020	50
6-50	Pin	32x6	<b>SZ-Ast12 I</b>	2CDL200001R5003	<b>649964</b>	0.014			0.023	50
6-50	Pin	15x4	<b>SZ-Ast51 I</b>	2CDL200001R0004	<b>652780</b>	0.014			0.019	50
6-50	Pin	15x4	<b>SZ-Ast56 I</b>	2CDL200002R5005	<b>652797</b>	0.014			0.019	50

**Feeder terminals**

Safe from touch of the back of the hand/finger according to DIN EN 50274 (DIN VDE 0660 Part 514). Single-pole terminals can be mounted side by side to multipole terminals.

6-50	<b>SZ-ESK 3</b>	2CDL 200 003 R5001	<b>65257 5</b>					0.030	10
6-35	<b>SZ-ESK 2</b>	2CDL 200 001 R3501	<b>96920 3</b>					0.024	10

**Flexible connecting wires**

with fork-type cable lug (black)

Conn. capacity mm <sup>2</sup>	Length	Order details Type code	Order code	Bbn 4012233 EAN	Cu No.	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
6	125	<b>SZ-DB 121</b>	GH V036 1425 R0001	<b>55650 2</b>	0.006			0.025	1000/50
10	135	<b>SZ-DB 122 N</b>	GH V036 1425 R0031	<b>55670 0</b>	0.010			0.02	500/25
6	260	<b>SZ-DB 231 N</b>	GH V036 1425 R0032	<b>55680 9</b>	0.014			0.02	500/25
10		<b>SZ-DB 232 N</b>	GH V036 1425 R0033	<b>55690 8</b>	0.022			0.04	250/25
10	330	<b>SZ-DB 311</b>	GH V036 1425 R0034	<b>55700 4</b>	0.029			0.05	100/25

with fork-type cable lug and ultrasonic compacted cable ends (black)

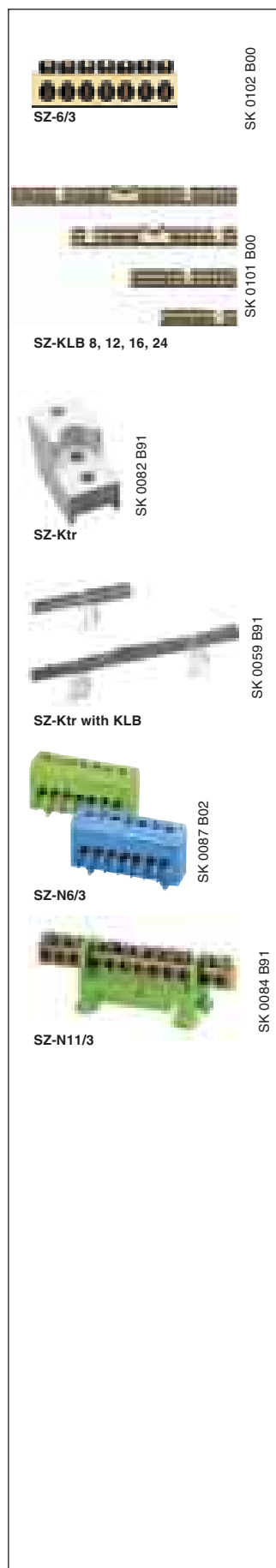
6	125	<b>SZ-DB 123</b>	GH V036 1425 R0006	<b>55660 1</b>	0.007			0.01	1000/50
10	135	<b>SZ-DB 124 N</b>	GH V036 1425 R0035	<b>55710 3</b>	0.012			0.02	500/25
6	260	<b>SZ-DB 235</b>	GH V036 1425 R0036	<b>55720 2</b>	0.014			0.02	500/25
10		<b>SZ-DB 236</b>	GH V036 1425 R0037	<b>55730 1</b>	0.024			0.04	250/25

with ultrasonic compacted cable ends (black)

6	125	<b>SZ-DB 125 N</b>	GH V036 1425 R0038	<b>55740 0</b>	0.007			0.01	1000/50
6	260	<b>SZ-DB 233 N</b>	GH V036 1425 R0039	<b>55750 9</b>	0.015			0.02	500/25
10	135	<b>SZ-DB 126 N</b>	GH V036 1425 R0040	<b>55760 8</b>	0.013			0.02	500/25
10	260	<b>SZ-DB 234 N</b>	GH V036 1425 R0041	<b>55770 7</b>	0.025			0.04	250/25
10	330	<b>SZ-DB 312</b>	GH V036 1425 R0042	<b>55780 6</b>	0.032			0.05	100/25

**Advantages:**

- at the same cross-section smaller dimensions (more space in terminal)
- nearly no transition resistances
- more reliability; conductor sleeves could be loosen under specific conditions



Input	Output	Order details		Bbn	Price	Price	Weight	Pack
mm <sup>2</sup>	mm <sup>2</sup>	Type code	Order code	4012233	1 piece	group	1 piece	unit
				EAN			kg	pc.

**Neutral or protective-conductor terminals without insulation holder**

1 x 16	6 x to 16	<b>SZ-6/3</b>	GH V036 0876 R0003	<b>50592 5</b> <sup>①</sup>			0.022	10
1 x 16	2 x to 16 6 x to 10	<b>SZ-KLB 8</b>	GJ I232 0131 R0001	<b>59660 7</b>			0.025	30
1 x 16	2 x to 16 10 x to 10	<b>SZ-KLB 12</b>	GJ I232 0071 R0013	<b>59530 3</b>			0.035	30
1 x 35	4 x to 16 12 x to 10	<b>SZ-KLB 16</b>	GJ I232 0072 R0017	<b>59540 2</b>			0.077	30
1 x 35	4 x to 16 20 x to 10	<b>SZ-KLB 24</b>	GJ I232 0073 R0016	<b>59550 1</b>			0.100	30

**Holders for SZ-KLB terminals**

Screw-fixing  
SZ-KLB 8 and 12 each 1 piece required  
SZ-KLB 16 and 24 each 2 pieces required

		<b>SZ-Ktr</b>	GJ I202 4027 R0001	<b>59450 4</b>			0.003	100
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**Neutral and protective-conductor terminals with insulation holder for quick fastening onto DIN rails EN 50 022**

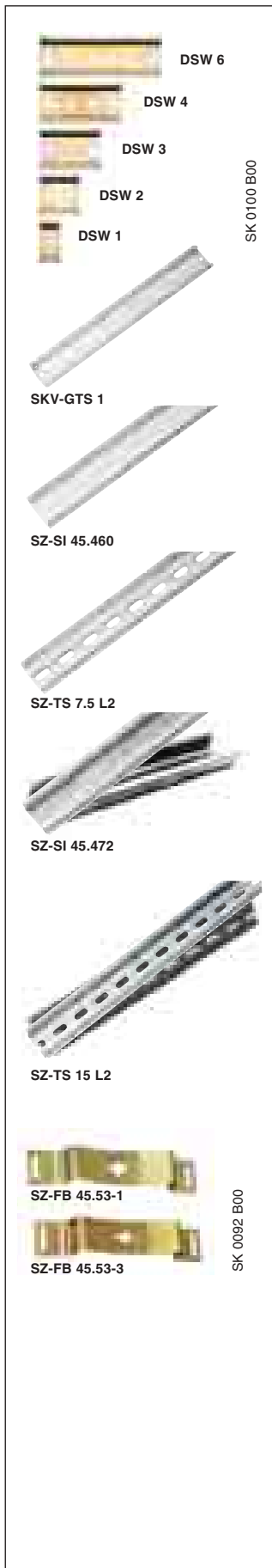
Neutral with insulation holder blue; type C finger safe, conductor opening closed on one side

1 x 16	6 x 16	<b>SZ-N 6/3</b>	GH V036 0876 R0001	<b>55570 3</b>			0.027	20
1 x 16	11 x 16	<b>SZ-N 11/3</b>	GH V036 0876 R0002	<b>55580 2</b>			0.043	20
1 x 16	6 x 16	<b>SZ-N 6/3 C</b>	GH V036 0876 R0011	<b>57095 4</b> <sup>①</sup>			0.028	20
1 x 16	6 x 16	<b>SZ-N 11/3 C</b>	GH V036 0876 R0012	<b>57096 1</b> <sup>①</sup>			0.046	20

Protective conductor with insulation holder green/yellow; type C finger safe, conductor opening closed on one side

1 x 16	6 x 16	<b>SZ-PE 6/3</b>	GH V036 0876 R0004	<b>55600 7</b>			0.027	20
1 x 16	11 x 16	<b>SZ-PE 11/3</b>	GH V036 0876 R0005	<b>55610 6</b>			0.043	20
1 x 16	6 x 16	<b>SZ-PE 6/3 C</b>	GH V036 0876 R0014	<b>57097 8</b> <sup>①</sup>			0.028	20
1 x 16	11 x 16	<b>SZ-PE 11/3 C</b>	GH V036 0876 R0015	<b>57098 5</b> <sup>①</sup>			0.046	20

① bbn-No. 40 16779



Length	Order details	Bbn	Price	Price group	Weight	Pack
mm	Type code	Order code	1 piece		1 piece	unit
					kg	pc.

### DIN rails

DIN rails (DIN EN 60 715 – 35 x 7.5) for individual installation with 2 screws on an even surface (1 module = 17.5 mm)

for 1 module	<b>DSW 1</b>	GH S210 1926 R0001	<b>13580 6</b>		0.060	10
for 2 modules	<b>DSW 2</b>	GH S210 1926 R0002	<b>13590 5</b>		0.012	10
for 3 modules	<b>DSW 3</b>	GH S210 1926 R0003	<b>13600 1</b>		0.018	10
for 4 modules	<b>DSW 4</b>	GH S210 1926 R0004	<b>13610 0</b>		0.024	10
for 6 modules	<b>DSW 6</b>	GH S210 1926 R0006	<b>13620 9</b>		0.036	10

DIN rail DIN EN 60 715, 35 x 7.5, material thickness 1 mm, surface protected, galvanised.

241	<b>SKV-GTS 1</b>	GH L110 1915 R0001	<b>04090 2</b>		0.09	40
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DIN rails DIN EN 60 715, 35 x 7.5, material thickness 1 mm, surface galvanised.

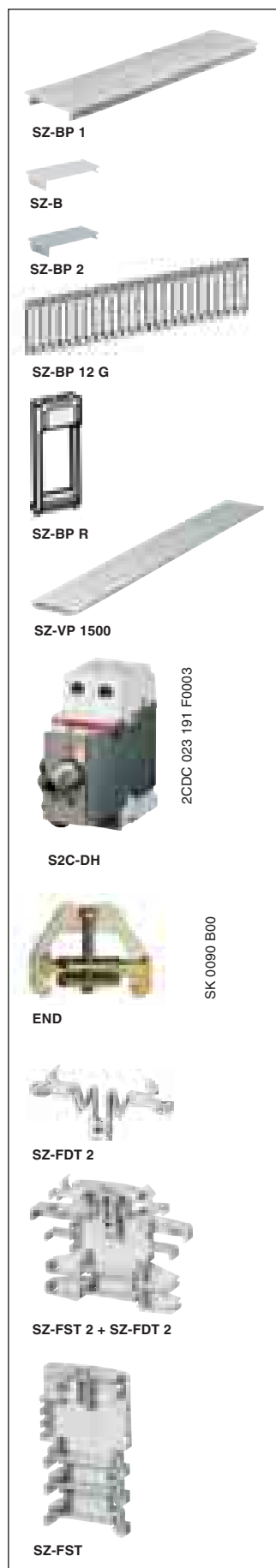
1000	<b>SZ-SI 45.460</b>	GJ I232 2218 R0001	<b>59730 7</b>		0.35	10
2000	<b>SZ-TS 7.5 L2</b>	GJ I232 2218 R0007	<b>59760 4</b>		0.70	20

DIN rails DIN EN 60 715, 35 x 15, material thickness 1.5 mm, surface galvanised

2000	<b>SZ-SI 45.472</b>	GJ I232 2218 R0010	<b>59780 2</b>		1.30	10
2000	<b>SZ-TS 15 L2</b>	GJ I232 2218 R0009	<b>59770 3</b>		0.78	10

Catch spring for mounting devices onto DIN rails (DIN EN 60 715, 35 x 7.5)

for screw type M4	<b>SZ-FB 45.53-3</b>	GJ I184 2013 P0003	<b>64560 2</b>		0.03	50
for screw type M5	<b>SZ-FB 45.53-1</b>	GJ I184 2013 P0004	<b>64580 0</b>		0.03	50



2CDC 023 191 F0003

SK 0090 B00

Height of cutout/color mm	Width mm	Order details Type code	Order code	Bbn 4012233 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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### Blanking plates

For device covers with materials of a thickness of 1 to 3 mm, width: 1 module = 17.5 mm; color: grey RAL 7035, white RAL 9001

46/grey	213	<b>SZ-BP 1</b>	GH L530 1904 R0001	<b>06050 4</b>			0.028	100
46/white	17.5	<b>SZ-BP</b>	GH S270 1913 R0001	<b>12857 4</b> ①			0.005	
46/grey	17.5	<b>SZ-BP 2</b>	GH S270 1913 R0002	<b>12861 1</b> ①			0.005	
46/grey	220	<b>SZ-BP 12 G</b>	2CDL 000 001 R1220	<b>65227 8</b> ①			0.022	50

Description	Order details Type code	Order code	Bbn 4012233 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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Locking devices for SZ-BP 12 G	<b>SZ-BP R</b>	2CDL 000 001 R1001	<b>652285</b> ①			0.001	30
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① bbn-Nr. 80 00126

### Sealing plate

Seal-proof locking of stamped-out device covers.  
Detachable only from the inside of the device cover.  
Can be used for device covers with 1.5 to 3 mm material thickness.

Height of cutout/color mm	Width mm	Order details Type code	Order code	Bbn 4012233 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
46/grey	1500	<b>SZ-VP 1500</b>	GJ I995 9038 R0001	<b>60290 2</b>			0.366	10

### Rotary operating mechanism

(for operation of MCBs in closed distribution boards).  
Suitable for S 2 classic series and S 200 compact series.

	<b>S2C-DH</b>	GH S200 1901 R0003	<b>57960 5</b> ①			0.01	25
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① bbn-Nr. 4016779

### End bracket

Prevents lateral shifting of built-in devices mounted on DIN rails according to DIN EN 60 715, 35 x 7.5 mm.

	<b>END</b>	GJ I100 1814 R0001	<b>59090 2</b>			0.02	50
--	------------	--------------------	----------------	--	--	------	----

### Filling piece

For e.g. heat dissipation of closely mounted devices that generate much heat.  
Width 8.75 mm, as spacer, two different heights, breakable, for DIN rails according to DIN EN 60 715, 35 x 7.5 mm.

8.75	<b>SZ-FST 2</b>	GH L530 1908 R0002	<b>06070 2</b>			0.01	25
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### Spring piece

Holder for device covers, various heights available (in connection with filling piece FST 2)

	<b>SZ-FDT 2</b>	GH L530 1908 R0005	<b>06080 1</b>			0.002	25
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### Filling piece

Two different heights, breakable, for DIN rails according to DIN EN 60 715, 35 x 7.5 mm for MCBs S 220 (3 different heights)

8.75	<b>SZ-FST</b>	GH I148 0003 R0001	<b>59410 8</b>			0.01	25
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SZ-ES 68/83

SK 0091 B00



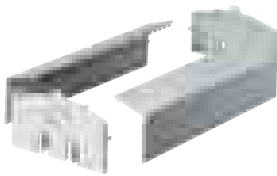
SA 1

SK 0108 B91



SA 2

SK 0109 B91



KA 27 H + KA 27 S



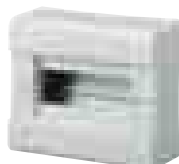
PCD 2 N

SK 0076 B96



PCD 4 N

SK 0077 B96



PCD 8 N

SK 0079 B96

Description	Order details	Bbn	Price	Price	Weight	Pack
	Type code	Order code	1 piece	group	1 piece	unit
					kg	pc.

### Elevation piece

Compensates for different size of built-in devices with a mounting height of 68 mm and power MCBs of series S 500 (83 mm)

SZ-ES 68/83	GH V021 1425 R0001	53390 9			0.003	100
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### Locking device for MCBs and switches

Prevents unauthorised or dangerous operation of the operating lever. An adaptor makes it possible to block the operating lever whether switched ON or OFF. The lever is blocked with a padlock having a cross bar section of 3 or, as the case may be, 6 mm max. For multipole devices, one lock may be fitted per pole.

The lock adaptor can be used for all MCBs of the S 220, S 280 series as well as for switches E 220 and 270.

locking devices	3 mm	SA 1	GJ F110 1903 R0001	58760 5	0.004	10
for padlock bar	6 mm	SA 1E	GJ F110 1903 R0004	58790 2	0.004	10
padlock with 2 keys		SA 2	GJ F110 1903 R0002	58770 4	0.02	10
padlock, identical locking with 2 keys		SA 2 i	GJ F110 9999 R0001	96940 1	0.02	10
lock adaptor incl. padlock with 3 keys in transparent box		SA 3	GJ F110 1903 R0003	58780 3	0.05	10

### Terminal cover KA 27

Provides overall touch protection of live parts. Suitable for installations acc. to DIN EN 50274 (DIN VDE 0660 Part 514) and BGV A2.

End parts can be snapped onto mounting rails EN 60 715, 35 mm. Covers are 486 mm = 27 modules (18 mm each) long. Knockouts for each half module for individualised use.

cover, 1 piece	KA 27 H	GH S210 1933 R0001	13630 8	0.104	10
end part, 1 piece	KA 27 S	GH S210 1934 R0001	13640 7	0.027	10

### Terminal covers with base plate, protection IP 40

Material: high-impact and flame-retardant (UL 94 V-0), color: white (RAL 9001), glow-wire test 960 °C according to IEC 695-2-1

The base plate has an integrated top-hat rail for snap-on fixing of MCBs, RCDs, modular built-in devices, etc.

for 2 modules	PCD 2 N	GH S270 1921 R0002	12402 6①	0.09	1
for 4 modules	PCD 4 N	GH S270 1921 R0004	12404 0①	0.15	1
for 6 modules	PCD 6 N	GH S270 1921 R0006	12406 4①	0.2	1
for 8 modules	PCD 8 N	GH S270 1921 R0008	12408 8①	0.7	1

### Common terminals for terminal covers PCD\*

for PCD 4 N and 6 N	KL-PCD 4/6	GH S270 1912 R0004	12502 3①	0.017	
for PCD 8 N	KL-PCD 8	GH S270 1912 R0008	12592 7①	0.079	

① bbn-No. 80 00126



QES 4/3 N

### Insulated housings IP 55

come with DIN rail according to DIN EN 60 715 and cable entry grommet without N + PE common terminals (see SMO)

Material: high-impact and flame-retardant (UL 94 V-0), color grey (RAL 7035), glow-wire test 960 °C according to IEC 695-2-1

Type with knock-outs ø in mm	Enclosed cable grommets	Order details Type code	Order code	Bbn 8000126 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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#### housings for 4 modules

2 x Ø 27	2	<b>QES 4/3 N</b>	GH L111 2304 R0013	<b>12644 0</b>			0.370	18
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#### housings for 6 modules

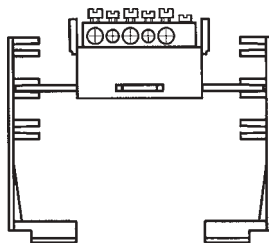
2 x Ø 27	2	<b>QES 6/3 N</b>	GH L111 2306 R0013	<b>12646 4</b>			0.440	12
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#### housings for 10 modules

6 x Ø 32	3	<b>QES 10/3 N</b>	GH L111 2310 R0013	<b>12650 1</b>			0.690	10
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### N + PE common terminals for QES (IP 55)

Neutral and protective-conductor terminals with insulation holder for screw-fixing



SMO...

Description	Order details Type code	Order code	Bbn 4012233 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
for QES 4/3 N	<b>SMO 4</b>	GH L430 1910 R0004	<b>12880 2</b>			0.093	10
for QES 6/3 N	<b>SMO 6</b>	GH L430 1910 R0006	<b>12882 6</b>			0.125	10
for QES 10/3 N	<b>SMO 10</b>	GH L430 1910 R0010	<b>12884 0</b>			0.105	10

For the MCBs S 9.. and the RCBOs DS 9.. series, shunt trips, undervoltage releases and contacts (auxiliary and signal) are available.

These elements provide additional functions and they are all coupled directly to the circuit-breaker without the use of other components such as pins or clips.

The auxiliary contact is equipped with a green indicator which shows the position of the circuit-breaker (when the circuit-breaker is in the "open" position the indicator protrudes). The same indicator also enables a test of the auxiliary circuit.

The signal contact is equipped with a yellow indicator which protrudes out when the circuit-breaker trips. This indicator also resets manually the signal circuit (RESET).

The signal contact is also equipped with a test button (TEST) which tests the signal circuit contact irrespective of the state of the MCB.

On each circuit-breaker in the S 9.. range, up to a maximum of 3 contacts can be used (the signal contact, if necessary, should be installed directly on the circuit-breaker and only one can be used).

Shunt trips and undervoltage releases are equipped with a protruding red indicator which shows opening of the circuit-breaker (if caused by the release).

There are also two versions of the undervoltage releases equipped with a tripping delay of 100 ms (S 9-V24CA and S 9-V24CC types), which prevents unwanted tripping caused by microinterruption or drop in the network voltage which lasts less than 100 ms.



# **ABB** Auxiliary elements and accessories for S 9.. and DS 9.. series

## **Index**

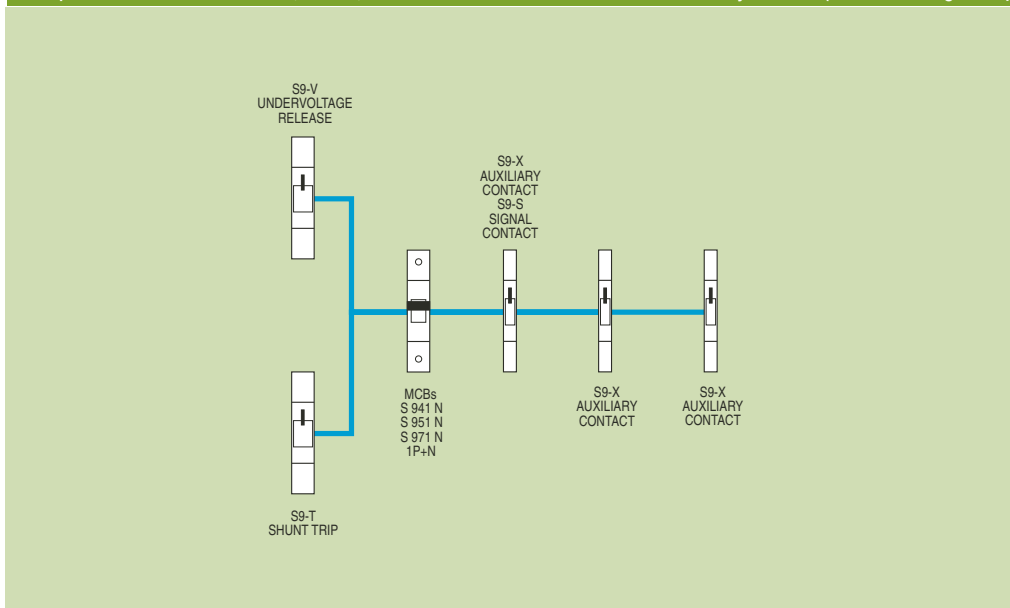
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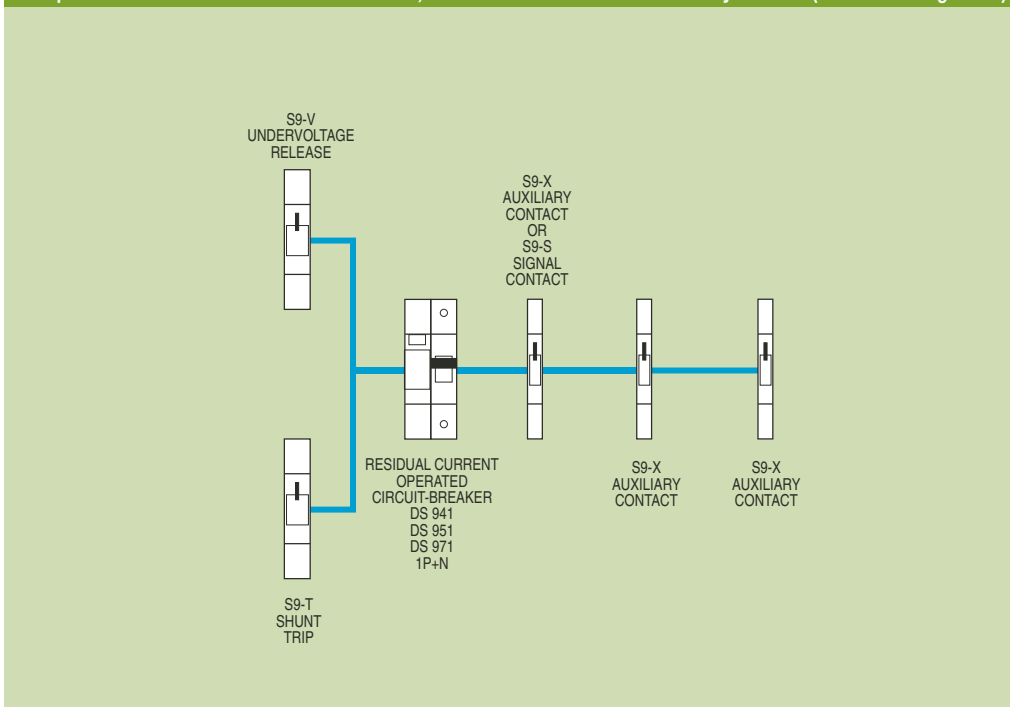
## Schemes for combination Auxiliary elements and accessories for S 9.. and DS 9.. series

4

Examples of combinations of S 931N, S 941N, S 951 N and S 971 N circuit-breakers with auxiliary elements (maximum configuration)



Examples of combination of circuit-breakers DS 941, DS 951 and DS 971 series with auxiliary elements (maximum configuration)

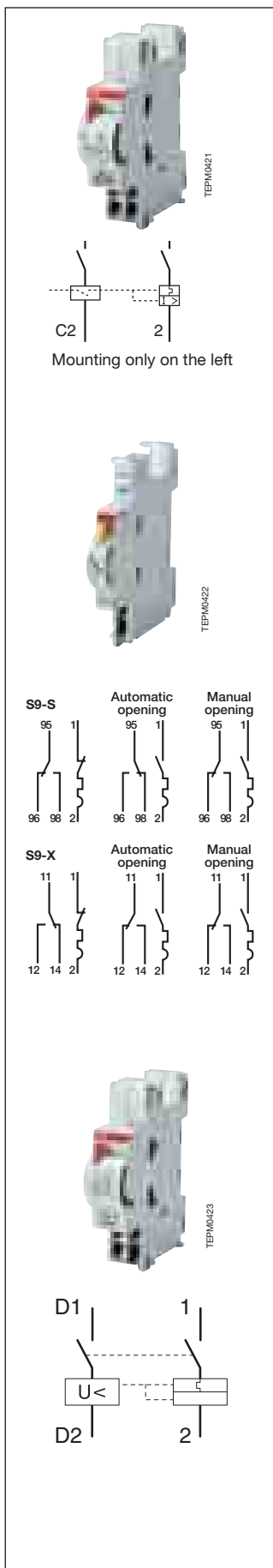


**Technical characteristics of shunt trips**

Type		S9-T24	S9-T130	S9-T415
<b>Voltage</b>	[V] a.c.	12...24	48...130	220...415
	[V] d.c.	12...24	48...60	110...250
<b>Frequency</b>	[V]		50...60	
<b>Consumption on release</b>	[VA]	20 VA (12 V a.c.)	22 VA (48 V a.c.)	40 VA (220 V a.c.)
		90 VA (24 V a.c.)	200 VA (130 V a.c.)	130 VA (415 V a.c.)
		20 VA (12 V d.c.)	22 VA (48 V d.c.)	10 VA (110 V d.c.)
		90 VA (24 V d.c.)		20 VA (250 V d.c.)
<b>Terminals</b>	[mm <sup>2</sup> ]		2x1.5	

**Technical characteristics of undervoltage releases**

Type		S9-V24CA	S9-V24CC	S9-V48CA	S9-V48CC	S9-V230CA
<b>Voltage</b>	[V] a.c.	24	–	48	–	230
	[V] d.c.	–	24	–	48	–
<b>Frequency</b>	[Hz]			50...60		
<b>Consumption on release</b>	[VA]	6	2	4.3	2	4.3
<b>Terminals</b>	[mm <sup>2</sup> ]			2x1.5		



**Shunt trip**

Function: remote opening of the device when a voltage is applied.  
 With transformer TM 30, 10 undervoltage releases S9-T24 at 12 V AC (TM 30/12) and 9 undervoltage releases S9-T24 at 24 V AC (TM 30/24) can be fed.  
 With transformer TM 40, 9 undervoltage releases S9-T24 at 12 V AC (TM 30/12) and 9 undervoltage releases S9-T24 at 24 V AC (TM 30/24) can be fed.  
 Suitable for MCBs S931, S941, S951 and S971 series, RCBOs DS941, DS951 and DS971 series.

Description	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code					
12-24 V a.c./d.c.	<b>S9-T24</b>	16056191	<b>402701</b>			0.100	1
48-130 V a.c./48-60 d.c.	<b>S9-T130</b>	16056209	<b>402800</b>			0.100	1
220-415 V a.c./ 110-250 V d.c.	<b>S9-T415</b>	16056217	<b>402909</b>			0.100	1

**Auxiliary contacts**

Function: indication of the position of the device's contacts.  
 Suitable for MCBs S931, S941, S951 and S971 series, RCBOs DS941, DS951 and DS971 series.

**Signal contacts**

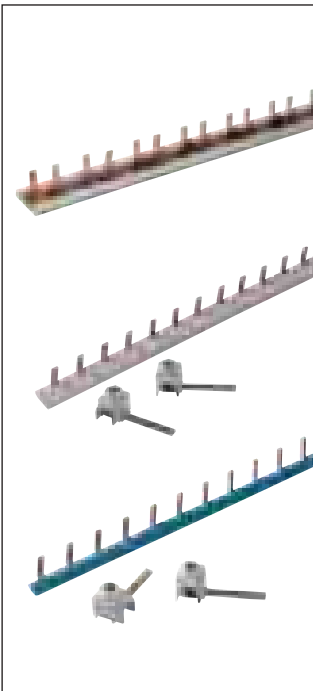
Function: indication of the position of the device's contacts only after the automatic release of the MCBs and RCBOs due to an overload or a short-circuit.  
 Suitable for MCBs S931, S941, S951 and S971 series, RCBOs DS941, DS951 and DS971 series.

Description	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code					
aux. contact 1 NO + 1 NC	<b>S9-X</b>	16056100	<b>372202</b>			0.040	1
signal contact 1 NO + 1 NC	<b>S9-S</b>	16056118	<b>372301</b>			0.040	1

**Undervoltage release**

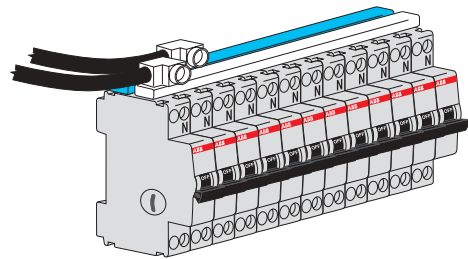
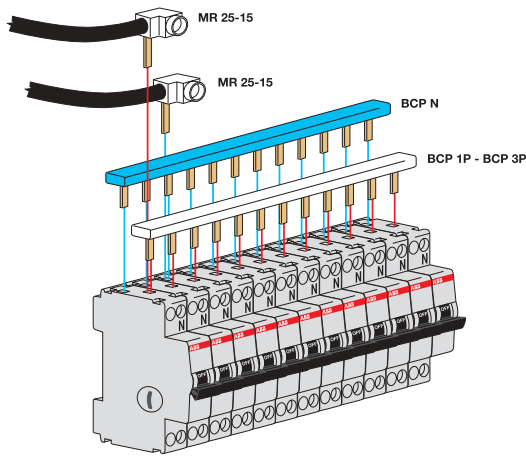
Function: protection of the load in the event of a voltage drop (between 70% and 35% of its rated value); positive safety (device's tripping when the voltage is disconnected) emergency stop by means of a button.  
 Suitable for MCBs S931, S941, S951 and S971 series, RCBOs DS941, DS951 and DS971 series.

Description	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code					
24 V a.c. with delay	<b>S9-V24CA</b>	16056126	<b>372400</b>			0.100	1
24 V d.c. with delay	<b>S9-V24CC</b>	16056134	<b>372509</b>			0.100	1
24 V a.c.	<b>S9-V48CA</b>	16056142	<b>372608</b>			0.100	1
24 V d.c.	<b>S9-V48CC</b>	16056159	<b>372707</b>			0.100	1
230 V a.c.	<b>S9-V230CA</b>	16056167	<b>372806</b>			0.100	1



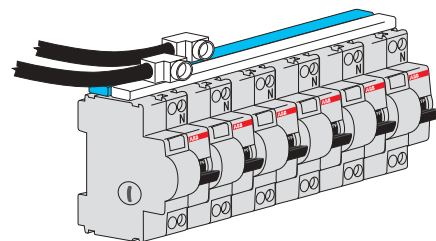
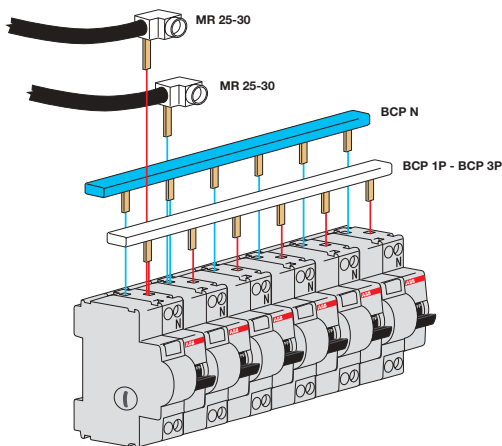
Cross section mm <sup>2</sup>	Lenght mm	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
10	210	BCP 1P - 12 modules pin type	16010958	522607			0.030	10
10	210	BCP N - 12 modules pin type	16010966	522706			0.030	10
10	210	BCP 2P - 12 modules pin type	16010990	523000			0.030	5
10	210	BCP 3P - 12 modules pin type	16011006	523109			0.030	5
10	210	BCP 4P - 12 modules pin type	16011014	523208			0.030	5
25	15	MR 25-15	16011022	523307			0.010	10
25	30	MR 25-30	16011030	523406			0.010	10

Example of application with S 9.. breakers



CEPM0288

Example of application with DS 9.. breakers



CEPM0288

The S 280 and S 280 UC series of MCBs are supported by a whole group of auxiliary elements with many functions and configurations.

Undervoltage releases, shunt trips, auxiliary contacts, signal contacts, mechanical interlocks are available. A wide range of auxiliary elements considerably improves the performance of the MCBs and enables innovative and integrated solutions to be used in every installation.

The S 290 circuit-breakers are supplied with special shunt trips, undervoltage releases and contacts (auxiliary and signal). All the accessories are installed to the right of the circuit-breaker. The left part is used for installing RCD blocks.

For the S 500 range of MCBs, shunt trips, undervoltage releases and contacts (auxiliary and signal) are available. Only the auxiliary contacts can be mounted by the installer; the undervoltage releases and shunt trips are factory fitted to the MCBs and, for this reason, cannot be ordered separately. The S 500 circuit-breakers are also equipped with a rotary drive with the possibility of selection from different rotary handle.





# Auxiliary elements and accessories for MCBs S 280, S 290 and S 500 series



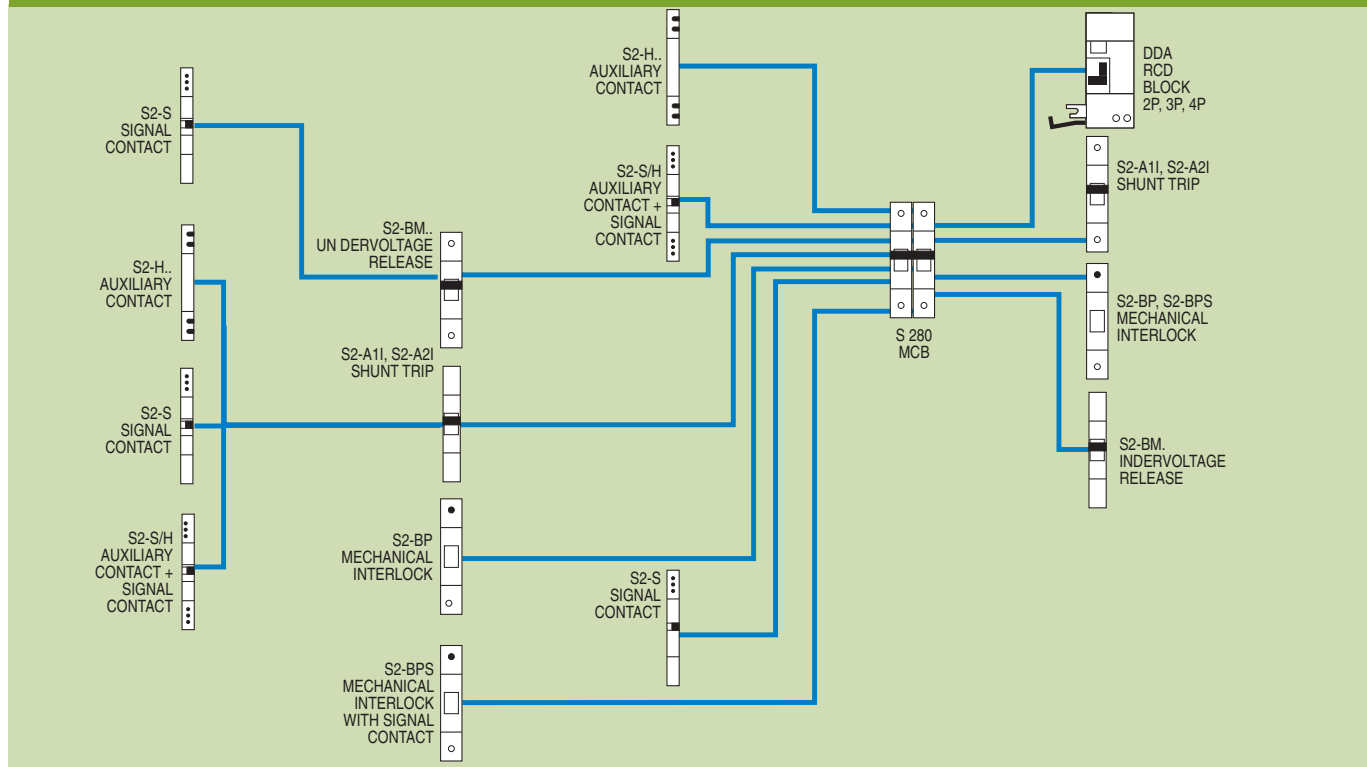
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# Schemes for combination and technical features

## Auxiliary elements for MCBs S 280 series

Examples of combinations of S 280 series circuit-breakers with auxiliary elements (maximum configuration)



### Technical characteristics of auxiliary and signal contacts

Type	S2-H11 I S2-H11 X	S2-H20 I S2-H20 X	S2-H02 I S2-H02 X	S2-H21	S2-H12	S2-H30	S2-H03
Description	1NO+1NC	2NO	2NC	2NO+1NC	1NO+2NC	3NO	3NC
Alternating current	Ue [V]			240 415			
	Ie [A]			6 2			
Direct current	Ue [V]		24	60 110 250			
	Ie [A]		4	2 1.5 1			
Min. operating voltage	[V]			12 a.c.-12 d.c.			
Min. operating current	[mA]			12			
Terminals	[mm <sup>2</sup> ]			up to 2x1.5			
Dielectric strength	[kV]			3			
Resistance to short-circuit at 240 V a.c.	[A]		1000 (protected with S 2 breaker characteristic K - 6 A)				
Impulse voltage withstand capacity	[kV]			4			
Tightening torque	[Nm]			0.7			
Dimensions (WxDxH)	[mm]			8.75x68x90			

NB: the auxiliary contacts S2-H11 X, S2-H20 X, S2-H02 X differ from the contacts S2-H11, S2-H20, S2-H02 in that they do not have a terminal to tighten the cable which is replaced by a bayonet for the Faston connection.

### Technical characteristics of undervoltage releases

Type	S2-BM1	S2-BM2	S2-BM3	S2-BM4	S2-BM5	S2-BM6
Standards						
Rated voltage	[V] a.c.	-	24	48	110	220-240
	[V] d.c.	12	24	48	110	220
Frequency	[Hz]			50...60		
Release trip	[V]			0.35 Un ≤ V ≤ 0.7 Un		
Terminals	[mm <sup>2</sup> ]			2 x 1.5		
Consumption	[mA]			10		
Resistance to corrosion	[°C/RH]		const. climatic cond.: 23/83-40/93-55/20; var. climatic cond.: 25/95-40/93			
Protection degree				IPXXB/IP2X		
Tightening torque	[Nm]			0.4		
Dimensions (WxDxH)	[mm]			17.5x68x90		

**Technical characteristics of shunt trips**

Type		S2-A1	S2-A2
<b>Rated voltage</b>	[V]		
	a.c.	12 - 60	110 - 415
	d.c.	12 - 60	110 - 250
<b>Max. release duration</b>	[ms]	<10	<10
<b>Min. release voltage</b>	[V]		
	a.c.	7	55
	d.c.	10	80
<b>Consumption on release</b>	[VA]		
	12 V a.c.	35	
	12 V d.c.	30	
	24 V a.c.	140	
	24 V d.c.	100	
	48 V a.c.	600	
	48 V d.c.	330	
	110 V a.c.		40
	110 V d.c.		40
	220 V a.c.		180
220 V d.c.		170	
<b>Coil resistance</b>	[Ω]	3.7	225
<b>Terminals</b>	[mm <sup>2</sup> ]	25	25
<b>Tightening torque</b>	[Nm]	2	2
<b>Dimens.(WxDxH)</b>	[mm]	17.5x68x90	17.5x68x90

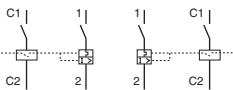
S2-S		S2-SH	
1 change over		2 change over	
	240	415	
	6	2	
250	110	60	24
0.5	1	1	4
12 a.c.-12 d.c.			
12			
up to 2x1.5			
3			
1000 (protected with S 2 breaker characteristic K - 6 A)			
4			
0.7			
8.75x68x90			





TEPM0135

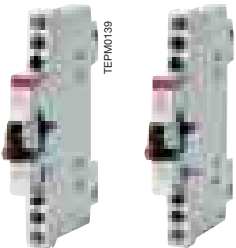
S2-A1 I,  
S2-A2 I



4



TEPM0138



TEPM0139

TEPM0140

Description	Order details		Bbn 4012233 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code					

### Shunt trip

Function: remote opening of the device when a voltage is applied  
Suitable for MCBs S280 and S280 UC series

12-60 VAC/VDC shunt trip	<b>S2-A1</b>	GH S280 1909 R0001	<b>42930 1</b>			0.145	1
110-415 VAC and 110-250 VDC shunt trip	<b>S2-A2</b>	GH S280 1909 R0002	<b>42940 0</b>			0.145	1

### Auxiliary contacts

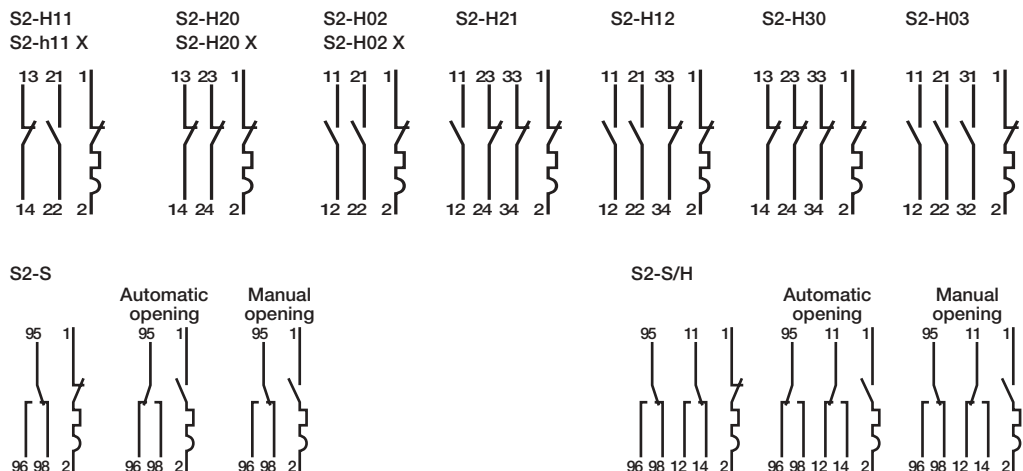
Function: indication of the position of the device's contacts  
Suitable for MCBs S280 and S280 UC series

### Signal contacts

Function: indication of the position of the device's contacts only after the automatic release of the MCBs and RCBOs due to an overload or a short-circuit  
Suitable for MCBs S280 and S280 UC series

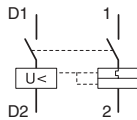
Auxiliary contact 1 NO + 1 NC (1/2 module)	<b>S2-H11</b>	GH S270 1916 R0001	<b>61500 1</b>			0.04	1
Auxiliary contact 2 NO (1/2 module)	<b>S2-H20</b>	GH S270 1916 R0002	<b>61510 0</b>			0.04	1
Auxiliary contact 2 NC (1/2 module)	<b>S2-H02</b>	GH S270 1916 R0003	<b>61520 9</b>			0.04	1
Auxiliary contact 1 NO + 1 NC (1/2 module) with Faston connections	<b>S2-H11X</b>	GH S270 1917 R0001	<b>61530 8</b>			0.04	1
Auxiliary contact 2 NO (1/2 module) with Faston connections	<b>S2-H20X</b>	GH S270 1917 R0002	<b>61540 7</b>			0.04	1
Auxiliary contact 2 NC (1/2 module) with Faston connections	<b>S2-H02X</b>	GH S270 1917 R0003	<b>61550 6</b>			0.04	1
Auxiliary contact 2 NO + 1 NC (1/2 module)	<b>S2-H21</b>	GH S270 1936 R0001	<b>01370 3*</b>			0.05	1
Auxiliary contact 1 NO + 2 NC (1/2 module)	<b>S2-H12</b>	GH S270 1936 R0002	<b>01380 2*</b>			0.05	1
Auxiliary contact 3 NO (1/2 module)	<b>S2-H30</b>	GH S270 1936 R0003	<b>01390 1*</b>			0.05	1
Auxiliary contact 3 NC (1/2 module)	<b>S2-H03</b>	GH S270 1936 R0004	<b>01400 7*</b>			0.05	1
Signal contact (1/2 module)	<b>S2-S</b>	GH S280 1925 R0001	<b>12770 7*</b>			0.07	1
Signal contact + Auxiliary contact (1/2 module)	<b>S2-S/H</b>	GH S280 1901 R0008	<b>42900 4</b>			0.05	1

\* Bbn 4016779





TEPM0145



**Undervoltage release**

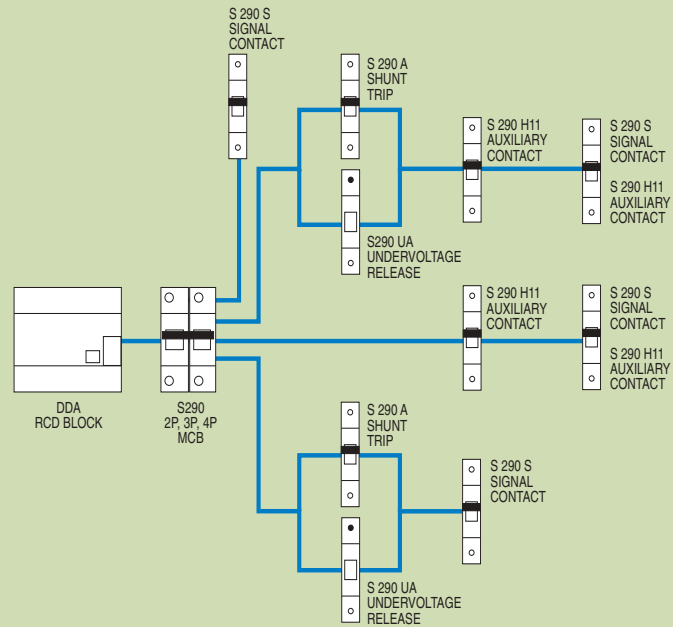
Function: protection of the load in the event of a voltage drop (between 70% and 35% of its rated value); positive safety (device's tripping when the voltage is disconnected) emergency stop by means of a button.

Suitable for MCBs S280 and S280 UC series

Undervoltage release 12V DC (1 module)	<b>S2-UA 12</b>	GH S280 1911 R0001	<b>42970 7</b>	0.09	1
Undervoltage release 24V AC/DC (1 module)	<b>S2-UA 24</b>	GH S280 1911 R0002	<b>42980 6</b>	0.09	1
Undervoltage release 48V AC/DC (1 module)	<b>S2-UA 48</b>	GH S280 1911 R0003	<b>79360 0</b>	0.09	1
Undervoltage release 110V AC/DC (1 module)	<b>S2-UA 110</b>	GH S280 1911 R0004	<b>43000 0</b>	0.09	1
Undervoltage release 220V AC/DC (1 module)	<b>S2-UA 220</b>	GH S280 1911 R0005	<b>43010 9</b>	0.09	1
Undervoltage release 380V AC (1 module)	<b>S2-UA 380</b>	GH S280 1911 R0006	<b>79370 9</b>	0.09	1
Hand operated neutral	<b>S2-NT</b>	GH S270 1908 R0001	<b>36610 1</b>	0.06	1

## Schemes for combination Auxiliary elements and accessories for MCBs S 290 series

Examples of combinations of S 290 series circuit-breakers with auxiliary elements (maximum configurations)



**Technical characteristics of shunt trips**

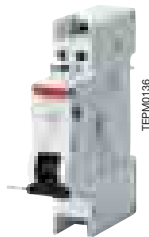
Type		S 290 A1	S 290 A2
Rated voltage	[V] a.c.	110...415	24...48
	d.c.	110...250	24...48
Max. release duration	[ms]	<10	<10
Consumption on release	[VA] a.c.	20...180	40...200
	d.c.	20...180	40...200
Terminals	[mm <sup>2</sup> ]	25	25
Tightening torque	[Nm]	2	2
Dimensions (WxDxH)	[mm]	17.5x68x90	17.5x68x90

**Technical characteristics of auxiliary and signal contacts**

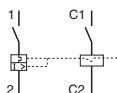
Type		S290 H11 S290 S
Description		1NO+1NC
Alternating current (AC 13)	Ue [V]	230/400
	Ie [A]	6/2
Direct current (DC 13)	Ue [V]	24/60/110/220
	Ie [A]	6/3/1/1
Min. operating voltage	[V]	12 a.c.-12 d.c.
Min. operating current	[mA]	5
Terminals	[mm <sup>2</sup> ]	0.5...2.5
Dielectric strength	[kV]	3
Resistance to short-circuit at 240 V a.c.	[A]	1000 (protected with breaker char. K 6 A)
Impulse voltage withstand capacity	[kV]	4
Tightening torque	[Nm]	1
Dimensions (WxDxH)	[mm]	8.75x68x90

**Technical characteristics of undervoltage releases**

Type		S 290-UA 230
Standards		VDE0660 part I - IEC EN 60947.1
Rated voltage	[V] a.c.	230
	[V] d.c.	-
Frequency	[Hz]	50...60
Release trip threshold	[V]	0.35 Un ≤ V ≤ 0.7 Un
Terminals	[mm <sup>2</sup> ]	2x1.5
Consumption	[mA]	10
Resistance to corrosion	[°C/RH]	constant atmosphere: 23/83-40/93-55/20; variable atmosphere: 25/95-40/93
Protection degree		IPXXB/IP2X
Tightening torque	[Nm]	0.4
Dimensions (WxDxH)	[mm]	17.5x68x90



S 290 A1  
S 290 A2



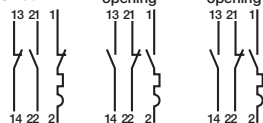
TEPM0136



S 290-H11

Automatic opening

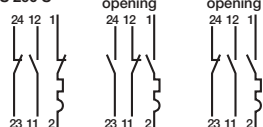
Manual opening



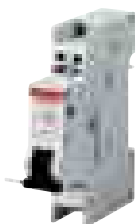
S 290 S

Automatic opening

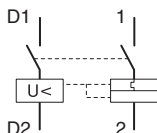
Manual opening



TEPM0141



TEPM01432



Description	Order details	Bbn	Price	Price	Weight	Pack
	Type code	Order code	1 piece	group	1 piece	unit
					kg	pc.

### Shunt trip

Function: remote opening of the device when a voltage is applied  
Suitable for MCBs S290 series

110-415V AC/110 DC shunt trip	<b>S290 A1</b>	GH S290 1909 R0011	<b>57033 6</b>		0,09	1
24-48V AC/DC	<b>S290 A2</b>	GH S290 1909 R0012	<b>57034 3</b>		0,09	1

### Auxiliary contacts

Function: indication of the position of the device's contacts  
Suitable for MCBs S290 series

### Signal contacts

Function: indication of the position of the device's contacts only after the automatic release of the MCBs and RCBOs due to an overload or a short-circuit  
Suitable for MCBs S290 series

Auxiliary contact 1 NO + 1 NC (1/2 module)	<b>S290 H11</b>	GH S290 1916 R0011	<b>57031 2</b>		0,05	1
Signal contact (1/2 module)	<b>S 290-S11</b>	GH S290 1902 R0018	<b>57032 9</b>		0,05	1

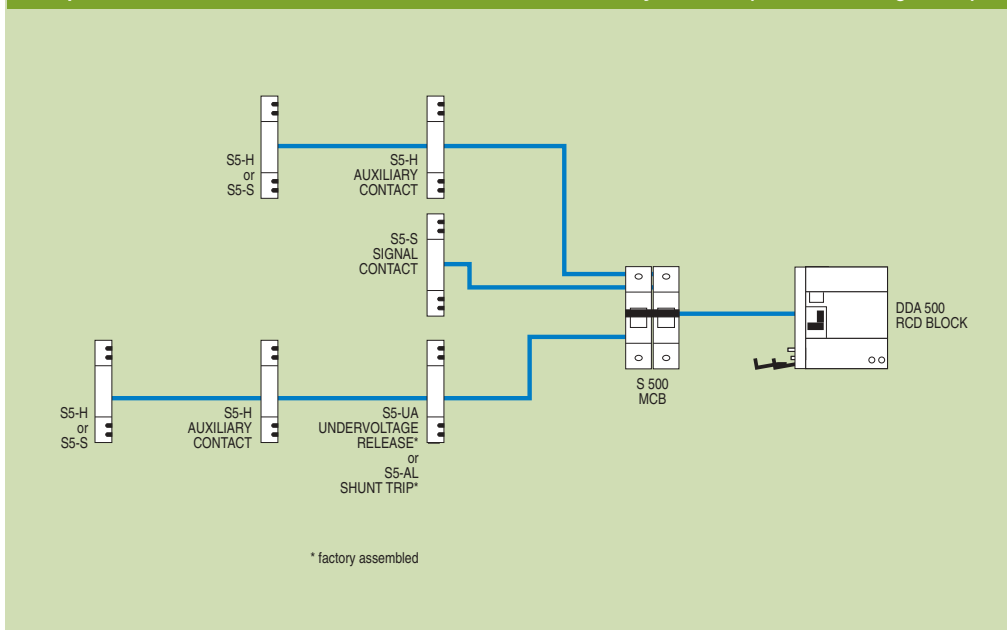
### Undervoltage release

Function: protection of the load in the event of a voltage drop (between 70% and 35% of its rated value); positive safety (device's tripping when the voltage is disconnected) emergency stop by means of a button.

Suitable for MCBs S290 series

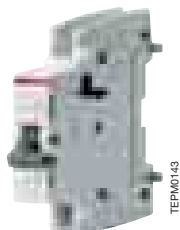
Undervoltage release DC 24 V	<b>S 290-UA 24</b>	GH S290 1911 R0012	<b>57035 0</b>		0,09	1
Undervoltage release DC 110 V	<b>S 290-UA 110</b>	GH S290 1911 R0014	<b>57036 7</b>		0,09	1
Undervoltage release AC 230 V	<b>S 290-UA 230</b>	GH S290 1911 R0015	<b>57037 4</b>		0,09	1

Example of combination of S 500 series circuit-breakers with auxiliary elements (maximum configuration)



**Technical characteristics of auxiliary and signal contacts**

Type	S5-H11	S5-H20	S5-S11	S5-S20
Description	1NO + 1NC	2NO	1NO + 1NC	2NO
Alternating current	Ue [V]	230	400	
	Ie [A]	2	1	
Direct current	Ue [V]		220	
	Ie [A]		0.5	
Min. operating voltage	[V]	12 a.c.-12 d.c.		
Min. operating current	[mA]	10		
Terminals	[mm <sup>2</sup> ]	0.5x2.5		
Dielectric strength	[kV]	3		
Resistance to short-circuit at 240 V a.c.	[A]	1000 (protected with S 2 breaker characteristic K 6 A)		
Impulse voltage withstand capacity	[kV]	4		
Tightening torque	[Nm]	1		
Dimensions (WxDxH)	[mm]	12.5x92x92.5		

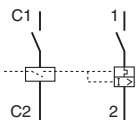


TEPM0143



TEPM0144

S5 AL



Installation only on left

Description	Order details	Bbn	Price	Price	Weight	Pack
Type code	Order code	7612270	1 piece	group	1 piece	unit
		EAN			kg	pc.

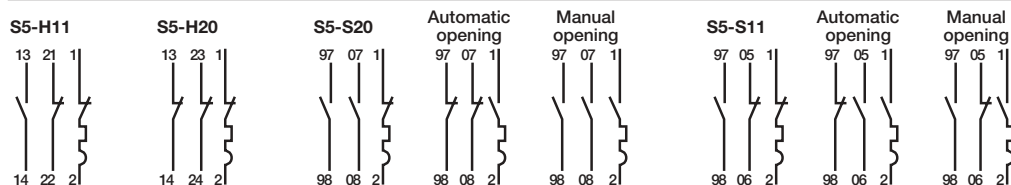
### Auxiliary contacts

Function: indication of the position of the device's contacts  
Suitable for MCBs S500 series

### Signal contacts

Function: indication of the position of the device's contacts only after the automatic release of the MCBs and RCBOs due to an overload or a short-circuit  
Suitable for MCBs S500 series

Auxiliary contact 1 NO + 1 NC (12,5 mm)	<b>S5-H11</b>	GH S500 1904 R0003	<b>30550 6</b>			1
Auxiliary contact 2 NO (12,5 mm)	<b>S5-H20</b>	GH S500 1904 R0004	<b>30551 3</b>			1
Signal contact 1 NO + 1 NC (12,5 mm)	<b>S5-S11</b>	GH S500 1905 R0003	<b>30553 7</b>			1
Signal contact 2 NO (12,5 mm)	<b>S5-S20</b>	GH S500 1905 R0004	<b>30554 4</b>			1



### Shunt trip

Function: remote opening of the device when a voltage is applied  
Suitable for MCBs S500 series

Shunt trip 24V AC/DC	<b>S5 AL 24V</b>	*		1
Shunt trip 110V AC/DC	<b>S5 AL 110V</b>	*		1
Shunt trip 220V AC/DC	<b>S5 AL 220V</b>	*		1
Shunt trip 400V AC/DC	<b>S5 AL 400V</b>	*		1

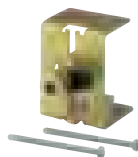
### Undervoltage release

Function: protection of the load in the event of a voltage drop (between 70% and 35% of its rated value); positive safety (device's tripping when the voltage is disconnected) emergency stop by means of a button.

Suitable for MCBs S500 series

Undervoltage release 24V AC (1 module)	<b>S5-UA 24V ca</b>	*		1
Undervoltage release 110V AC (1 module)	<b>S5-UA 110V ca</b>	*		1
Undervoltage release 230V AC (1 module)	<b>S5-UA 230V ca</b>	*		1
Undervoltage release 400V AC (1 module)	<b>S5-UA 400V ca</b>	*		1
Undervoltage release 24V DC (1 module)	<b>S5-UA 24V cc</b>	*		1
Undervoltage release 110V DC (1 module)	<b>S5-UA 110V cc</b>	*		1
Undervoltage release 230V DC (1 module)	<b>S5-UA 230V cc</b>	*		1
Undervoltage release 400V DC (1 module)	<b>S5-UA 400V cc</b>	*		1

\* The S5 AL and S5 UA type shunt trip must be ordered with the S500 circuit breaker, since they are installed directly in the factory (they cannot be installed by the customer)



**S500 RD3**



**S500 H2B1**

**S500 H2B2**



**S500 H8B**



**S500 H8Y**



**S500 S51**

**S500 S52**

**S500 S56**

Description	Order details	Bbn	Price	Price	Weight	Pack
	Type code	Order code	1 piece	group	1 piece	unit
					kg	pc.

### Intermediate piece for compensating unit widths

<b>S500-F1</b>	GH S500 1011 R0001	<b>30571 1</b>				
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### Busbars terminal with insulating cover for feeding three-phase busbar system

<b>S500-L 1</b>	GH S500 1201 R0001	<b>30558 2</b>			0.012	1
<b>S500-L 2</b>	GH S500 1202 R0001	<b>30559 9</b>			0.014	1
<b>S500-L 3</b>	GH S500 1203 R0001	<b>30560 5</b>			0.016	1
<b>S500-N</b>	GH S500 1204 R0001	<b>30561 2</b>			0.018	1

### Flush mounting

insertion width 38 mm	<b>S500-ME 1</b>	GH S500 1008 R0001	<b>30590 2</b>		0.097	1
insertion width 88 mm	<b>S500-ME 2</b>	GH S500 1008 R0002	<b>30591 9</b>		0.097	1
insertion width 184 mm	<b>S500-ME 3</b>	GH S5001008 R0003	<b>30592 6</b>		0.097	1

### Terminal insulated for rear connection of main contact

<b>S500-K 1</b>	GH S500 1210 R0001	<b>30585 8</b>			0.013	1
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### Rotary drive for 5 mm spindles

1-3 poles	<b>S500-RD 3</b>	GH S500 1023 R0001	<b>30600 8</b>			1
4-6 poles	<b>S500-RD 4</b>	GH S500 1023 R0002	<b>30601 5</b>			1

### Busbars with insulating cover

for 8 x S 502	<b>S500-BB 28</b>	GH S500 1228 R0001	<b>50368 1</b>			1
for 8 x S 503	<b>S500-BB 38</b>	GH S500 1238 R0001	<b>50370 4</b>			1
for 13 x S 503	<b>S500-BB 313</b>	GH S500 1213 R0001	<b>51043 3</b>			1
end cap	<b>S500-EK</b>	GH S500 1299 R0001	<b>51045 0</b>			

### Line terminal insulated

max. 70 mm<sup>2</sup>

Cu-cable or strand	<b>S500-K 2</b>	GH S500 1210 R0002	<b>50371 1</b>			1
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SPDs protect installations by limiting transient overvoltages and run-off lightning currents for electric and electronic equipment. They are divided into three families.

- **Type 1 SPDs** provide incoming protection for an installation which is located in a high lightning strike density area, and they are installed in the MSB (Main Switch Board).

- **Type 1+2 SPDs** also provide incoming protection but they can be installed close to the equipment to be protected.

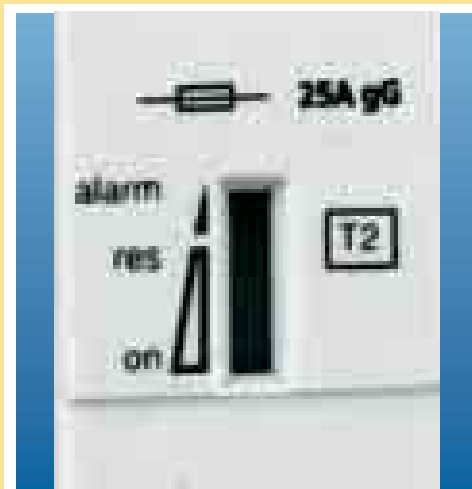
- **Type 2 SPDs** provide protection for equipment against transient overvoltage and they are installed in the Main Switch Board (MSB) in a low lightning strike density area, or in the Sub-Distribution Board (SDB), in coordination with a Type 1 SPD.

In addition to the standard SPDs, two options are available: the Safety reserve system and the remote indication (TS), in order to ensure a preventive maintenance of the installation.

New SPDs System pro M compact range presents a wide offer for all the three families, respectively OVR T1, OVR T1+2 and OVR T2 series.

ABB SPDs offer the same "plus" advantages of the other System pro M compact devices, in order to get a perfect compatibility with all the modular range of products.

All these SPDs comply with the international standard IEC 61643-1 and the European standard EN 61643-11.





## Other modular devices Surge Protection Devices: OVR range

### Index

Technical features of SPDs .....	5/2
Selection tables of SPDs .....	5/4



5

TECHNICAL FEATURES		
Electrical features	Standards	
	Type / test class	
	Poles	
	Types of networks	
	Type of current	
	Nominal voltage Un	V
	Max. cont. operating voltage Uc	(L-N / N-PE) V
	Voltage protection level Up at In	(L-N / N-PE) kV
	Nominal discharge current In (8/20)	kA
	Maximal discharge current I <sub>max</sub> (8/20)	kA
	Impulse current I <sub>imp</sub> (10/350)	kA
	TOV withstand Ut (5s.)	V
	Follow current I <sub>f</sub>	kA
	Operating current I <sub>c</sub>	mA
	Short circuit withstand I <sub>cc</sub>	kA
	Disconnectors	
	gG - gL fuse	A
curve C circuit breaker	A	
Mechanical features	Stocking temperature	°C
	Operating temperature	°C
	Degree of protection	
	Fire resistance according to UL 94	
	Colour of Housing	
	Maximal altitude	m
	Integrated thermal disconnectors	
	State indicator	
	Compatibility with OVR Sign	
	Safety reserve	
TS remote indicator		
Installation	Wire range L/N	
	solid wire	mm <sup>2</sup>
	stranded wire	mm <sup>2</sup>
	Stripping length L/N	mm
	Tightening torque L/N	Nm
	Wire range PE	
	solid wire	mm <sup>2</sup>
	stranded wire	mm <sup>2</sup>
Stripping length PE	mm	
Tightening torque PE	Nm	
Dimensions and weight	Pole dimensions (H x D x W)	mm
	Pole weight	g
<b>TECHNICAL FEATURES OF THE INTEGRATED AUXILIARY CONTACT</b>		
Electrical features	Type of contacts	
	Min. load	
	Max. load	
Installation	Connection cross-section	mm <sup>2</sup>



Type 1	Type1+2	Type 2
IEC 61643-1 / EN 61643-11	IEC 61643-1 / EN 61643-11	IEC 61643-1 / EN 61643-11
T1 / I	T1 / I	T2 / II
1P / 1P+N / 2P / 3P / 3P+N / 4P	1P	1P / 1P+N / 3P / 3P+N / 4P
TT - TNS - TNC	TT - TNS - TNC	TNS - TT - TNC - IT
A.C.	A.C.	A.C.
230	230	230 / 400
255	255	275 / 440
2.5	1.5	1.2 - 1.8
25	25	5 / 15 / 20 / 30
/	/	15 / 40 / 70
25	25	/
400	334	334 / 400
50	15	None
< 1	< 1	< 1
50	50	50
125	125	16 - 20
/	/	10 - 32
-40 to +80	-40 to +80	-40 to +80
-40 to +80	-40 to +80	-40 to +80
IP 20	IP 20	IP 20
V0	V0	V0
Grey RAL 7035	Grey RAL 7035	PC grey RAL 7035
2000	2000	2000
No	Yes	Yes
No	Yes	Yes
No	No	Yes
No	No	Option
Option	Yes	Option
2.5 ... 50	2.5 ... 50	2.5 ... 25
2.5 ... 35	2.5 ... 35	2.5 ... 16
15	15	12.5
3.5	3.5	2.8
2.5 ... 50	2.5 ... 50	2.5 ... 25
2.5 ... 35	2.5 ... 35	2.5 ... 16
15	15	12.5
3.5	3.5	2.8
85 x 58 x 35	85 x 58 x 35	85 x 58 x 17.5
250	250	120
1NO (1 make contact), 1NC (1 normally closed contact)	1NO (1 make contact), 1NC (1 normally closed contact)	1NO (1 make contact), 1NC (1 normally closed contact)
6V D.C. - 10 mA	12V D.C. - 10 mA	12V D.C. - 10 mA
250V A.C. - 5 A	250V A.C. - 1 A	250V A.C. - 1A
1.5	1.5	1.5

### Surge Protection devices, Type 1 / Type 1+2

Function: Type 1 SPDs provide incoming protection against direct lightning strike, and they are installed in the Main Switch Board (MSB); the maximum impulse current Iimp is 25 kA, based on spark gap technology. Type 1+2 SPDs also provide incoming protection with a very low protection level (Up = 1.5 kV) and they are installed close to the equipment to be protected; the maximum impulse current Iimp is 25 kA.

Application: commercial, industrial

Standard: CEI 61643-1 / EN 61643-11

10/350 current wave

#### Type 1 - Surge Protection Devices

Impulse current Iimp	Follow current If	Protection level Up	Nominal voltage Un	Max. cont. operating voltage Uc	Order details	Bbn	Price	Price group	Weight	Pack
kA	kA	kV	V	V	Type code	Order code	EAN		kg	pc.

#### Single pole

25	50	2.5	230	255	<b>OVR T1 25 255</b>	2CTB815101R0100	<b>510877</b>		0.25	1
50	0.1	2.5	0	255	<b>OVR T1 50 N</b>	2CTB815101R0400	<b>510853</b>		0.25	1
100	0.1	4.0	0	255	<b>OVR T1 100 N</b>	2CTB815101R0500	<b>510860</b>		0.25	1

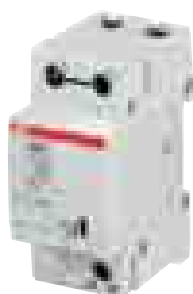
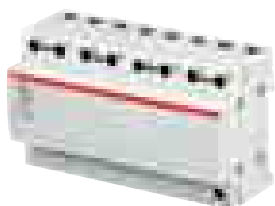
#### Multipole

25	50	2.5	230	255	<b>OVR T1 1N 25 255</b>	2CTB815101R1500	<b>510921</b>		0.50	1
25	50	2.5	230	255	<b>OVR T1 2L 25 255</b>	2CTB815101R1200	<b>510891</b>		0.50	1
25	50	2.5	230	255	<b>OVR T1 3L 25 255</b>	2CTB815101R1300	<b>510907</b>		0.75	1
25	50	2.5	230	255	<b>OVR T1 4L 25 255</b>	2CTB815101R1400	<b>510914</b>		1.00	1
25	50	2.5	230	255	<b>OVR T1 3N 25 255</b>	2CTB815101R1600	<b>510938</b>		1.00	1
25	50	2.5	230	255	<b>OVR T1 1N 25 255 TS</b>	2CTB815101R1000	<b>510921</b>		0.50	1
25	50	2.5	230	255	<b>OVR T1 2L 25 255 TS</b>	2CTB815101R1100	<b>510891</b>		0.50	1
25	50	2.5	230	255	<b>OVR T1 3L 25 255 TS</b>	2CTB815101R0600	<b>510952</b>		0.85	1
25	50	2.5	230	255	<b>OVR T1 4L 25 255 TS</b>	2CTB815101R0800	<b>510969</b>		1.10	1
25	50	2.5	230	255	<b>OVR T1 3N 25 255 TS</b>	2CTB815101R0700	<b>510983</b>		1.10	1

#### Type 1+2 - Surge Protection Devices

#### Single pole

25	15	1.5	230	255	<b>OVR T1+2 25 255 TS</b>	2CTB815101R0300	<b>510884</b>		0.30	1
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### Surge Protection devices, Type 2

Function: Type 2 SPDs provide protection for equipment against transient overvoltage (indirect lightning strike) that occur on the electrical network (mains); the maximum discharge current (I<sub>max</sub>) ranges from 15 to 70 kA, based on MOV technology.

Application: residential, commercial, industrial

Standard: CEI 61643-1 / EN 61643-11

8/20 current wave

#### Type 2 - Surge Protection Devices

Impulse current I <sub>imp</sub>	Follow current I <sub>f</sub>	Protection level U <sub>p</sub>	Nominal voltage U <sub>n</sub>	Max. cont. operating voltage U <sub>c</sub>	Order details	Bbn 3660308	Price 1 piece	Price group	Weight 1 piece	Pack unit
kA	kA	kV	V	V	Type code	Order code	EAN		kg	pc.

#### Single pole

15	5	1.0	230	275	<b>OVR T2 15 275 P</b>	2CTB803851R2400	<b>512840</b>		0.12	1
15	5	1.5	400	440	<b>OVR T2 15 440 P</b>	2CTB803851R1100	<b>512772</b>		0.12	1
40	20	1.4	230	275	<b>OVR T2 40 275 P</b>	2CTB803851R2300	<b>512833</b>		0.12	1
40	20	1.4	230	275	<b>OVR T2 40 275s P TS</b>	2CTB803851R1400	<b>512802</b>		0.15	1
40	20	1.9	400	440	<b>OVR T2 40 440 P</b>	2CTB803851R1200	<b>512789</b>		0.12	1
40	20	1.9	400	440	<b>OVR T2 40 440s P TS</b>	2CTB803851R0200	<b>512741</b>		0.15	1
70	30	1.5	230	275	<b>OVR T2 70 275s P TS</b>	2CTB803851R1300	<b>512796</b>		0.15	1
70	30	2.0	400	440	<b>OVR T2 70 440s P TS</b>	2CTB803851R0100	<b>512734</b>		0.15	1

#### Multipole

15	5	1.0/1.4	230	275/440	<b>OVR T2 1N 15 275 P</b>	2CTB803952R1200	<b>513106</b>		0.22	1
15	5	1.0/1.4	230	275/440	<b>OVR T2 3N 15 275 P</b>	2CTB803953R1200	<b>513151</b>		0.45	1
15	5	1.0	230	275	<b>OVR T2 3L 15 275 P</b>	2CTB803853R3400	<b>512987</b>		0.35	1
15	5	1.0	230	275	<b>OVR T2 4L 15 275 P</b>	2CTB803853R6000	<b>513038</b>		0.45	1
40	20	1.4/1.4	230	275/440	<b>OVR T2 1N 40 275 P</b>	2CTB803952R1100	<b>513250</b>		0.27	1
40	20	1.4/1.4	230	275/440	<b>OVR T2 1N 40 275s P TS</b>	2CTB803952R0200	<b>513076</b>		0.27	1
40	20	1.4/1.4	230	275/440	<b>OVR T2 3N 40 275 P</b>	2CTB803953R1100	<b>513267</b>		0.45	1
40	20	1.4/1.4	230	275/440	<b>OVR T2 3N 40 275s P TS</b>	2CTB803953R0200	<b>513120</b>		0.50	1
40	20	1.4	230	275	<b>OVR T2 3L 40 275 P</b>	2CTB803853R2400	<b>513366</b>		0.35	1
40	20	1.4	230	275	<b>OVR T2 3L 40 275s P TS</b>	2CTB803853R2300	<b>512970</b>		0.40	1
40	20	1.4	230	275	<b>OVR T2 4L 40 275 P</b>	2CTB 803853R5600	<b>513274</b>		0.45	1
40	20	1.4	230	275	<b>OVR T2 4L 40 275s P TS</b>	2CTB803853R5000	<b>513014</b>		0.50	1
70	30	1.5/1.4	230	275/440	<b>OVR T2 1N 70 275s P TS</b>	2CTB803952R0100	<b>513069</b>		0.27	1
70	30	1.5/1.4	230	275/440	<b>OVR T2 3N 70 275s P TS</b>	2CTB803953R0100	<b>513113</b>		0.50	1
70	30	1.5	230	275/440	<b>OVR T2 3L 70 275s P TS</b>	2CTB803853R4400	<b>513007</b>		0.40	1
70	30	1.5	230	275/440	<b>OVR T2 4L 70 275s P TS</b>	2CTB803919R0400	<b>513052</b>		0.50	1

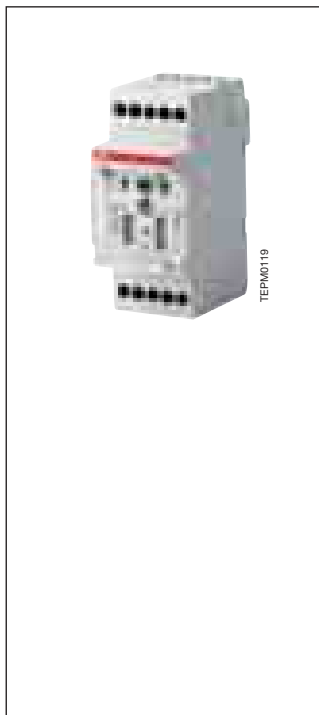
#### Replacement cartridges for Surge Protection Devices (Type 2)

15	5	1.0	230	275	<b>OVR T2 15 275 C</b>	2CTB803854R1200	<b>513168</b>		0.10	1
15	5	1.5	400	440	<b>OVR T2 15 440 C</b>	2CTB803854R0600	<b>513175</b>		0.10	1
40	20	1.4	230	275	<b>OVR T2 40 275 C</b>	2CTB803854R1000	<b>513182</b>		0.10	1
40	20	1.9	400	440	<b>OVR T2 40 440 C</b>	2CTB803854R0400	<b>513205</b>		0.10	1
40	20	1.4	230	275	<b>OVR T2 40 275s C</b>	2CTB803854R0900	<b>513199</b>		0.10	1
40	20	1.9	400	440	<b>OVR T2 40 440s C</b>	2CTB803854R0300	<b>513212</b>		0.10	1
70	30	1.5	230	275	<b>OVR T2 70 275s C</b>	2CTB803854R0700	<b>513229</b>		0.10	1
70	30	2.0	400	440	<b>OVR T2 70 440s C</b>	2CTB803854R0100	<b>513236</b>		0.10	1
70	30	1.4	0	255	<b>OVR T2 70 N C</b>	2CTB803854R0000	<b>513243</b>		0.05	1

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### Selection tables

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Residual current monitors (RCMs) with external transformer can detect leakage currents. Through minidip you can set sensitivity and intervention time. According to the same diameter, transformers are made in a single version for all relay sensitivity values.

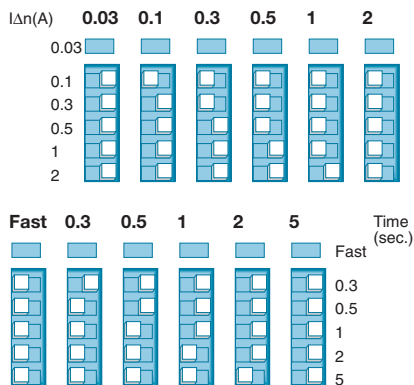
### RD2 residual current monitors

Operating voltage	Order details	Bbn	Price	Price	Weight	Pack
V	Type code	Order code	1 piece	group	1 piece	unit
			EAN		kg	pc.
230...400 AC	RD2	2CSM142120R1201	058007		0.125	1
48...150 AC/DC	RD2-48	2CSM242120R1201	537809		0.125	1

### Technical features

<b>Operating voltage</b>	[V]	230+400 a.c. (RD2) and 48+150 a.c./d.c. (RD2-48)
<b>Frequency</b>	[Hz]	50+60
<b>Sensitivity settings <math>I_{\Delta n}</math></b>	[A]	0.03; 0.1; 0.3; 0.5; 1; 2
<b>Intervention time settings</b>	[s]	Fast (instantaneous); 0.3; 0.5; 1; 2; 5
<b>Contact capacity</b>	[A]	10 at 250 V a.c. (ohmic)
<b>Contact type</b>		NC-C-NO
<b>Operating temperature</b>	[°C]	-5...+40
<b>Modules</b>	[n°]	2
<b>Standards</b>		IEC/EN 62020

#### Selection of calibration



#### Indications

Green LED: supply voltage present  
Red LED: alarm status

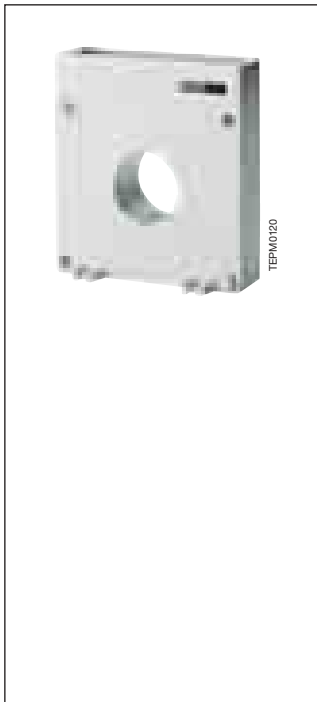
#### More functions

The connection between the toroidal transformer and the residual current relay is continually checked by the relay; if the connection interrupts, the residual current relay enters the "alarm" status. The "test" pushbutton simulates - internally to the RD2 - the residual current conditions for the RD2 to operate. If pushed, the RD2 must enter the alarm status.

The "reset" pushbutton allows the residual current relay to return to the starting condition.

If the configuration is not appropriate, the device will automatically consider as valid the first configuration (according to the diagram) and enter the maximum safety.

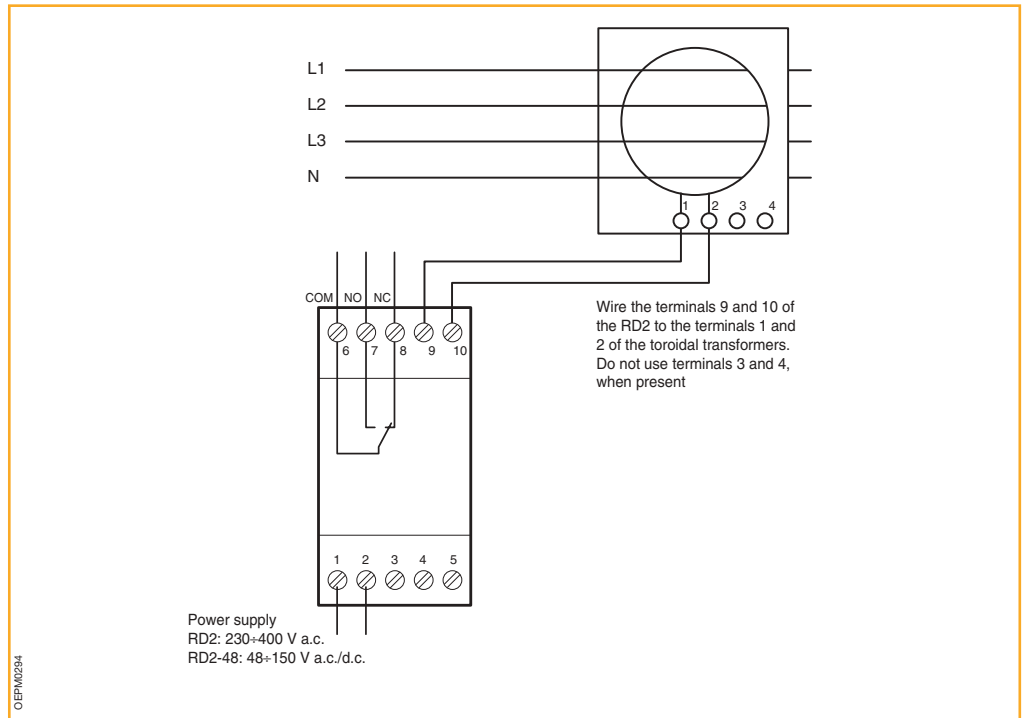


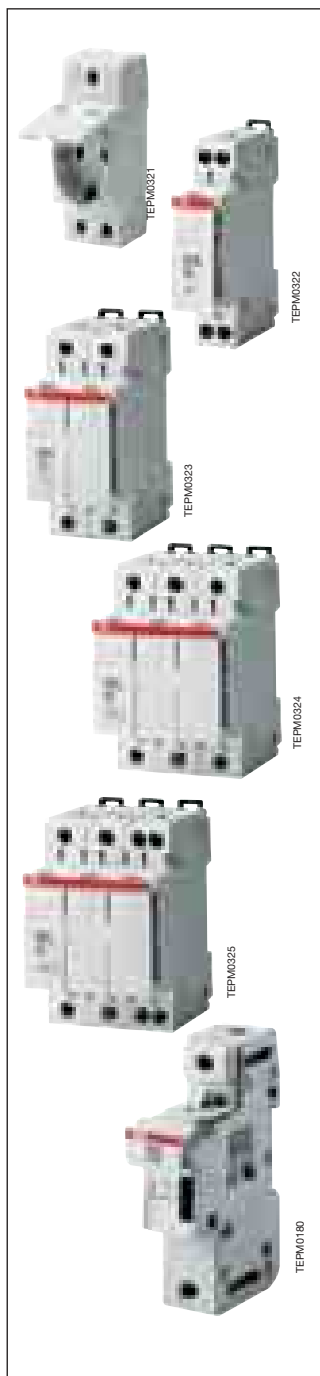


Toroidal transformers

Dimension Ø	Order details	Bbn	Price	Price group	Weight	Pack unit
mm	Type code	Order code	1 piece		1 piece	pc.
					kg	
29 (modular version)	<b>TRM</b>	2CSM029000R1211	<b>020707</b>		0.170	1
35*	<b>TR1</b>	2CSG035100R1211	<b>020301</b>		0.212	1
60*	<b>TR2</b>	2CSG060100R1211	<b>020400</b>		0.274	1
80*	<b>TR3</b>	2CSG080100R1211	<b>020509</b>		0.454	1
110*	<b>TR4</b>	2CSG110100R1211	<b>020608</b>		0.530	1
160*	<b>TR160</b>	2CSG110200R1211	<b>743408</b>		0.600	1
210*	<b>TR5</b>	2CSG160100R1211	<b>743507</b>		1.350	1
110 (open version)*	<b>TR4/A</b>	2CSG160200R1211	<b>743606</b>		1.600	1
160 (open version)*	<b>TR160 A</b>	2CSG210100R1211	<b>024804</b>		1.534	1
210 (open version)*	<b>TR5/A</b>	2CSG210200R1211	<b>065708</b>		1.856	1

\* Wiring terminals 1 and 2





E 930 fuse holders are appropriate to protect against overloads and short circuits. They are designed for use with cylindrical fuses of 20, 32, 50 and 125 A.

They are provided with IP20 protection degree, and for each version (1P, 1P+N, ...) is also available on request sizes of 8.5x23 mm (up to 10 A), 10.3x25 mm (up to 16 A) and 10.3x31.5 mm (up to 25 A).

### Fuse holders for 20 A fuses

Poles	Rated current I <sub>n</sub> A	Modules	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1	20	1	E 931/20	2CSM131210R1801	365006			0.100	6
1+N	20	1	E 931N/20	2CSM135210R1801	374404			0.150	6
2	20	2	E 932/20	2CSM132210R1801	365204			0.200	3
3	20	3	E 933/20	2CSM133210R1801	365303			0.300	2
3+N	20	3	E 933N/20	2CSM137210R1801	374503			0.350	2

### Fuse holders for 32 A fuses

1	32	1	E 931/32	2CSM151510R1801	366003			0.100	6
1+N	32	1	E 931N/32	2CSM155510R1801	374602			0.150	6
2	32	2	E 932/32	2CSM152510R1801	366201			0.200	3
3	32	3	E 933/32	2CSM153510R1801	366300			0.300	2
3+N	32	3	E 933N/32	2CSM157510R1801	374701			0.350	2

### Fuse holders for 50 A fuses

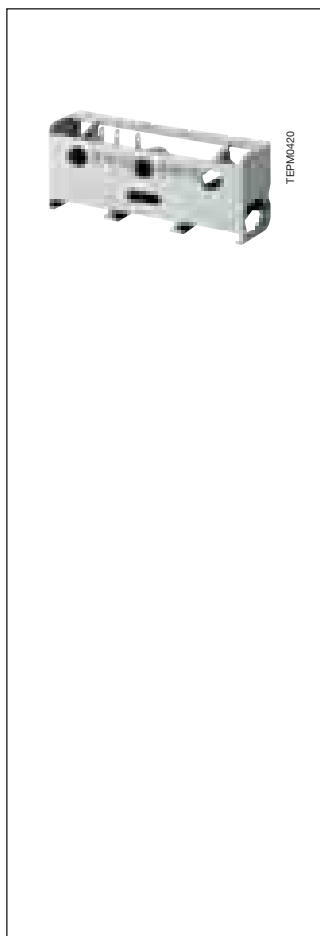
1	50	1.5	E 931/50	2CSM361610R1801	446804			0.200	6
1+N	50	3	E 931N/50	2CSM365610R1801	446903			0.400	3
2	50	3	E 932/50	2CSM362610R1801	447009			0.400	3
3	50	4.5	E 933/50	2CSM363610R1801	447108			0.600	1
3+N	50	6	E 933N/50	2CSM367610R1801	447207			0.800	1

### Fuse holders for 125 A fuses

1	125	2	E 931/125	2CSM371710R1801	447504			0.200	6
1+N	125	4	E 931N/125	2CSM375710R1801	447603			0.400	3
2	125	4	E 932/125	2CSM372710R1801	447702			0.400	3
3	125	6	E 933/125	2CSM373710R1801	447801			0.600	1
3+N	125	8	E 933N/125	2CSM377710R1801	447900			0.800	1

### Technical features

		20 A fuses	32 A fuses	50 A fuses	125 A fuses
Rated voltage U <sub>n</sub>	[V]	a.c. 400	a.c. 400	a.c. 690	a.c. 690
Rated current I <sub>n</sub>	[A]	20	32	50	125
Rated frequency	[Hz]	50/60	50/60	50/60	50/60
Fuse dimension	[mm]	8.5x31.5	10.3x38	14x51	22x58
Utilization category		-	-	AC20	AC20
Power consumption per pole		see technical details			
Standards		EN 60269-3; IEC 269-3		EN 60269-2; EN 60947-3 IEC 269-2; IEC 947-3	
Approvals		IMQ, LCIE	IMQ, LCIE	UL, CSA	UL, CSA



Accessories

Microswitch for remote signalling on fuse holders for fuses with built-in striker

Poles	Rated current In A	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1	50	E 930/MCR1P50	2CSM060019R1801	451006			0.030	1
3	50	E 930/MCR3P50	2CSM060029R1801	451105			0.030	1
1	125	E 930/MCR1P125	2CSM070019R1801	451204			0.030	1
3	125	E 930/MCR3P125	2CSM070029R1801	451303			0.030	1

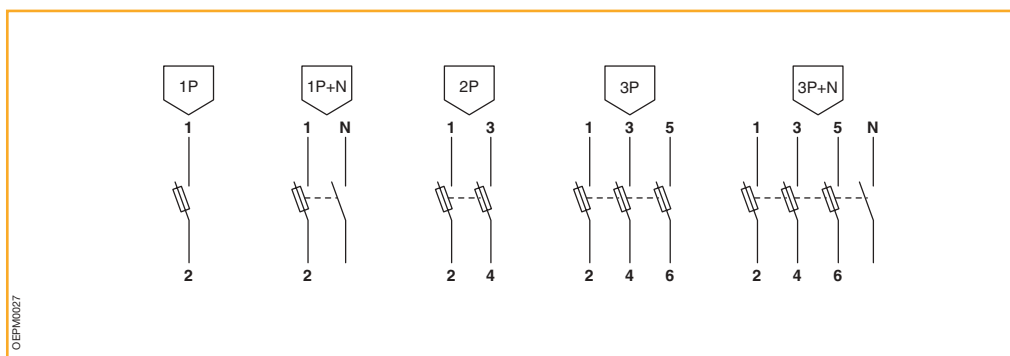
Kit for coupling max. 10 one pole fuses

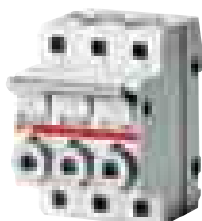
Rated current In A	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
50	E 930/ACP50	2CSM060039R1801	451402			0.050	1
125	E 930/ACP125	2CSM070039R1801	451501			0.050	1

Transparent cover for signalling 20 A and 32 A fuse trip

Description	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
only cover	E 930/KIT	2CSM050018R1801	367000			0.020	5
cover+torpedo lamp (Un=230V)	E 930/KIT+Lamp	2CSM050028R1801	539902			0.050	5

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TEPM3182

Fuse switches are used in tertiary and small industrial plants to open/close under load circuits, allowing protection against short circuits and overloads. The contact tongues are of silver-plated copper (fuse is not provided).

### M2160: switches + fuses (8.5 x 31.5)

Poles	Modules	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
		Type code	Order code					
1	1	M 2161	2CSM131210R1811	026808			0.100	12
1+N	2	M 2161 Na	2CSM135210R1811	026907			0.200	6
2	2	M 2162	2CSM132210R1811	027003			0.200	6
3	3	M 2163	2CSM133210R1811	027201			0.300	4
3+N	4	M 2163 Na	2CSM137210R1811	027102			0.400	3

### M2060: switches + fuses (10.3 x 38)

Poles	Modules	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
		Type code	Order code					
1	1	M 2061	2CSM131510R1811	027300			0.100	12
1+N	2	M 2061 Na	2CSM135510R1811	027409			0.200	6
2	2	M 2062	2CSM132510R1811	027508			0.200	6
3	3	M 2063	2CSM133510R1811	027607			0.300	4
3+N	4	M 2063 Na	2CSM137510R1811	027706			0.400	3

### Technical features

Rated voltage $U_n$	[V]	a.c. 400
Rated current $I_n$	[A]	20
Rated frequency	[Hz]	50/60
Fuse dimension	[mm]	8.5x31.5; 10.3x38
Utilization category		AC-22
Power consumption		see technical details
Modules	[n°]	1, 2, 3, 4
Standards		EN 60947-3; IEC/EN 60669-1 IEC 947-3

The fuse can be inserted only with open switch.



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### E 259 installation relays

For applications in public/tertiary sectors (i.e. control of lamps), they are equipped with manual command (temporary). They can also be coupled with additional and signal contacts.



Contacts/voltage	Order details	Bbn	Price	Price	Weight	Pack
	Type code	Order code	1 piece	group	1 piece	unit
					kg	pc.

#### Coil voltage Uc=8 V AC

1 NO	E 259 R10-8	2CSM211000R0401	533009		0.100	12
1 NO+1 NC	E 259 R11-8	2CSM214000R0401	533405		0.100	12
2 NO	E 259 R20-8	2CSM212000R0401	533801		0.100	12

#### Coil voltage Uc=12 V AC or 6 V DC

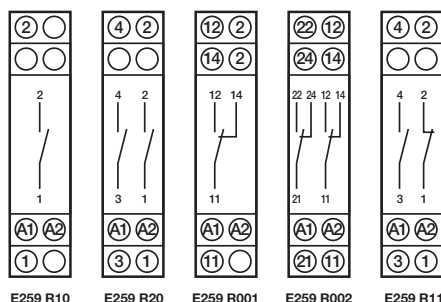
1 NO	E 259 R10-12	2CSM311000R0401	532705		0.100	12
1 NO+1 NC	E 259 R11-12	2CSM314000R0401	533108		0.100	12
2 NO	E 259 R20-12	2CSM312000R0401	533504		0.100	12
1 CO	E 259 R001-12	2CSM315000R0401	536109		0.100	12
2 CO	E 259 R002-12	2CSM316000R0401	536406		0.100	12

#### Coil voltage Uc=24 V AC or 12 V DC

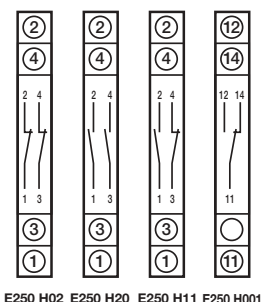
1 NO	E 259 R10-24	2CSM411000R0401	532903		0.100	12
1 NO+1 NC	E 259 R11-24	2CSM414000R0401	533207		0.100	12
2 NO	E 259 R20-24	2CSM412000R0401	533603		0.100	12
1 CO	E 259 R001-24	2CSM415000R0401	536307		0.100	12
2 CO	E 259 R002-24	2CSM416000R0401	536604		0.100	12

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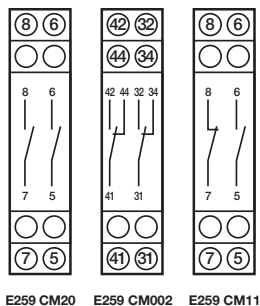
#### Modules with control coil

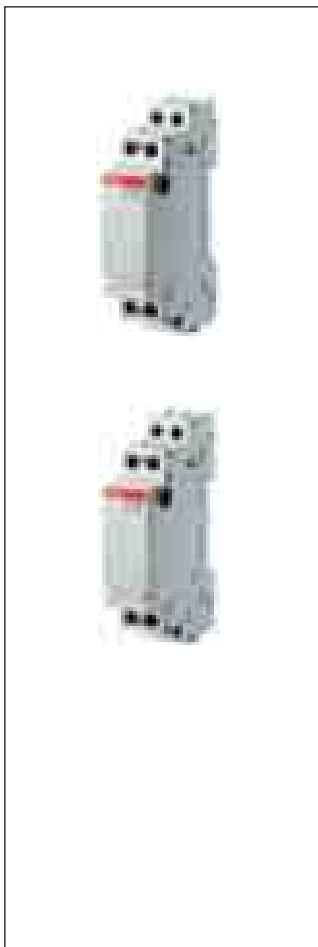


#### Auxiliary contacts



#### Additional contact modules





Coil voltage  $U_c=230$  V AC or 115 V DC

1 NO	<b>E 259 R10-230</b>	2CSM111000R0401	<b>532804</b>	0.100	12
1 NO+1 NC	<b>E 259 R11-230</b>	2CSM111400R0401	<b>533207</b>	0.100	12
2 NO	<b>E 259 R20-230</b>	2CSM111200R0401	<b>533603</b>	0.100	12
1 CO	<b>E 259 R001-230</b>	2CSM111500R0401	<b>536208</b>	0.100	12
2 CO	<b>E 259 R002-230</b>	2CSM111600R0401	<b>536505</b>	0.100	12

Further coil voltages

1 NO+1NC/48 V AC or 24 V DC	<b>E 259 R11-48</b>	2CSM514000R0401	<b>534204</b>	0.100	12
2 NO/48 V AC or 24 V DC	<b>E 259 R20-48</b>	2CSM512000R0401	<b>656708</b>	0.100	12
1 NO+1NC/115 V AC or 48 V DC	<b>E 259 R11-115</b>	2CSM614000R0401	<b>534006</b>	0.100	12
2 NO/115 V AC or 48 V DC	<b>E 259 R20-115</b>	2CSM612000R0401	<b>656807</b>	0.100	12
1 NO/230 V AC 60 Hz	<b>E 259 R10-230 60Hz</b>	2CSM111000R0401	<b>631101</b>	0.100	12
2 NO/230 V AC 60 Hz	<b>E 259 R20-230 60Hz</b>	2CSM112000R0401	<b>631309</b>	0.100	12
1 NO+1NC/230 V AC 60 Hz	<b>E 259 R11-230 60Hz</b>	2CSM114000R0401	<b>631200</b>	0.100	12
1 NO+1NC/60 V DC	<b>E 259 R11-60DC</b>	2CSM714000R0401	<b>534303</b>	0.100	12
2 NO/60 V DC	<b>E 259 R20-60DC</b>	2CSM712000R0401	<b>656906</b>	0.100	12
1 NO+1NC/220 V DC	<b>E 259 R11-220DC</b>	2CSM914000R0401	<b>534105</b>	0.100	12
2 NO/220 V DC	<b>E 259 R20-220DC</b>	2CSM912000R0401	<b>657002</b>	0.100	12

Additional components

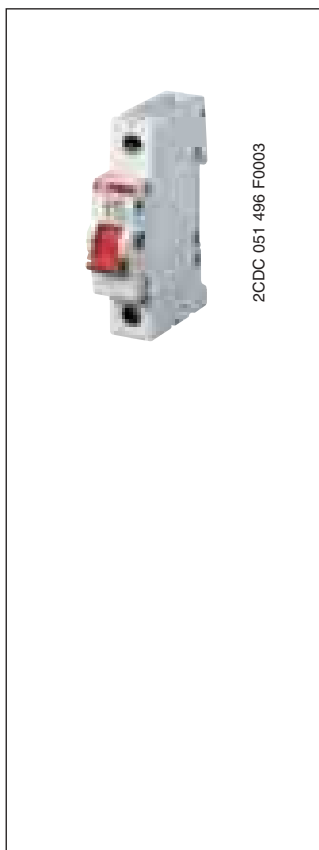
Description	Order details		Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code					
contact module 2 NO multi voltage	<b>E 259 CM20</b>	2CSM012100R0401	<b>536000</b>			0.100	12
contact module 1 NO+1NC multi voltage	<b>E 259 CM11</b>	2CSM014100R0401	<b>535904</b>			0.100	12
contact module 2 CO multi voltage	<b>E 259 CM002</b>	2CSM016100R0401	<b>535805</b>			0.100	12
auxiliary switches 1 NC+1 NO	<b>E 259 H11</b>	2CSM004400R0201	<b>534709</b>			0.100	12
auxiliary switches 2 NO	<b>E 259 H20</b>	2CSM002400R0201	<b>536901</b>			0.100	12
auxiliary switches 2 NC	<b>E 259 H02</b>	2CSM008400R0201	<b>536802</b>			0.100	12

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Technical features

		<b>E259 R10, E259 R20, E259 R11</b>	<b>E259 R001, E259 R002</b>
<b>Rated voltage <math>U_N</math></b>	[V]	400/250	400/250
<b>Rated current (according to EN 60947-4-1)</b>	[A]	16	16
<b>Rated frequency</b>	[Hz]	50	50-60 d.c.
<b>Number of poles</b>		1...4	1...4
<b>Control circuit voltage</b>		8, 12, 24, 48, 115, 230 V a.c.	12, 24 V a.c./d.c.
Power supply voltage	[VAC]	60, 110, 220 V d.c.	230 V a.c.
D.c./a.c. ratio		0.5:1	0.5:1
Operation limits (in % of $U_N$ )	[%]	85-110	85-110
<b>Power consumption*</b>			
Alternated current retained	[VA]	3.8	4.0
change over	[VA]	6.0	4.0
Direct current	[W]	3.3	4.2
<b>Duration (number of operations)</b>			
Electric operations (in AC-1 at full load)		$3 \times 10^5$	$4 \times 10^5$
Mechanic operations		$2 \times 10^6$	$2 \times 10^6$
<b>Max. lamp number (<math>10^3</math> operations/h)</b>			
Incandescent and halogen (lamps from 40 to 200W)	[W]	1800	1800
Fluorescent, with capacitors ( $\cos\phi = 0.9$ )			
In series	[VA]	1800	1800
In parallel	[VA]	500	500
Fluorescent, without capacitors ( $\cos\phi = 0.5$ )	[VA]	900	900
<b>Width (number of DIN modules)</b>			
Motor unit	[n°]	1	1
With main contact unit	[n°]	2	2

\* Low consumption relays on request E 259 LC



### E 200 switches

Isolator for panel installation onto DIN rail acc. to DIN EN 60715

Mounting depth: 70mm  
Mounting width: per pole = 17.5mm = 1 module  
Colour: grey, RAL 7035  
Colour of switch lever: red RAL 3000 (r); grey RAL 7000 (g)

#### Special features

- Fast removal without dismantling of the busbar
- Captive screws with recessed/slotted head, Pozidriv size 2
- Add-on of up to 3 auxiliary contact S2C-H6R possible
- Integrated lay-on edge for labeling system ILS
- Locking device as accessories for unauthorized ON/OFF
- Approval: VDE, CCC

Poles	Rated voltage	Power loss	Order details	Bbn	Price	Price group	Weight	Pack unit
	V AC	W	Type code	Order code	1 piece		kg	pc.

#### Rated current 16 A

1NO	230V	0.15	<b>E201/16g</b>	2CDE281001R1016	<b>645614</b>		0.095	10
1NO	230V	0.15	<b>E201/16r</b>	2CDE281001R0016	<b>645621</b>		0.095	10
2NO	400V	0.30	<b>E202/16g</b>	2CDE282001R1016	<b>645799</b>		0.190	5
2NO	400V	0.30	<b>E202/16r</b>	2CDE282001R0016	<b>645805</b>		0.190	5
3NO	400V	0.45	<b>E203/16g</b>	2CDE283001R1016	<b>645973</b>		0.290	3
3NO	400V	0.45	<b>E203/16r</b>	2CDE283001R0016	<b>645980</b>		0.290	3
4NO	400V	0.60	<b>E204/16g</b>	2CDE284001R1016	<b>646154</b>		0.390	2
4NO	400V	0.60	<b>E204/16r</b>	2CDE284001R0016	<b>646161</b>		0.390	2

### Technical data

**Switching capacity** 1.25 x I<sub>n</sub>; 1.1 x U<sub>n</sub>; cos φ = 0.3 acc. to DIN VDE 0632  
AC22-A/AC23-A acc. to VDE 0660 part 107,  
DIN EN 60947-3 resp. IEC 947-3  
DC21-B for applications up to 60 V DC

**Positive opening** acc. to DIN VDE 0113

**Short-circuit withstand capacity** 25 kA<sub>eff</sub> in series with NH 00 100 A gL-gG;  
10 kA<sub>eff</sub> in series with NH 00 125 A gL-gG

**Rated voltage** 230/400 V AC; 50/60 Hz

**Surge withstand capability U<sub>imp</sub>** 4 kV acc. to EN 60947-1

**Ambient temperature** -25 °C to +55 °C

**Storage temperature** -40 °C to +70 °C

**Climatic resistance** constant climate 23/83, 40/93, 55/20 [°C/RH]  
alternating climate 25/95 - 40/93 [°C/RH]

**Mounting position** optional

**Degree of protection** IP10, IP40 in panelboard

**Mechanical endurance** 20000 switching cycles

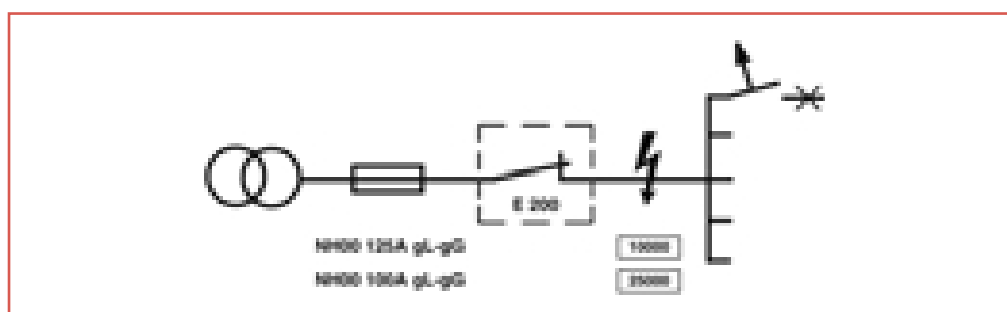
**Electrical endurance** 1000 switching cycles

**Min. voltage** 12 V AC/DC at 0.1 VA

**Min. contact loading** 24 V/4 mA

**Wire range** 2.5 to 50 mm<sup>2</sup>

**Torque** 5 Nm







2CDC 051 002 F0004

Rated current 25 A

1NO	230V	0.30	<b>E201/25g</b>	2CDE281001R1025	<b>645638</b>	0.095	10
1NO	230V	0.30	<b>E201/25r</b>	2CDE281001R0025	<b>645645</b>	0.095	10
2NO	400V	0.60	<b>E202/25g</b>	2CDE282001R1025	<b>645812</b>	0.190	5
2NO	400V	0.60	<b>E202/25r</b>	2CDE282001R0025	<b>645829</b>	0.190	5
3NO	400V	0.90	<b>E203/25g</b>	2CDE283001R1025	<b>645997</b>	0.290	3
3NO	400V	0.90	<b>E203/25r</b>	2CDE283001R0025	<b>646000</b>	0.290	3
4NO	400V	1.20	<b>E204/25g</b>	2CDE284001R1025	<b>646178</b>	0.390	2
4NO	400V	1.20	<b>E204/25r</b>	2CDE284001R0025	<b>646185</b>	0.390	2

Rated current 32 A

1NO	230V	0.50	<b>E201/32g</b>	2CDE281001R1032	<b>645652</b>	0.095	10
1NO	230V	0.50	<b>E201/32r</b>	2CDE281001R0032	<b>645669</b>	0.095	10
2NO	400V	0.95	<b>E202/32g</b>	2CDE282001R1032	<b>645836</b>	0.190	5
2NO	400V	0.95	<b>E202/32r</b>	2CDE282001R0032	<b>645843</b>	0.190	5
3NO	400V	1.40	<b>E203/32g</b>	2CDE283001R1032	<b>646017</b>	0.290	3
3NO	400V	1.40	<b>E203/32r</b>	2CDE283001R0032	<b>646024</b>	0.290	3
4NO	400V	1.90	<b>E204/32g</b>	2CDE284001R1032	<b>646192</b>	0.390	2
4NO	400V	1.90	<b>E204/32r</b>	2CDE284001R0032	<b>646208</b>	0.390	2

Rated current 40 A

1NO	230V	0.70	<b>E201/40g</b>	2CDE281001R1040	<b>645676</b>	0.095	10
1NO	230V	0.70	<b>E201/40r</b>	2CDE281001R0040	<b>645683</b>	0.095	10
2NO	400V	1.40	<b>E202/40g</b>	2CDE282001R1040	<b>645850</b>	0.190	5
2NO	400V	1.40	<b>E202/40r</b>	2CDE282001R0040	<b>645867</b>	0.190	5
3NO	400V	2.10	<b>E203/40g</b>	2CDE283001R1040	<b>646031</b>	0.290	3
3NO	400V	2.10	<b>E203/40r</b>	2CDE283001R0040	<b>646048</b>	0.290	3
4NO	400V	2.80	<b>E204/40g</b>	2CDE284001R1040	<b>646215</b>	0.390	2
4NO	400V	2.80	<b>E204/40r</b>	2CDE284001R0040	<b>646222</b>	0.390	2

Rated current 45 A

1NO	230V	0.90	<b>E201/45g</b>	2CDE281001R1045	<b>645690</b>	0.095	10
1NO	230V	0.90	<b>E201/45r</b>	2CDE281001R0045	<b>645706</b>	0.095	10
2NO	400V	1.80	<b>E202/45g</b>	2CDE282001R1045	<b>645874</b>	0.190	5
2NO	400V	1.80	<b>E202/45r</b>	2CDE282001R0045	<b>645881</b>	0.190	5
3NO	400V	2.65	<b>E203/45g</b>	2CDE283001R1045	<b>646055</b>	0.290	3
3NO	400V	2.65	<b>E203/45r</b>	2CDE283001R0045	<b>646062</b>	0.290	3
4NO	400V	3.50	<b>E204/45g</b>	2CDE284001R1045	<b>646239</b>	0.390	2
4NO	400V	3.50	<b>E204/45r</b>	2CDE284001R0045	<b>646246</b>	0.390	2

Rated current 63 A

1NO	230V	1.65	<b>E201/63g</b>	2CDE281001R1063	<b>645713</b>	0.095	10
1NO	230V	1.65	<b>E201/63r</b>	2CDE281001R0063	<b>645720</b>	0.095	10
2NO	400V	3.30	<b>E202/63g</b>	2CDE282001R1063	<b>645898</b>	0.190	5
2NO	400V	3.30	<b>E202/63r</b>	2CDE282001R0063	<b>645904</b>	0.190	5
3NO	400V	4.90	<b>E203/63g</b>	2CDE283001R1063	<b>646079</b>	0.290	3
3NO	400V	4.90	<b>E203/63r</b>	2CDE283001R0063	<b>646086</b>	0.290	3
4NO	400V	6.55	<b>E204/63g</b>	2CDE284001R1063	<b>646253</b>	0.390	2
4NO	400V	6.55	<b>E204/63r</b>	2CDE284001R0063	<b>646260</b>	0.390	2

Rated current 80 A

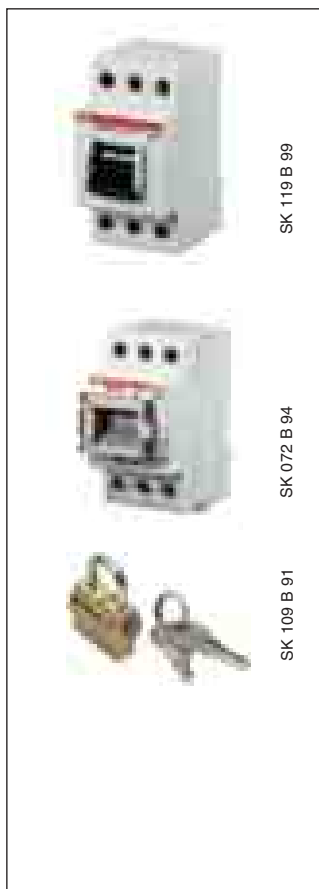
1NO	230V	2.60	<b>E201/80g</b>	2CDE281001R1080	<b>645737</b>	0.095	10
1NO	230V	2.60	<b>E201/80r</b>	2CDE281001R0080	<b>645744</b>	0.095	10
2NO	400V	5.15	<b>E202/80g</b>	2CDE282001R1080	<b>645911</b>	0.190	5
2NO	400V	5.15	<b>E202/80r</b>	2CDE282001R0080	<b>645928</b>	0.190	5
3NO	400V	7.75	<b>E203/80g</b>	2CDE283001R1080	<b>646093</b>	0.290	3
3NO	400V	7.75	<b>E203/80r</b>	2CDE283001R0080	<b>646109</b>	0.290	3
4NO	400V	10.30	<b>E204/80g</b>	2CDE284001R1080	<b>646277</b>	0.390	2
4NO	400V	10.30	<b>E204/80r</b>	2CDE284001R0080	<b>646284</b>	0.390	2

Rated current 100 A

1NO	230V	3.95	<b>E201/100g</b>	2CDE281001R1100	<b>645751</b>	0.095	10
1NO	230V	3.95	<b>E201/100r</b>	2CDE281001R0100	<b>645738</b>	0.095	10
2NO	400V	7.90	<b>E202/100g</b>	2CDE282001R1100	<b>645935</b>	0.190	5
2NO	400V	7.90	<b>E202/100r</b>	2CDE282001R0100	<b>645942</b>	0.190	5
3NO	400V	11.85	<b>E203/100g</b>	2CDE283001R1100	<b>646116</b>	0.290	3
3NO	400V	11.85	<b>E203/100r</b>	2CDE283001R0100	<b>646123</b>	0.290	3
4NO	400V	15.80	<b>E204/100g</b>	2CDE284001R1100	<b>646291</b>	0.390	2
4NO	400V	15.80	<b>E204/100r</b>	2CDE284001R0100	<b>646307</b>	0.390	2

Rated current 125 A

1NO	230V	6.10	<b>E201/125g</b>	2CDE281001R1125	<b>645775</b>	0.095	10
1NO	230V	6.10	<b>E201/125r</b>	2CDE281001R0125	<b>645782</b>	0.095	10
2NO	400V	12.20	<b>E202/125g</b>	2CDE282001R1125	<b>645959</b>	0.190	5
2NO	400V	12.20	<b>E202/125r</b>	2CDE282001R0125	<b>645966</b>	0.190	5
3NO	400V	18.30	<b>E203/125g</b>	2CDE283001R1125	<b>646130</b>	0.33	3
3NO	400V	18.30	<b>E203/125r</b>	2CDE283001R0125	<b>646147</b>	0.33	3
4NO	400V	24.35	<b>E204/125g</b>	2CDE284001R1125	<b>646314</b>	0.44	2
4NO	400V	24.35	<b>E204/125r</b>	2CDE284001R0125	<b>646321</b>	0.44	2



**E 463/3-KB, E 480/3-KB, E 463/3-SL switches**

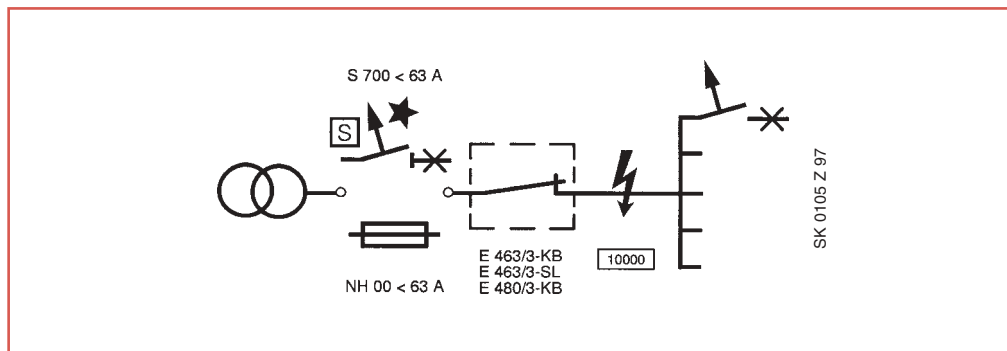
Rated current	Power loss	Order details		Bbn	Price	Price group	Weight	Pack unit
A	W	Type code	Order code	7612270	1 piece		1 piece	pc.
				EAN			kg	
63	5.4	<b>E 463/3-KB</b>	2CCE160300R0131	<b>932528</b>			0.190	1
63	5.5	<b>E 463/3-SL</b>	2CCE160301R0131	<b>932535</b>			0.195	1
80	9.9	<b>E 480/3-KB</b>	2CCE180300R0141	<b>932542</b>			0.210	1

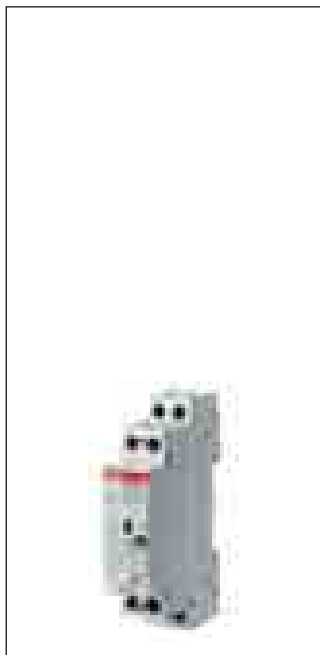
**Padlock for E 463/3-SL with 2 keys**

Order details		Bbn	Price	Price group	Weight	Pack unit
Type code	Order code	7612270	1 piece		1 piece	pc.
		EAN			kg	
<b>SA 2</b>	GJF1101903R0002	<b>587704</b>			0.020	1

**Technical features**

<b>Switching capacity</b>	1.25 In; 1.1 Un; $\cos\phi = 0.6$ according to DIN VDE 0632
<b>Rated voltage</b>	250/400 V a.c.
<b>Connection cross section</b>	1 mm <sup>2</sup> stranded wire/0.5 mm <sup>2</sup> wire up to 25 mm <sup>2</sup>
<b>Pick-up torque</b>	3 Nm max.
<b>Positive opening</b>	according to DIN VDE 0113
<b>Ambient temperature</b>	-25°C to +55°C
<b>Storage temperature</b>	-40°C to +70°C
<b>Poles</b>	3 NO
<b>Short-circuit withstanding capacity</b>	10 kA, 400 V a.c.





### E 250 electro-mechanical latching relays

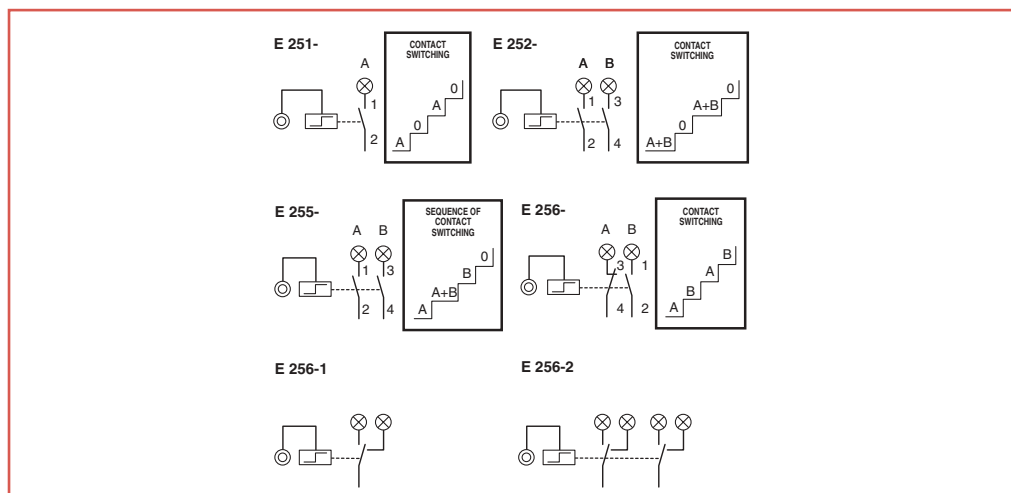
Electro-mechanical latching relays allow contact switching for each impulse sent to coil using normally open pushbuttons. Ideal for lamp remote controlling from different positions, they are available in various versions according to pick-up voltage and to contact positions. Basic modules are available in one-pole and bipolar versions and can be combined with bipolar contact modules in order to have three-pole and four-pole devices. E257C versions also allow centralized reset function (ON and OFF), that can be extended at a multi-level through the appropriate grouping module. They also allow manual operation on the product. They can also be equipped with signalling auxiliary contacts.

Contacts/voltage	Order details	Bbn	Price	Price	Weight	Pack
	Type code	Order code	1 piece	group	1 piece	unit
			EAN		kg	pc.

Coil voltage  $U_c = 8 \text{ V AC } 16 \text{ A}$

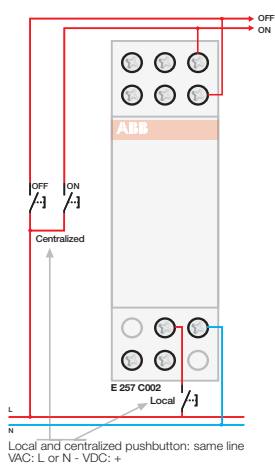
1 NO	<b>E 251-8</b>	2CSM 211 000 R0201	<b>53050 3</b>		0.114	12
2 NO	<b>E 252-8</b>	2CSM 212 000 R0201	<b>53100 5</b>		0.116	12
1 NO + 1 NC	<b>E 256-8</b>	2CSM 214 000 R0201	<b>53190 6</b>		0.116	12
2 sequential	<b>E 255-8</b>	2CSM 219 000 R0201	<b>53150 0</b>		0.121	12

7

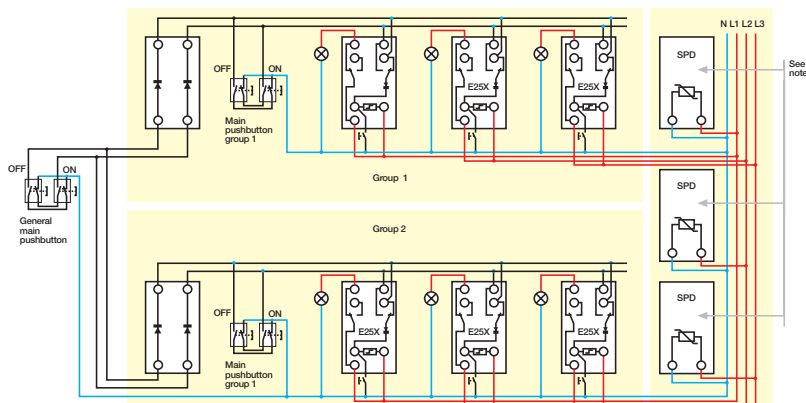


### Examples of connection

E257 C002 – local and/or centralized pushbutton

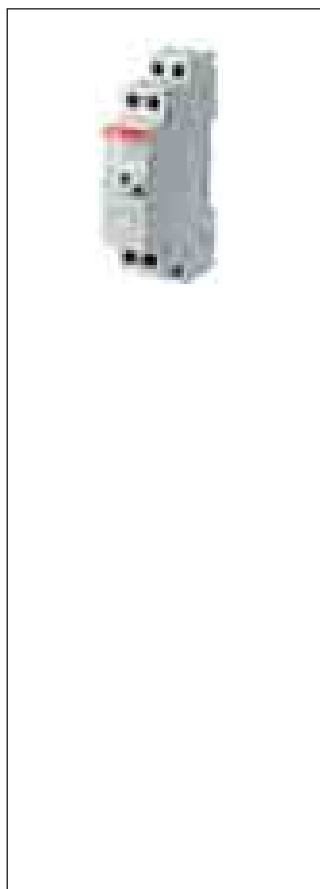


### Group centralized control: wiring diagram for E250 GM



In the case of very long lines a surge protective device (SPD) is suggested. If the plant has been correctly implemented in terms of overvoltage protection we suggest a Class III SPD as a terminal protection.





Coil voltage  $U_c = 24 \text{ V AC or } 12 \text{ V DC } 32 \text{ A}$

1NA	E 251-32/24	2CSM431000R0201	91220 0	0.114	12
2NA	E 252-32/24	2CSM432000R0201	91280 4	0.116	12

Coil voltage  $U_c = 48 \text{ V AC or } 24 \text{ V DC } 16 \text{ A}$

1 NO	E 251-48	2CSM511000R0201	53060 2	0.114	12
2 NO	E 252-48	2CSM512000R0201	53110 4	0.116	12
1 NO + 1NC	E 256-48	2CSM514000R0201	53200 2	0.116	12

Coil voltage  $U_c = 48 \text{ V AC or } 24 \text{ V DC } 32 \text{ A}$

1NA	E 251-32/48	2CSM531000R0201	91230 9	0.114	12
2NA	E 252-32/48	2CSM532000R0201	91290 3	0.116	12

Coil voltage  $U_c = 115 \text{ V AC or } 48 \text{ V DC } 16 \text{ A}$

1 NO	E 251-115	2CSM611000R0201	63090 6	0.114	12
2 NO	E 252-115	2CSM612000R0201	63100 2	0.114	12
1 NO + 1 NC	E 256-115	2CSM614000R0201	63020 3	0.114	12

Coil voltage  $U_c = 115 \text{ V AC or } 48 \text{ V DC } 32 \text{ A}$

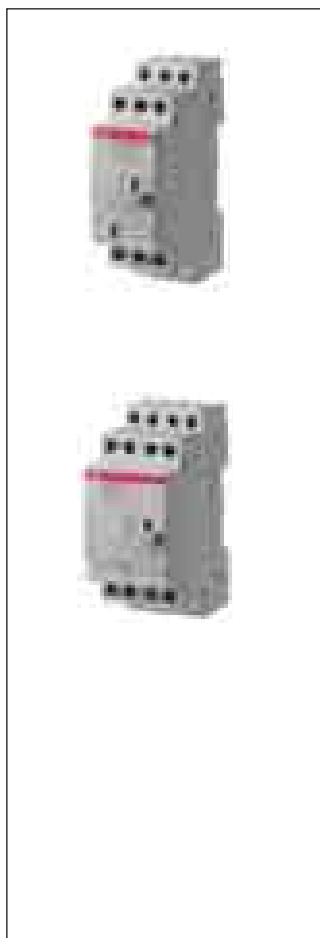
1NA	E 251-32/115	2CSM631000R0201	91240 8	0.114	12
2NA	E 252-32/115	2CSM632000R0201	91300 9	0.116	12

Technical features

			E 255	E 251/E 252/ E 256	E 257 C
<b>Rated load (according to EN 60669-2-2)</b>					
250 V a.c. (1 and 2 poles)/400 V a.c. (3 and 4 poles) [A]			16	16/32	16/32
Direct current (30 V d.c.) [A]			16	16/32	16/32
Number of poles			2	1...4	1...3
<b>Contacts</b>					
Motor unit	NO		1+1	1-2	1...3
	CO		-	1-2	1...3
	NO+NC		-	1+1	-
Main contact units	NO		-	2	-
	CO		-	2	-
	NO+NC		-	1+1	-
<b>Width (number of DIN modules)</b>					
Motor unit	[mod.]		1	1	1-2
With main contact unit	[mod.]		-	2	-
<b>Coil characteristics</b>					
Supply voltage: d.c./a.c. ratio ①			0.5:1	0.5:1	0.5:1
Operation limits (in % of $U_n$ )			90-110	90-110	90-110
Alternated current	Retained	[VA]	11.0	11.0/11.5	11.0/14.5
Power consumption	Pick-up current	[VA]	14.5	14.5/16.5	11.0/14.5
Direct current power consumption [W]			7.5	7.5/8	7.5/2
Max. time under supply ②					
<b>Impulse endurance</b>					
Minimum impulse endurance (at $U_n$ ) [s]			0.050	0.050	0.050
Minimum impulse endurance (90% $U_n$ ) [s]			0.100	0.100	0.100
Minimum interval between two impulses [s]			0.150	0.150	0.150
Max. impulse number per minute			250	250	250
<b>Duration (number of operations) ③</b>					
Electric operations (in AC-1 at full load)			$3 \times 10^5$	$4 \times 10^5 / 3 \times 10^5$	$4 \times 10^5 / 3 \times 10^5$
Mechanic operations			$2 \times 10^6$	$2 \times 10^6$	$2 \times 10^6$

① Power supply voltage: all devices can operate at a.c. as well as d.c., according to the d.c./a.c. ratio: d.c. rated voltage = (a.c. rated voltage) x (d.c./a.c. ratio).

② The relays withstand the "blocked pushbutton" condition. When the permanent voltage operation is needed, it is necessary to use, on both sides, a spacer device and to ensure that the utilization factor allows the device to reach the ambient temperature.



Coil voltage  $U_c = 230 \text{ V AC}$  or  $115 \text{ V DC}$  16 A

1 NO	E 251-230	2CSM111000R0201	53030 5	0.114	12
2 NO	E 252-230	2CSM112000R0201	53080 0	0.116	12
1 NO + 1 NC	E 256-230	2CSM114000R0201	53170 8	0.116	12
1 CO	E 256.1-230	2CSM115000R0201	53730 4	0.115	12
2 CO	E 256.2-230	2CSM116000R0201	53760 1	0.118	12
2 sequential	E 255-230	2CSM119000R0201	53130 2	0.121	12

Coil voltage  $U_c = 230 \text{ V AC}$  or  $115 \text{ V DC}$  32 A

1NA	E 251-32/230	2CSM131000R0201	91250 7	0.114	12
2NA	E 252-32/230	2CSM132000R0201	91310 8	0.116	12

Coil voltage  $U_c = 60 \text{ V DC}$  and  $U_c = 220 \text{ V DC}$  16 A

2 NO	E 252-60DC	2CSM712000R0201	63010 4	0.116	12
2 NO	E 252-220DC	2CSM912000R0201	63000 5	0.116	12

Coil voltage  $U_c = 12 \text{ V AC}$  or  $6 \text{ V DC}$ , central ON/OFF, same electr. potential

1 NO	E 257 C10-12	2CSM311000R0211	53210 1	0.126	12
2 NO	E 257 C20-12	2CSM312000R0211	53240 8	0.174	8
3 NO	E 257 C30-12	2CSM313000R0211	53480 8	0.240	6
1 NO + central ON/OFF	E 257-32C10-12	2CSM331000R0211	91320 7	0.126	12
2 NO + central ON/OFF	E 257-32C20-12	2CSM332000R0211	91350 4	0.174	8
3 NO + central ON/OFF	E 257-32C30-12	2CSM333000R0211	91380 1	0.240	6
1 CO	E 257 C001-12	2CSM315000R0211	54020 5	0.126	12
2 CO	E 257 C002-12	2CSM316000R0211	54050 2	0.174	8
3 CO	E 257 C003-12	2CSM317000R0211	54080 9	0.240	6

	E 255	E 251/E 252/ E 256	E 257 C
<b>Load characteristics</b>			
AC-1 maximum load in per phase	[A]	20	20/32
DC maximum load (30 V d.c.)	[A]	16	16
Minimum load per phase (under 5 V)	[W]	2	2
Fuse against short circuit (gL)	[A]	20	20/32
<b>Maximum lamp number (10<sup>3</sup> operations/h)</b>			
Incandescent and halogen (lamps from 40 to 200 W)	[W]	3000	3000
Fluorescent, with capacitors (cosφ=0.9)			
In series	[VA]	3000	3000/4000
In parallel	[VA]	2500	2500/3200
Fluorescent, without capacitors (cosφ=0.5)	[VA]	1800	1800/2200
<b>Max. pushbutton number</b>			
Not lighted pushbuttons		unlimited	unlimited
Lighted pushbuttons	3 wires	unlimited	unlimited
	2 wires	④	④
<b>General characteristics</b>			
Mounting on DIN rail		yes	yes
Fixing on bistable DIN rail		yes	yes
Two-position handle		-	yes
Contact position indicator		yes	yes
Label holder		yes	yes
Cage terminals		yes	yes
Loss-proof screws		yes	yes
Sealable terminals		yes	yes
Cable section (ø min./max.)	[mm <sup>2</sup> ]	1.5/10	1.5/10 (2P: 6)
Min./max. operating temperature [°C]		-20...+45	-20...+45

③ 1 cycle=2 operations per pole (close + open).

④ See E 250 CP compensation module table.

Contacts/voltage	Order details	Bbn	Price	Price	Weight	Pack
	Type code	Order code	1 piece	group	1 piece	unit
					kg	pc.

Coil voltage  $U_c = 24$  V AC or 12 V DC, central ON/OFF, same electr. potential

1 NO	<b>E 257 C10-24</b>	2CSM411000R0211	<b>53230 9</b>		0.126	12
2 NO	<b>E 257 C20-24</b>	2CSM412000R0211	<b>53260 6</b>		0.174	8
3 NO	<b>E 257 C30-24</b>	2CSM413000R0211	<b>53500 3</b>		0.240	6
1 NO + central ON/OFF	<b>E 257-32C10-24</b>	2CSM431000R0211	<b>91330 6</b>		0.126	12
2 NO + central ON/OFF	<b>E 257-32C20-24</b>	2CSM432000R0211	<b>91360 3</b>		0.174	8
3 NO + central ON/OFF	<b>E 257-32C30-24</b>	2CSM433000R0211	<b>91390 0</b>		0.240	6
1 CO	<b>E 257 C001-24</b>	2CSM415000R0211	<b>54010 6</b>		0.126	12
2 CO	<b>E 257 C002-24</b>	2CSM416000R0211	<b>54040 3</b>		0.174	8
3 CO	<b>E 257 C003-24</b>	2CSM417000R0211	<b>54070 0</b>		0.240	6

Coil voltage  $U_c = 230$  V AC or 115 V DC, central ON/OFF, same electr. potential

1 NO	<b>E 257 C10-230</b>	2CSM111000R0211	<b>53220 0</b>		0.126	12
2 NO	<b>E 257 C20-230</b>	2CSM112000R0211	<b>53250 7</b>		0.174	8
3 NO	<b>E 257 C30-230</b>	2CSM113000R0211	<b>53490 7</b>		0.240	6
1 NO + central ON/OFF	<b>E 257-32C10-230</b>	2CSM131000R0211	<b>91340 5</b>		0.126	12
2 NO + central ON/OFF	<b>E 257-32C20-230</b>	2CSM132000R0211	<b>91370 2</b>		0.174	8
3 NO + central ON/OFF	<b>E 257-32C30-230</b>	2CSM133000R0211	<b>91400 6</b>		0.240	6
1 CO	<b>E 257 C001-230</b>	2CSM115000R0211	<b>54000 7</b>		0.126	12
2 CO	<b>E 257 C002-230</b>	2CSM116000R0211	<b>54030 4</b>		0.174	8
3 CO	<b>E 257 C003-230</b>	2CSM117000R0211	<b>54060 1</b>		0.240	6

Coil voltage  $U_c = 230$  V AC (local), 24 V AC (central)

1 NO	<b>E 258 C10-230/24</b>	2CSM211000R0231	<b>78910 9</b>		0.226	6
2 NO	<b>E 258 C20-230/24</b>	2CSM212000R0231	<b>78830 0</b>		0.235	6
1 NO + 1 NC	<b>E 258 C11-230/24</b>	2CSM213000R0231	<b>78870 6</b>		0.232	6
1 NO + 1 NC + 1 CO	<b>E 258 C111-230/24</b>	2CSM215000R0231	<b>78890 4</b>		0.239	6
2 NO + 1 CO	<b>E 258 C201-230/24</b>	2CSM214000R0231	<b>78850 8</b>		0.241	6
2 CO	<b>E 258 C002-230/24</b>	2CSM216000R0231	<b>78960 4</b>		0.250	6
3 CO	<b>E 258 C003-230/24</b>	2CSM217000R0231	<b>78990 1</b>		0.256	6

Coil voltage  $U_c = 230$  V AC (local), 230 V AC (central)

1 NO	<b>E 258 C10-230/230</b>	2CSM111000R0231	<b>78920 8</b>		0.233	6
2 NO	<b>E 258 C20-230/230</b>	2CSM112000R0231	<b>78840 9</b>		0.243	6
1 NO + 1 NC	<b>E 258 C11-230/230</b>	2CSM113000R0231	<b>78880 5</b>		0.240	6
1 NO + 1 NC + 1 CO	<b>E 258 C111-230/230</b>	2CSM115000R0231	<b>78900 0</b>		0.244	6
2 NO + 1 CO	<b>E 258 C201-230/230</b>	2CSM114000R0231	<b>78860 7</b>		0.247	6
2 CO	<b>E 258 C002-230/230</b>	2CSM116000R0231	<b>78970 3</b>		0.257	6
3 CO	<b>E 258 C003-230/230</b>	2CSM117000R0231	<b>79000 6</b>		0.262	6



Coil voltage  $U_c = 24 \text{ V AC (local), 24 V AC (central)}$

1 NO	<b>E 258 C10-24/24</b>	2CSM411000R0231	<b>79010 5</b>	0.225	6
2 NO	<b>E 258 C20-24/24</b>	2CSM412000R0231	<b>78930 7</b>	0.234	6
2 NO + 1 CO	<b>E 258 C201-24/24</b>	2CSM414000R0231	<b>78940 6</b>	0.241	6
2 CO	<b>E 258 C002-24/24</b>	2CSM416000R0231	<b>78950 5</b>	0.249	6
3 CO	<b>E 258 C003-24/24</b>	2CSM417000R0231	<b>78980 2</b>	0.256	6

Supplementary components

Description	Order details		Bbn	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code	EAN				
contact module 2 NO multi voltage 16 A	<b>E 250 CM20</b>	2CSM012100 R0201	<b>53460 0</b>			0.058	10
contact module 1 NO + 1 NC multi voltage	<b>E 250 CM11</b>	2CSM014100R0201	<b>53450 1</b>			0.058	10
contact module 2CO multi voltage	<b>E 250 CM002</b>	2CSM016100R0201	<b>53440 2</b>			0.059	10
central contact module	<b>E 257 CM</b>	2CSM000200R0211	<b>53510 2</b>			0.062	16
auxiliary switches 1 NO + 1 NC	<b>E 250 H11</b>	2CSM004400R0201	<b>53470 9</b>			0.033	16
auxiliary switches 2 NO	<b>E 250 H20</b>	2CSM002400R0201	<b>53690 1</b>			0.033	16
auxiliary switches 2 NC	<b>E 250 H02</b>	2CSM008400R0201	<b>53680 2</b>			0.033	16
compensator	<b>E 250 CP</b>	2CSM000500R0201	<b>53710 6</b>			0.058	12
group module	<b>E 250-GM</b>	2CSM000600R0201	<b>53700 7</b>			0.058	12
contact module 2 NO multi voltage 32 A 250 V AC	<b>E 250-32-CM 20</b>	2CSM032100R0201	<b>914105</b>			0.058	10

### E 260 electronic latching relays

The electronic version of latching relays guarantees maximum reliability, life, and noiseless operation. The E 260 C version also allows centralized reset function (ON/OFF).

Contacts	Power loss	Order details	Bbn	Price	Price group	Weight	Pack unit
	W ①	Type code	Order code	4016779	1 piece	1 piece	kg pc.
				EAN			

① Values in brackets indicate power loss when permanently excited, rated voltage and rated contact loading.

### Latching relays with control electronics

Coil voltage  $U_c = 24 \text{ V AC/DC}$

1 NO	2.4 (3.0)	<b>E 261-24</b>	2CDE441000R0301	<b>57592 8</b>		0.085	1
1 NO+1 NC	2.4 (3.5)	<b>E 266-24</b>	2CDE444000R0301	<b>57595 9</b>		0.096	1
2 NO	2.4 (3.5)	<b>E 262-24</b>	2CDE442000R0301	<b>57593 5</b>		0.096	1

Coil voltage  $U_c = 230 \text{ V AC}$

1 NO	1.5 (2.0)	<b>E 261-230</b>	2CDE141000R0301	<b>57596 6</b>		0.085	1
1 NO+1 NC	1.7 (3.6)	<b>E 266-230</b>	2CDE144000R0301	<b>57598 0</b>		0.096	1
2 NO	1.7 (3.6)	<b>E 262-230</b>	2CDE142000R0301	<b>57597 3</b>		0.096	1

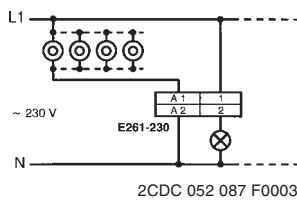


2CDC 051 025 F0003

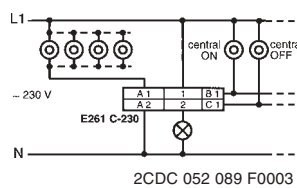
7

### Connection examples

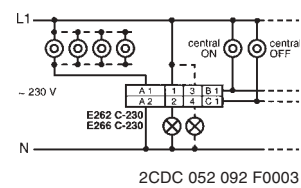
E 261-230



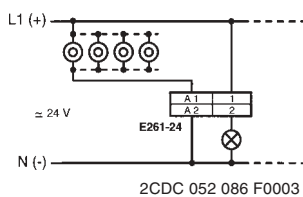
E 261 C-230



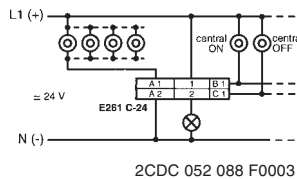
E 266 C-230



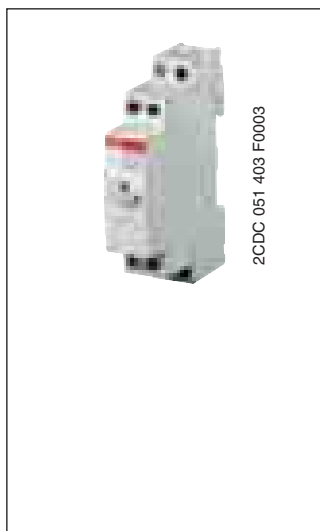
E 261-24



E 261 C-24



\* E 260 C  
Caution!  
The same electr. potential must be applied to terminals A1, B1 and C1.



### Latching relays with returning time

They switch off automatically after expiry of preset delay time (1 to 60 min.) if the manual OFF command has not been received. Glow lamp current 50 mA.

Coil voltage  $U_c = 230 \text{ V AC}$

1 NO	1.5 (2.0)	E 261 SRV-230	2CDE111010R0301	48570 8	0.07	1
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### Technical features

	E 260/E 260 C	E 261 SRV-230
Short-circuit rupturing capacity	8 A/250 V AC	16 A/250 V AC
Load of filament lamps	1000 W	1600 W
Fluorescent lamp load in twin-lamp circuit	1000 W	1000 W
Fluorescent lamp load shunt compensated	350 W ①	500 W
Fluorescent lamp load inductive or capacitive	500 W	1000 W
Electronic ballast	$I_{on} \text{ m } 70 \text{ A}/10 \text{ ms } ②$	$I_{on} \text{ m } 70 \text{ A}/10 \text{ ms a}$
Inductive load, $\cos\varphi = 0.6/230 \text{ V} \sim$	5 A	5 A
Contact rating at DC	100 W	100 W
Minimum contact rating	4 V AC/10 mA	4 V AC/10 mA
Contact gap/contact material	0.5 mm/Ag SnO <sub>2</sub>	0.5 mm/Ag SnO <sub>2</sub>
Service life mechanical switchover at 10 <sup>3</sup> /h	> 10 <sup>7</sup>	> 10 <sup>7</sup>
Service life at rated load $\cos\varphi = 1$ and 10 <sup>3</sup> /h	> 10 <sup>5</sup>	> 10 <sup>5</sup>
Service life with filament lamps 1000 W and 10 <sup>3</sup> /h	> 10 <sup>5</sup>	> 10 <sup>5</sup>
Service life at rated load $\cos\varphi = 0.6$ and 10 <sup>3</sup> /h	> 10 <sup>4</sup>	> 10 <sup>4</sup>
Max. switching rate	10 <sup>3</sup> /h	10 <sup>3</sup> /h
Bounce time	3 ms	
Connection capacity	2 x 1.5 mm <sup>2</sup> with connector sleeve 2 x 2.5 mm <sup>2</sup> without connector sleeve	
Tightening torque	0.5 ... 0.8 Nm	0.5 ... 0.8 Nm
ON duration at rated voltage	100 %	100 %
Coil voltage range	0.9 to 1.1 $U_n$	0.9 to 1.1 $U_n$
Minimum command time/interval between commands	50/1000 ms	50 ms
Ambient temperature	- 20 °C/- 4°F to 50 °C/122°F	- 20 °C/- 4°F to 50 °C/122°F
Control current when controlled locally	230 V AC 115 mA, after 10s 8 mA ± 20 % 24 V UC 140 mA, after 10s 80 mA ± 20 %	
Control current when controlled centrally	230 V AC 8 mA, after 10s 3 mA ± 20 % 24 V UC 17 mA ± 20 %	
Max. parallel capacity of individual control wire at 230 V ~	0.7 µF (ca. 2000 m)	
Max. parallel capacity of central control wire at 230 V ~	0.2 µF (ca. 700 m)	
Max. glow lamp current – parallel to 230 V control buttons	10 mA	10 mA
Max. induced voltage at 230 V control inputs	0.2 $U_n$	120 V

Latching relays for lamp installations on request.

① Not for E 260 C

② In the case of electronic control gear, take into account a 40-fold inrush current.

**Latching relays with control electronics for central ON/OFF switch**

The central commands have always priority and reliably switch on/off any given number of devices connected in parallel, irrespective of their previous switching position. Local control inputs are blocked when a central command is received. Same potential at central / local control input.

Contacts	Power loss	Order details	Bbn	Price	Price group	Weight	Pack unit
	W ①	Type code	Order code	4016779	1 piece	1 piece	kg pc.
				EAN			

① Values in brackets indicate power loss when permanently excited, rated voltage and rated contact loading.

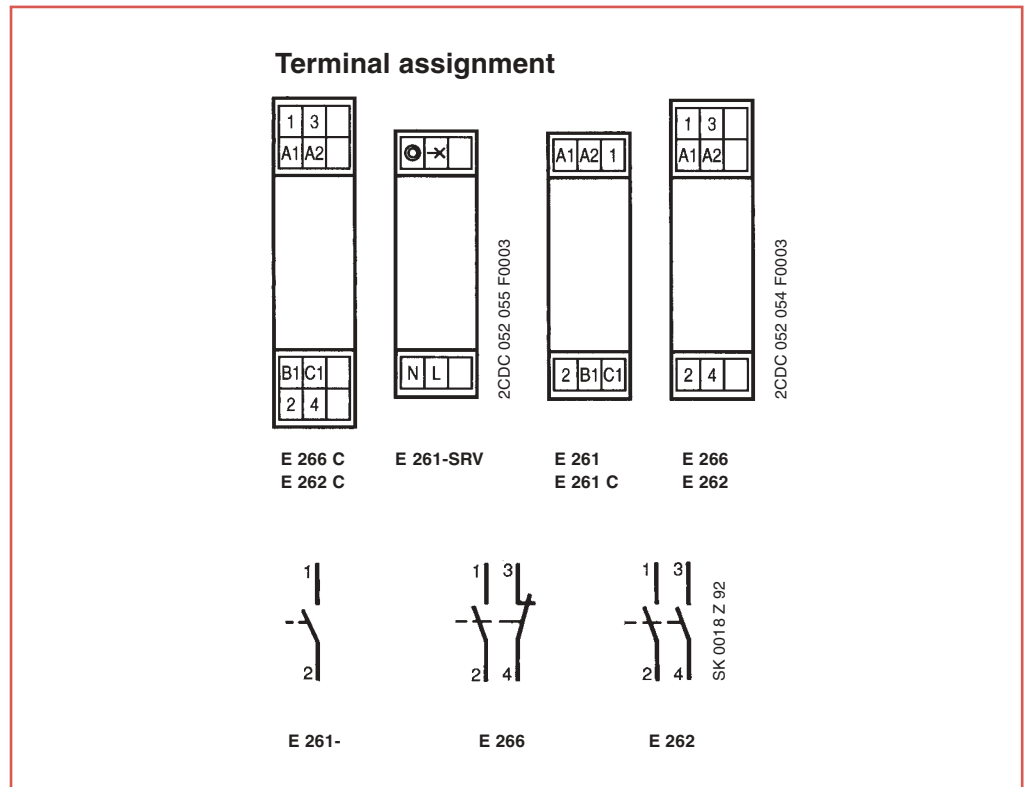
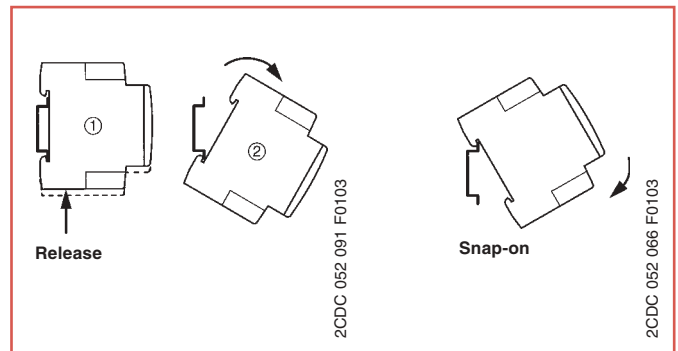
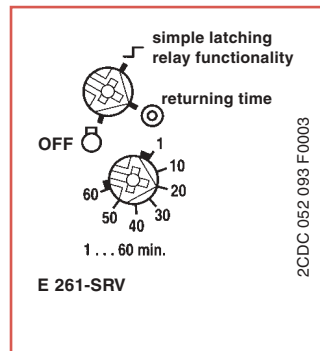
**Coil voltage  $U_c = 24$  V AC/DC**

1 NO	2.4 (3.0)	E 261 C-24	2CDE441000R0311	57599 7	0.085	1
1 NO+1 NC	2.4 (3.5)	E 266 C-24	2CDE444000R0311	57601 7	0.096	1
2 NO	2.4 (3.5)	E 262 C-24	2CDE442000R0311	57600 0	0.096	1

**Coil voltage  $U_c = 230$  V AC**

1 NO	1.5 (2.0)	E 261 C-230	2CDE141000R0311	57602 4	0.085	1
1 NO+1 NC	1.7 (3.0)	E 266 C-230	2CDE144000R0311	57604 8	0.096	1
2 NO	1.7 (3.0)	E 262 C-230	2CDE142000R0311	57603 1	0.096	1

7



## E 220 switches

Suitable for underload operation and equipped with sealable control lever in both positions. All devices are manufactured in a single module, through simple, quick and safe procedures. For correct operation, they need an upstream protection by devices against short-circuit and overload (fuses, MCBs).

Type	Rated voltage	Power loss	Order details	Bbn	Price	Price group	Weight	Pack unit
V AC	W	Type code	Order code	7612270	1 piece		1 piece	
				EAN			kg	pc.

### Control switches

#### Rated current = 16 A

2 NO+2 NC	250	1.92	<b>E 221-22</b>	2CCE 110 900 R0101	<b>93256 6</b>		0.070	10
3 NO+1 NC	400	1.92	<b>E 221-31</b>	2CCE 111 000 R0101	<b>93257 3</b>		0.070	10
1 NO+1 NC	250	0.96	<b>E 221-11</b>	2CCE 110 800 R0101	<b>93255 9</b>		0.070	10

#### Rated current = 25 A

1 NO+1 NC	250	2.26	<b>E 222-11</b>	2CCE 120 800 R0111	<b>93262 7</b>		0.070	10
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### One-way switches

#### Rated current = 16 A

1 NO	250	0.48	<b>E 221-10</b>	2CCE 110 100 R0101	<b>93234 4</b>		0.055	10
2 NO	250	0.96	<b>E 221-20</b>	2CCE 110 200 R0101	<b>93236 8</b>		0.060	10
3 NO	400	1.44	<b>E 221-30</b>	2CCE 110 300 R0101	<b>93238 2</b>		0.065	10
4 NO	400	1.92	<b>E 221-40</b>	2CCE 110 400 R0101	<b>93240 5</b>		0.070	10

#### Rated current = 25 A

1 NO	250	1.13	<b>E 222-10</b>	2CCE 120 100 R0111	<b>93241 2</b>		0.055	10
2 NO	250	2.26	<b>E 222-20</b>	2CCE 120 200 R0111	<b>93243 6</b>		0.060	10
3 NO	400	3.39	<b>E 222-30</b>	2CCE 120 300 R0111	<b>93245 0</b>		0.065	10
4 NO	400	4.52	<b>E 222-40</b>	2CCE 120 400 R0111	<b>93247 4</b>		0.070	10

## Technical features

<b>Switching capacity</b>	1.25 I <sub>n</sub> ; 1.1 U <sub>n</sub> ; cosφ = 0.6 according to DIN VDE 0632, AC 22 according to VDE 0660 Part 107, IEC 947-3
<b>Short-circuit-withstand capacity</b>	3 kA, 400 V, cosφ = 0.8
<b>Sealable</b>	in ON and OFF positions
<b>Climatic resistance</b>	constant climate 40/92 DIN 50 015 alternating climate SFW DIN 50 017
<b>Ambient temperature</b>	- 25 °C/- 13° F to + 55 °C/131° F
<b>Storage temperature</b>	- 40 °C to + 70 °C
<b>Connection capacity</b>	from 1 x 1 mm <sup>2</sup> to 1 x 6 mm <sup>2</sup> or 2 x 2.5 mm <sup>2</sup> massive; from 1 x 0.75 mm <sup>2</sup> to 2 x 1.5 mm <sup>2</sup> flexible with connector sleeve or pin-end connector
<b>Positive opening</b>	according to DIN VDE 0113
<b>Rated voltage</b>	250/400 V AC
<b>Minimum rated voltage</b>	24 V DC/AC



SK 0122 B 99



SK 0057 B 98

Type	Rated voltage V AC	Power loss W	Order details Type code	Order code	Bbn 7612270 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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Rated current = 32 A

1 NO	250	2.2	E 223-10	2CCE 130 100 R0121	93248 1			0.055	10
2 NO	250	4.4	E 223-20	2CCE 130 200 R0121	93249 8			0.060	10
3 NO	400	6.6	E 223-30	2CCE 130 300 R0121	93250 4			0.065	10
4 NO	400	8.8	E 223-40	2CCE 130 400 R0121	93251 1			0.070	10

One-way switches with built-in pilot lamp for 230 V~

Rated current = 16 A

1 NO	250	0.5	E 221-10 x	2CCE 110 103 R0101	93235 1			0.060	10
2 NO	250	1.0	E 221-20 x	2CCE 110 203 R0101	93237 5			0.065	10
3 NO	400	1.5	E 221-30 x	2CCE 110 303 R0101	93239 9			0.087	10

Rated current = 25 A

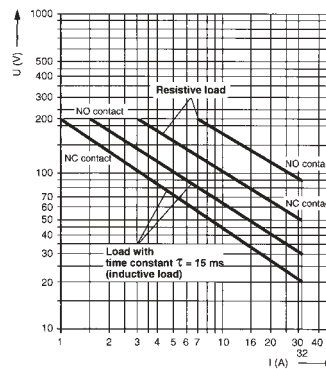
1 NO	250	1.15	E 222-10 x	2CCE 120 103 R0111	93242 9			0.060	10
2 NO	250	2.30	E 222-20 x	2CCE 120 203 R0111	93244 3			0.065	10
3 NO	400	3.45	E 222-30 x	2CCE 120 303 R0111	93246 7			0.087	10

Two-way switches

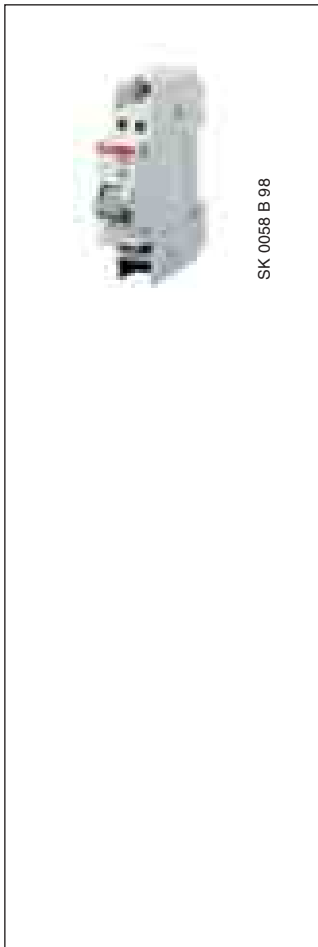
Rated current = 16 A

1 CO	250	0.48	E 221-6	2CCE 110 500 R0101	93260 3			0.060	10
2 CO	250	0.96	E 221-6/2	2CCE 110 600 R0101	93261 0			0.070	10

E 220 DC switching capacity



SK 0079 Z00



Rated current = 25 A

1 CO	250	1.13	E 222-6	2CCE 120 500 R0121	932658	0.060	10
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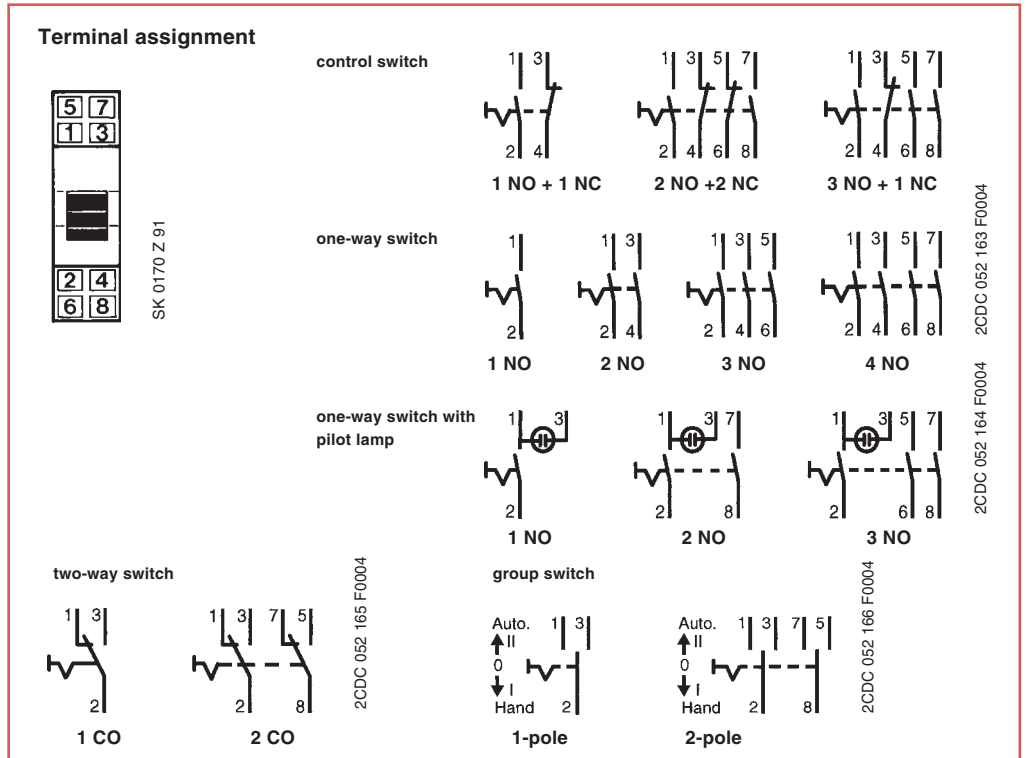
Two-way switch with two off positions (I-O-II, manual-OFF-automatic)

Rated current = 16 A

1-pole	250	0.48	E 221-4	2CCE 110 502 R0101	93258 0	0.060	10
2-pole	250	0.96	E 221-4/2	2CCE 110 602 R0101	93259 7	0.070	10

Rated current = 25 A

1-pole	250	1.13	E 222-4	2CCE 120 520 R0111	93263 4	0.060	10
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## E 220 pushbuttons and indicator lamps

The pushbuttons are used for remote control in every kind of electric installation (public, tertiary, industrial).

The indicator lamps signal any event in every kind of electric installation (public, tertiary, industrial).

### Not lighted pushbuttons with contacts 1NO+1NC

Hood's colour	Order details	Bbn 7612270	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN		kg	pc.
grey	E225-11 B	2CCE110810R0001	932665		0.055	10
red	E225-11 C	2CCE110820R0001	932672		0.055	10
green	E225-11 D	2CCE110830R0001	932689		0.055	10
yellow	E225-11 E	2CCE110840R0001	932696		0.055	10
black	E225-11 F	2CCE110850R0001	932702		0.055	10
blue	E225-11 G	2CCE110860R0001	932719		0.055	10
no hood	E225-11 Z	2CCE110804R0001	932726		0.053	10

### Lighted pushbuttons with contacts 1NO+1NC

Button's colour	Order details	Bbn 7612270	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN		kg	pc.
transparent	E227-11 B	2CCE110870R0011	932740		0.055	10
red	E227-11 C	2CCE110820R0011	932757		0.055	10
green	E227-11 D	2CCE110830R0011	932764		0.055	10
yellow	E227-11 E	2CCE110840R0011	932771		0.055	10
blue	E227-11 G	2CCE110860R0011	932788		0.055	10
no button - no lamp	E227-11 Z	2CCE110804R0011	932795		0.045	10

### Indicator lamps with 230 V a.c. bulb

Hood's colour	Order details	Bbn 7612270	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN		kg	pc.
transparent	E229-B	2CCE100070R0021	932801		0.045	10
red	E229-C	2CCE100020R0021	932818		0.045	10
green	E229-D	2CCE100030R0021	932825		0.045	10
yellow	E229-E	2CCE100040R0021	932832		0.045	10
blue	E229-G	2CCE100060R0021	932849		0.045	10
no hood	E229-Z	2CCE100004R0021	932856		0.040	10

### Technical features

Rated voltage $U_n$	[V]	a.c. 250
Rated current $I_n$	[A]	16
Rated frequency	[Hz]	50/60
Power consumption	[W]	see technical details
Modules	[No]	1
Standards		IEC EN 60669-1
Approvals		UL, CSA, VDE, CEBEC





TEPM0207



TEPM0208

### Hoods for not lighted pushbuttons E225

Hood's colour	Order details	Bbn	Price	Price	Weight	Pack
	Type code	7612270	1 piece	group	1 piece	unit
		Order code			kg	pc.
			EAN			
grey	E220-B 1	2CCE000015R0001	932948		0.002	100
red	E220-C 1	2CCE000025R0001	932979		0.002	100
green	E220-D 1	2CCE000035R0001	933006		0.002	100
yellow	E220-E 1	2CCE000045R0001	933037		0.002	100
black	E220-F 1	2CCE000055R0001	933051		0.002	100
blue	E220-G 1	2CCE000065R0001	933075		0.002	100

### Spare buttons for E227 indicator lamps

Button's colour	Order details	Bbn	Price	Price	Weight	Pack
	Type code	7612270	1 piece	group	1 piece	unit
		Order code			kg	pc.
			EAN			
transparent	E220-B	2CCE000075R0011	932931		0.002	100
red	E220-C	2CCE000025R0011	932962		0.002	100
green	E220-D	2CCE000035R0011	932993		0.002	100
yellow	E220-E	2CCE000045R0011	933020		0.002	100
blue	E220-G	2CCE000065R0011	933068		0.002	100

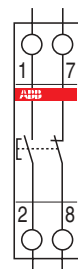
### Spare hoods for E229 indicator lamps

Hood's colour	Order details	Bbn	Price	Price	Weight	Pack
	Type code	7612270	1 piece	group	1 piece	unit
		Order code			kg	pc.
			EAN			
transparent	E220-B 3	2CCE000075R0021	932955		0.002	100
red	E220-C 3	2CCE000025R0021	932986		0.002	100
green	E220-D 3	2CCE000035R0021	933013		0.002	100
yellow	E220-E 3	2CCE000045R0021	933044		0.002	100
blue	E220-G 3	2CCE000065R0021	933082		0.002	100

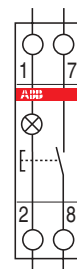
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E225 pushbutton  
1NO + 1NC

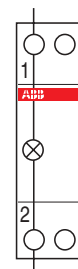


E227 lighted pushbutton  
1NO



Max. 2W

Indicator lamp



Max. 2W

**Spare bulbs**

Rated voltage	Order details		Bbn 4012233	Price 1 piece	Price group	Weight 1 piece	Pack unit
V	Type code	Order code	EAN			kg	pc.
12 AC	E 10/12	2CCE300005R0001	631605			0.004	100
24 AC	E 10/24	2CCE400005R0001	631803			0.004	100
48 AC	E 10/48	2CCE500005R0001	632008			0.004	100
60 AC	E 10/60	2CCE700005R0001	632107			0.004	100
110 AC	E 10/110	2CCE800005R0001	632206			0.003	100
230 AC	E 10/230	2CCE100005R0001	983704			0.003	100
220 DC	E 10/220	2CCE900005R0001	667307			0.003	100

**Lamp driver**

	Order details		Bbn 4011395	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN			kg	pc.
	E 220-LZ	2CCE000005R0001	002902			0.002	10

For loads to be automatically controlled through high number of operations; i.e, building automation, controlling of small pumps, ventilations, heating systems, lighting systems, and so on.

### ESB series contactors

The series consists of various models differing in the number of contacts, rated current and control circuit voltage.

#### ESB contactors (20 A)

Number of contacts	Command circuit's rated voltage U <sub>c</sub>	Order details		Bbn	Price 1 piece	Price group	Weight 1 piece	Pack unit
		Type code	Order code	347152				
VAC		Type code	Order code	EAN			kg	pc.
1NO+1NC	12	ESB20-11/12	GHE3211302R1004	1231148			0.200	10
1NO+1NC	24	ESB20-11/24	GHE3211302R0001	0263515			0.200	10
1NO+1NC	48	ESB20-11/48	GHE3211302R0003	0263539			0.200	10
1NO+1NC	110	ESB20-11/110	GHE3211302R0004	1231049			0.200	10
1NO+1NC	230	ESB20-11/230	GHE3211302R0006	0263560			0.200	10
<hr/>								
2NC	12	ESB20-02/12	GHE3211202R1004	1232145			0.200	10
2NC	24	ESB20-02/24	GHE3211202R0001	0236812			0.200	10
2NC	48	ESB20-02/48	GHE3211202R0003	0263836			0.200	10
2NC	110	ESB20-02/110	GHE3211202R0004	1232046			0.200	10
2NC	230	ESB20-02/230	GHE3211202R0006	0263867			0.200	10
<hr/>								
2NO	12	ESB20-20/12	GHE3211102R1004	1230141			0.200	10
2NO	24	ESB20-20/24	GHE3211102R0001	0263218			0.200	10
2NO	48	ESB20-20/48	GHE3211102R0003	0263232			0.200	10
2NO	110	ESB20-20/110	GHE3211102R0004	1230042			0.200	10
2NO	230	ESB20-20/230	GHE3211102R0006	0263263			0.200	10

#### ESB24 contactors (24 A)

Number of contacts	Command circuit's rated voltage U <sub>c</sub>	Order details		Bbn	Price 1 piece	Price group	Weight 1 piece	Pack unit
		Type code	Order code	401361				
VAC		Type code	Order code	EAN			kg	pc.
4NO	12	ESB24-40/12	GHE3291102R1004	4084478			0.280	5
4NO	24	ESB24-40/24	GHE3291102R0001	4084416			0.280	5
4NO	230	ESB24-40/230	GHE3291102R0006	4084454			0.280	5

### Technical characteristics

		ESB 20	ESB 24
Rated voltage U <sub>n</sub>	[V]	a.c. 230	a.c. 400
Rated current I <sub>n</sub> in AC1	[A]	20	24
Rated power in AC3	[kW]		
230V		1.3	2.2
400V		-	4
Rated frequency	[Hz]	50/60	40/450
Control circuit voltage	[V]	a.c. 12, 24, 48, 110, 230	a.c./d.c. 12, 24, 230
Electric operations	[No]	1 million	1 million
Mechanic operations			
in AC1	[No]	150,000	130,000
in AC3	[No]	150,000	500,000
Power consumption	[W]	1 per pole	1, 2 per pole
Modules	[No]	1	2
Standards		IEC 60947-4-1	IEC 60947-4-1
		IEC 61095	IEC 61095

#### ESB40 contactors (40 A)

Number of contacts	Command circuit's rated voltage U <sub>c</sub>	Order details		Bbn 401361	Price 1 piece	Price group	Weight 1 piece	Pack unit
		Type code	Order code					
	VAC						kg	pc.
4NO	24	<b>ESB40-40/24</b>	GHE3491102R0001	<b>4084829</b>			0.450	1
4NO	230	<b>ESB40-40/230</b>	GHE3491102R0006	<b>4084867</b>			0.450	1

#### ESB63 contactors (63 A)

4NO	24	<b>ESB63-40/24</b>	GHE3691102R0001	<b>4084935</b>			0.450	1
4NO	230	<b>ESB63-40/230</b>	GHE3691102R0006	<b>4084973</b>			0.450	1

#### Auxiliary elements and accessories available for ESB24/40/63, EN24/40

	Order details		Bbn 401361	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code					

#### Auxiliary elements

2NO	<b>EH 04-20</b>	GHE3401321R0001	<b>4084768</b>			0.230	1
2NO+1NC	<b>EH 04-11</b>	GHE3401321R0002	<b>4084775</b>			0.230	1

#### Other accessories

Spacer	<b>ESB-DIS</b>	GHE3201902R0001	<b>4085215</b>			0.002	10
Terminal covers for ESB24	<b>ESB-PLK 24</b>	GHE3201903R0001				0.003	10
Terminal covers for ESB40/63	<b>ESB-PLK 40/63</b>	GHE3401903R0001	<b>4085277</b>			0.003	10

#### Technical characteristics

		ESB 40	ESB 63
<b>Rated voltage U<sub>n</sub></b>	[V]	a.c. 400	a.c.400
<b>Rated current I<sub>n</sub> in AC1</b>	[A]	40	63
<b>Rated power in AC3</b>	[kW]		
230V		5.5	8.5
400V		11	15
<b>Rated frequency</b>	[Hz]	40/450	40/450
<b>Control circuit voltage</b>	[V]	a.c./d.c. 24, 230	a.c./d.c. 24, 230
<b>Electric operations</b>	[No]	1 million	1 million
<b>Mechanic operations</b>			
in AC1	[No]	150,000	150,000
in AC3	[No]	170,000	240,000
<b>Power consumption</b>	[W]	3 per pole	6 per pole
<b>Modules</b>	[No]	3	3
<b>Standards</b>		IEC 60947-4-1	IEC 60947-4-1
		IEC 61095	IEC 61095

#### Technical characteristics of the auxiliary contact

<b>Thermal current I<sub>th</sub></b>	[A]	6
<b>Operating rated current I<sub>e</sub> AC15 a</b>		
< 240V a.c.	[A]	4
< 380/415V a.c.	[A]	3
< 500V a.c.	[A]	2
<b>Minimum load</b>		12V 300mA

### EN series contactors

Equipped with front switch to select operation mode (override): permanent OFF, automatic operation, manual ON.

#### EN20 contactors (20 A)

Number of contacts	Command circuit's rated voltage U <sub>c</sub>	Order details		Bbn	Price	Price group	Weight	Pack unit
		Type code	Order code	347152	1 piece		1 piece	
		Type code	Order code	EAN			kg	pc.
2NO	230	EN20-20/230	GHE3221101R0006	0265069			0.280	1

#### EN24 contactors (24 A)

Number of contacts	Command circuit's rated voltage U <sub>c</sub>	Order details		Bbn	Price	Price group	Weight	Pack unit
		Type code	Order code	401361	1 piece		1 piece	
		Type code	Order code	EAN			kg	pc.
3NO	230	EN24-30/230	GHE3261501R0006	4134319			0.280	1
4NO	230	EN24-40/230	GHE3261101R0006	4133688			0.280	1

#### EN40 contactors (40 A)

2NO	230	EN40-20/230	GHE3421401R0006	4129582			0.450	1
3NO	230	EN40-30/230	GHE3421501R0006			0.450	1	
4NO	230	EN40-40/230	GHE3421101R0006	4133701			0.450	1

### Technical characteristics

		EN 20	EN 24	EN 40
<b>Rated voltage U<sub>n</sub></b>	[V]	a.c. 230/400	a.c. 230/400	a.c. 230/400
<b>Rated current I<sub>n</sub> in AC1</b>	[A]	20	24	40
<b>Rated output in AC3</b>				
230	[kW]	1.3	2.2	5.5
400	[kW]	-	4	11
<b>Rated frequency</b>	[Hz]	50/60	40/450	40/450
<b>Control circuit voltage</b>	[V]	a.c. 230		
<b>Power consumption</b>	[W]	1 per pole	1.2 per pole	3 per pole
<b>Modules</b>	[No]	1	2	3
<b>Standards</b>		IEC/EN 61095	IEC/EN 61095	IEC/EN 61095
<b>Approvals</b>		UTE		



2CDC 051 026 F0003

### E 234 CT time delay relays

Used when, according to the time, the automatic load control is required for lighting, heating, ventilation systems, access barriers, gates, machine tools, etc.

#### Characteristics

- 1 multifunction and 5 single-function timers
- Wide supply voltage range: 24-240 V AC / 24-48 V DC
- 1 c/o contact (250 V / 6 A)
- 7 time ranges 0.05 s - 100 h
- Parallel load to the voltage-related control inputs possible
- Width of only 17.5 mm

Contact	Power loss	Order details	Bbn	Price	Price group	Weight	Pack unit
	W	Type code	Order code	1 piece		1 piece	pc.
			EAN			kg	

Multifunction relay

CT-MFD: 7 functions<sup>1)</sup>, 7 time ranges (0.05 s - 100 h), 1 c/o contact, 2 LEDs

1 CO	2.5	<b>E 234 CT-MFD</b>	1S VR50 0020 R0000	<b>35063 4</b>		0.06	1
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ON-delay timer ☒

CT-ERD: 7 time ranges (0.05 s - 100 h), 1 c/o contact, 2 LEDs

1 CO	2.5	<b>E 234 CT-ERD</b>	1S VR50 0100 R0000	<b>35065 8</b>		0.06	1
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OFF-delay timer ■

CT-AHD: 7 time ranges (0.05 s - 100 h), 1 c/o contact, 2 LEDs

1 CO	2.5	<b>E 234 CT-AHD</b>	1S VR50 0110 R0000	<b>35066 5</b>		0.06	1
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Impulse-ON timer 1 ⏏

CT-VWD: 7 time ranges (0.05 s - 100 h), 1 c/o contact, 2 LEDs

1 CO	2.5	<b>E 234 CT-VWD</b>	1S VR50 0130 R0000	<b>35067 2</b>		0.06	1
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Flasher starting with ON ⏏ ☒

CT-EBD: 7 time ranges (0.05 s - 100 h), 1 c/o contact, 2 LEDs

1 CO	2.5	<b>E 234 CT-EBD</b>	1S VR50 0150 R0000	<b>35068 9</b>		0.06	1
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Pulse generator ⏏ ■

CT-TGD: 7 time ranges (0.05 s - 100 h)<sup>2)</sup>, 1 c/o contact, 2 LEDs

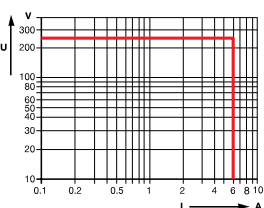
1 CO	2.5	<b>E 234 CT-TGD</b>	1S VR50 0160 R0000	<b>35069 6</b>		0.06	1
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1) Functions: ON-delay, OFF-delay with auxiliary voltage, impulse-ON, pulse former with auxiliary voltage, impulse-OFF with auxiliary voltage, flasher starting with ON, flasher starting with OFF  
2) ON and OFF times adjustable independently, 2 x 0.05 s - 100 h  
Packing unit: 1 piece

7

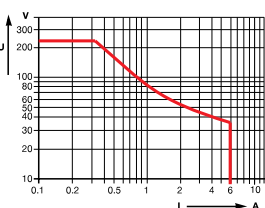
### Load limit curves

AC load (resistive)



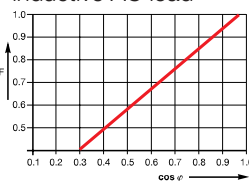
1SVC 110.000 F 0448

DC load (resistive)



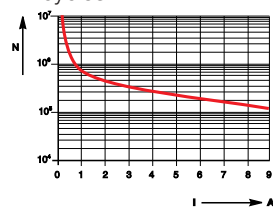
1SVC 110.000 F 0449

Reduction factor F for inductive AC load



1SVC 110.000 F 0185

Contact lifetime /switching cycles N



1SVC 110.000 F 0450

220 V 50 Hz 1 AC  
360 cycles/h

### Technical features

		CT-D range
<b>Input circuits</b>		
Supply voltage - power consumption	A1-A2	24-240 V AC / 24-48 V DC - approx. 0.6-1.3 VA/W
Supply voltage tolerance		-15 %...+10 %
Supply voltage frequency	DC supply AC supply	0 Hz 50/60 Hz
Control contact connections, voltage-related <sup>1)</sup>	A1-Y1*	external time start
Minimum control input pulse length		20 ms
Maximum cable length to the control inputs		
Duty time		100 %
<b>Timing circuit</b>		
Time ranges		7 time ranges 0.05 s - 100 h 1.) 0.05-1 s 2.) 0.5-10 s 3.) 5-100 s 4.) 0.5-10 min 5.) 5-100 min 6.) 0.5-10 h 7.) 5-100 h
Recovery time		<50 ms
Repeat accuracy (constant parameters)		< +/- 0.5 %
Timing error within the supply voltage tolerance		<0.5 %
Timing error within the temperature range		<0.06 % / °C
<b>Indication of operational states</b>		
Supply voltage / timer		green LED steady / flashing while timing
Output relay energized		red LED
<b>Output circuits</b>		<b>15-16/18</b>
Number of contacts		relay, 1 c/o contact
Contact material		AgSnO <sub>2</sub>
Rated voltage	acc. to VDE 0110, IEC 60947-1	250 V
Minimum switching voltage		12 V
Maximum switching voltage		250 V AC
Minimum switching current		100 mA
Maximum switching current		6 A
Rated switching current	AC-12 (resistive) 230 V	6 A
acc. to IEC 60947-5-1	AC-15 (inductive) 230 V	3 A
	DC-12 (resistive) 24 V	6 A
	DC-13 (inductive) 24 V	2 A
Maximum lifetime	mechanical	30 x 10 <sup>6</sup> switching cycles
	electrical (AC-12, 230 V, 4 A)	0.1 x 10 <sup>6</sup> switching cycles
Short circuit proof,	n/c	6 A fast, operating class gL
max. fuse rating	n/o	10 A fast, operating class gL
<b>General data</b>		
Width of the enclosure		17.5 mm
Wire size		2 x 1.5 mm <sup>2</sup> (2 x 16 AWG) with wire end ferrule, 2 x 2.5 mm <sup>2</sup> (2 x 14 AWG) without wire end ferrule
Weight		approx. 60 g (2.1 oz)
Mounting position		any
Degree of protection enclosure / terminals		IP50 / IP 20
Operating temperature		-20...+60 °C
Storage temperature		-40...+85 °C
Mounting		DIN rail (EN 50022), snap-on mounting

\* electrically isolated, not polarized

**Technical features**

CT-D range

**Standards**

Product standard	IEC 61812-1 10.1996, EN 611812-1 + A11/8.1999, DIN VDE 0435 part 2021	
EMC Directive	89/336/EEC	
Electromagnetic compatibility	acc.to EN 61000-6-2, EN 61000-6-4	
ESD	acc. to IEC 61000-4-2, EN 61000-4-2	level 3 6 kV / 8 kV
HF radiation resistance	acc. to IEC 61000-4-3, EN 61000-4-3	level 3 10 V/m
Burst	acc. to IEC 61000-4-4, EN 61000-4-4	level 3 2 kV / 5 kHz
Surge	acc. to IEC 1000-4-5, EN 61000-4-5	level 4 2 kV L-L
HF line emission	acc. to IEC 1000-4-6, EN 61000-4-6	level 3 10 V
Low Voltage Directive	73/23/EEC	
Operational reliability	acc. to IEC 68-2-6	4 g
Mechanical resistance	acc. to IEC 68-2-6	6 g

**Approvals / marks**

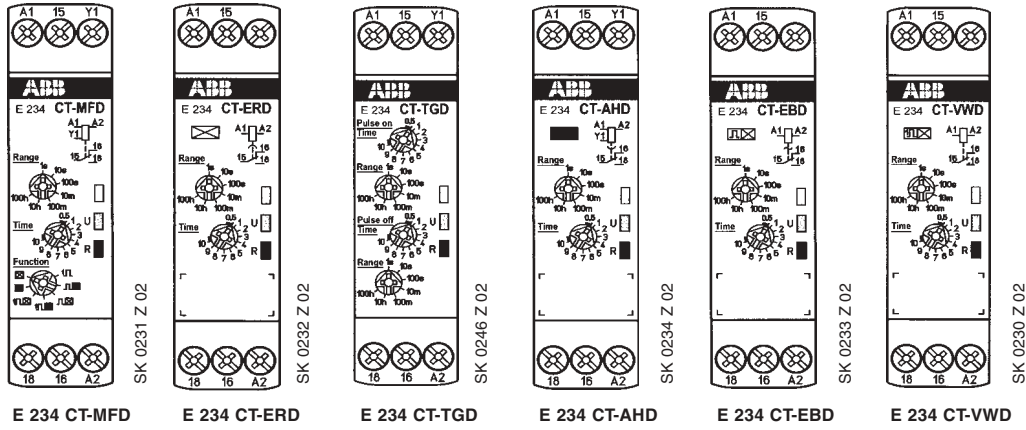
Approvals	cULus and GOST; CCC (pending)
Marks	CE and C-Tick

**Isolation data**

Rated insulation voltage between supply circuit, control circuit and output circuit	acc. to IEC 50175 / VDE 0160	300 V
Rated impulse withstand voltage between all isolated circuits	acc. to VDE 0110, IEC 664	4 kV / 1.2-50 µs
Test voltage between all isolated circuits		2.5 kV, 50 Hz, 1 min.
Pollution category	acc. to IEC 50175 / VDE 0160 / UL508	2
Overtoltage category	acc. to IEC 50175 / VDE 0160 / UL508	III
Environmental testing	acc. to IEC 68-2-30	24 h cycle time, 55 °C, 93 % rel., 96 h

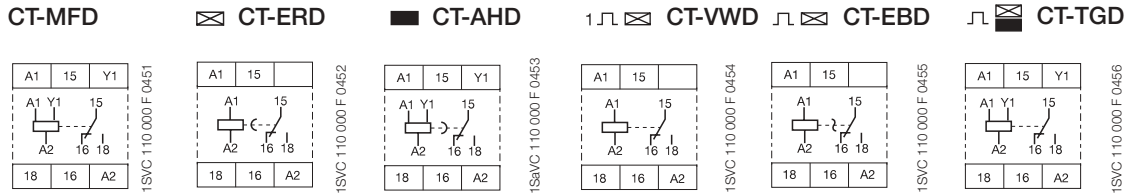


Front sides



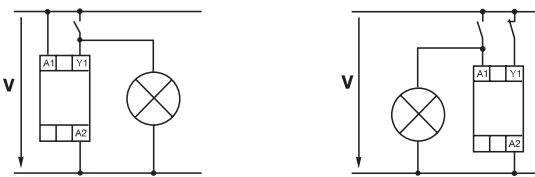
CT-D range


Connection diagrams, positions of connecting terminals



Wiring notes - CT-D range

for devices with control contact, parallel load to control contact/input possible/allowed

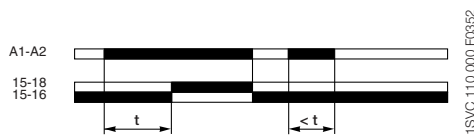


 **ON-delay (Delay on make)**  
**CT-ERD, CT-MFD**


Timing starts when the supply voltage is applied to the terminals **A1-A2**. After the adjusted time has elapsed, the output relay is energized.

If the supply voltage is disconnected, the output relay resets and the elapsed time is cancelled.

If the supply voltage is disconnected before the adjusted time has elapsed, the output relay is not energized.



t = adjusted delay time

 **OFF-delay, with auxiliary voltage (Delay on break)**  
**CT-AHD, CT-MFD**

The OFF-delay function requires continuous voltage supply at the terminals **A1-A2** while timing.

Timing is controlled by a control contact **Y1** (supply voltage potential). If this control contact is closed, the output relay is energized.


By opening the control contact, the timer is started and the adjusted time begins to elapse.

After the delay time has elapsed, the output relay is de-energized. If the control contact is closed once more while the timer is running, the time delay is reset. If the control contact is opened again, the timer restarts.



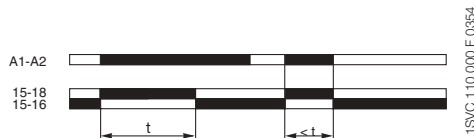
t = adjusted delay time

**7**

 **Impulse-ON (Interval)**  
**CT-VWD, CT-MFD**

When applying the supply voltage to the terminals **A1-A2**, the output relay is energized without delay and de-energized after the adjusted pulse time has elapsed.

If the supply voltage is disconnected before the adjusted pulse time has elapsed, the output relay is de-energized without delay.



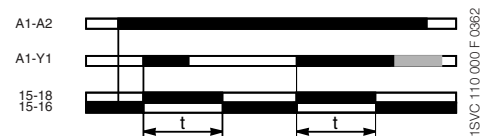
t = adjusted pulse time

 **Pulse former (Single shot)**  
**CT-MFD**


If control contact **Y1** is closed while supply voltage is applied, the output relay is energized for the adjusted pulse time, no matter whether control contact **Y1** is opened again or stays closed.

If the supply voltage is disconnected, the output relay is de-energized without delay.

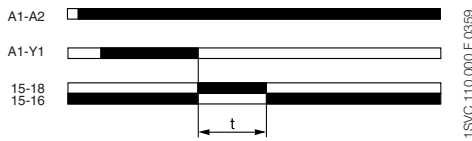
After the pulse has elapsed, the next pulse defined by the adjusted time can be activated by closing control contact **Y1** again.




t = adjusted impulse time

1  **Impulse-OFF, with auxiliary voltage**  
**(Trailing edge interval)**  
**CT-MFD**

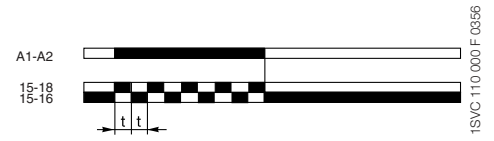
The impulse-OFF function requires continuous presence of supply voltage at the terminals **A1-A2**. If control contact **Y1** (supply voltage potential) is opened while supply voltage is applied, the output relay is energized without delay and the timer is started. The output relay stays energized for the adjusted pulse time and is de-energized after this time has elapsed. By disconnecting the supply voltage or by closing the control contact, the time delay is reset and the output relay is de-energized.




t = adjusted pulse time

 **Flasher, starting with ON**  
**(Recycling equal times, ON first)**  
**CT-EBD, CT-MFD**

When the supply voltage is applied to the terminals **A1-A2**, the output relay starts to cycle in symmetrical ON/OFF intervals. The ON/OFF time delays are equal and can be adjusted using the potentiometer on the front of the timer. If the supply voltage is disconnected, the output relay is de-energized.




t = adjusted flashing time

 **Flasher, starting with OFF**  
**(Recycling equal times, OFF first)**  
**CT-MFD**

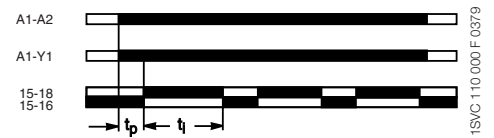
When the supply voltage is applied to the terminals **A1-A2**, the output relay starts to cycle in symmetrical ON/OFF intervals. It starts with an OFF interval. The ON/OFF time delays are equal and can be adjusted using the potentiometer on the front of the timer. If the supply voltage is disconnected, the output relay is de-energized.





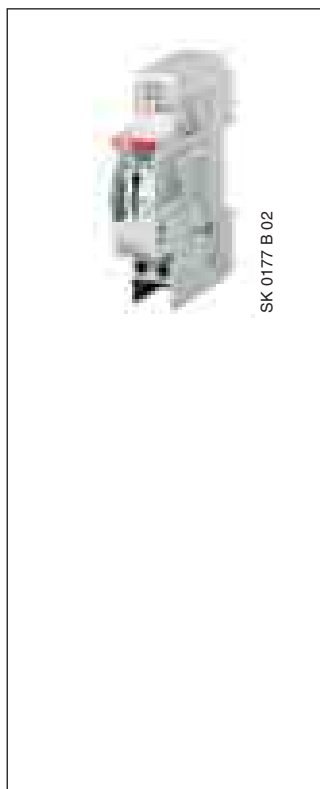
t = adjusted pulse time

 **Pulse generator, starting with ON or OFF**  
**(Recycling unequal times)**  
**CT-TGD**

When the supply voltage is applied to the terminals **A1** and **A2**, the timer relay starts either with an ON or an OFF cycle. Starting with ON or OFF can be selected. The ON-time and the OFF-time can be adjusted independently. If the supply voltage is disconnected, the output relay is de-energized.



$t_p$  = OFF-time  
 $t_i$  = pulse time  
A1-Y1  (closed) = starting with OFF  
A1-Y1  (open) = starting with ON



### E 232 staircase lighting time delay switches

As a rule, staircase lighting time-delay switches (t.d.s) are controlled by pushbuttons fitted with glow lamps.

The switches are designed to sustain a continuous load of up to 50 glow lamps and can therefore be used in multi-story buildings.

T.d.s. E 232-230 is equipped with an electromechanical timer having a synchronous-motor-controlled mechanism that ensures a high level of operational reliability in any desired mounting position. The time range is adjustable in intervals of 15 sec. within 1 to 7 min. Resettable after 30 sec.

Staircase lighting time-delay switch E 232 E has an electronic time delay function. Noteworthy features of the device include: high switching capacity, 100 mA glow lamp current to the pushbuttons, infinitely adjustable time range from

1 to 12 minutes as well as a low switching noise. The devices of type E 232 E-8/230 have an additional control input that is galvanically separated for AC/DC 8...230 V.

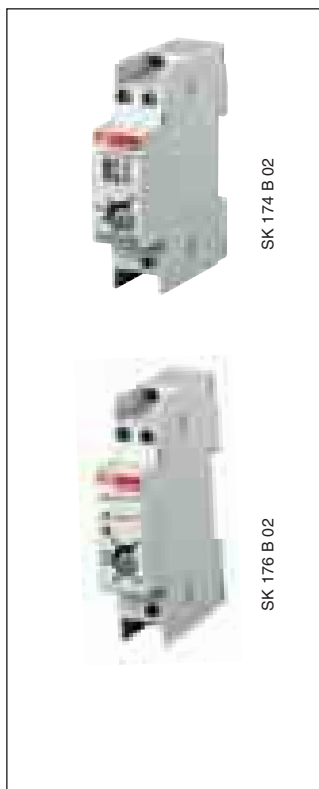
E 232 E-8/230 Plus offers an integrated warning function (2 warning signals that double flash) according to DIN 18015-2, as well as additional long-term periods from 10-30 minutes adjustable in 5-minutes' steps by shortly pressing the button once for each step, press longer for 60-minutes' intervals (if in PROG mode).

Suitable also for energy-saving lamps and fluorescent lamps with electronic ballast.

The electronic semi-light module E 232-HLM is an add-on to all t.d.s for semi-light control according to DIN 18015-2. During the alarm period, the module switches glow lamps and 230 V halogen lamps of up to 2300 W to 50 % of the normal output current. Adjustable time range from 20 – 60 sec.

Technical features	E 232-230	E 232E-230	E 232E-8/230	E 232E-8/230 Plus
Time range	1 – 7 min.	1 – 12 min.	1 – 12 min.	1 – 12 min.
Control voltage 230 V AC	■	■	■	■
Universal voltage additionally			8 .. 230 V AC/DC	8 .. 230 V AC/DC
Filament lamp current	50 mA	100 mA	100 mA	100 mA
Automatic recognition 3/4 lead circuit	switches (side-mounted)	■	■	■
Can be connected in series	■	■	■	■
Steady-light switch	■	■	■	■
Advance warning (double flash)				■
Adjustment 10 – 30 min. in 5-min intervals*				■
Long-term range of 60 min. *				■
Load of filament lamp	2300 W	2300 W	2300 W	2300 W

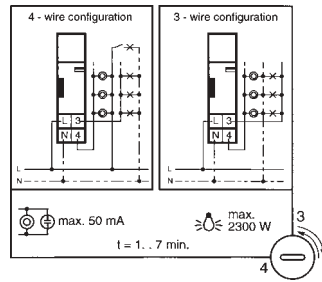
\* In PROG mode



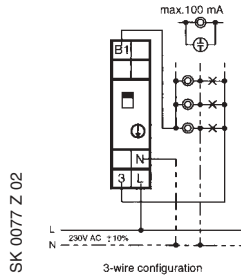
Time range	Power loss W	Order details		Bbn 4013614 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code	Order code					
1 ... 7 min.	1 VA	<b>E 232-230</b>	2CDE 110 000 R0501	<b>54824 3</b>			0.081	10
1 ... 12 min.	4.5 VA	<b>E 232 E-230</b>	2CDE 110 000 R0511	<b>54825 0</b>			0.083	10
1 ... 12 min.	4.5 VA	<b>E 232 E-8/230</b>	2CDE 010 000 R0511	<b>54826 7</b>			0.092	10
1 ... 12 min.	4.5 VA	<b>E 232 E-8/230 Plus</b>	2CDE 010 010 R0511	<b>54827 4</b>			0.093	10
20 ... 60 sec.	6 VA	<b>E 232-HLM</b>	2CDE 150 000 R0521	<b>54828 1</b>			0.075	10

Technical features	E 232-230	E 232E-...	E 232-HLM
<b>Rated voltage</b>	230 V AC, 50 Hz	230 V AC, 50/60 Hz	230 V AC, 50/60 Hz
<b>Range of control voltage</b>	0.9 to 1.1 U <sub>n</sub>	0.9 to 1.1 U <sub>n</sub>	0.9 to 1.1 U <sub>n</sub>
<b>Short-circuit rupturing capacity</b>	16 A, 230 V AC	16 A, 230 V AC	10 A, 230 V AC
<b>Load of filament lamp</b>	2300 W	2300 W	2300 W
<b>Load of halogen lamp</b>	2300 W	2300 W	2300 W
<b>Fluorescent lamps series compensated/not compensated</b>	2300 VA	2300 VA	not permissible
<b>Fluorescent lamps inductive or capacitive</b>	2300 VA	2300 VA	not permissible
<b>Fluorescent lamps shunt compensated</b>	1300 VA (70 mF)	1300 VA (70 mF)	not permissible
<b>Electronic ballast</b>	9 x 7 W; 6 x 11 W; 5 x 15 W; 5 x 20 W	9 x 7 W; 6 x 11 W; 5 x 15 W; 5 x 20 W	not permissible
<b>Inductive load cosφ = 0.6/230 V AC</b>	2300 VA	2300 VA	not permissible
<b>Contact material</b>	Ag Sn O <sub>2</sub>	Ag Sn O <sub>2</sub>	Ag Sn O <sub>2</sub>
<b>Contact gap</b>	≥ 3 mm	≥ 0.4 mm	≥ 0.4 mm
<b>Service life, mechanical, switchover 10<sup>3</sup>/h</b>	> 10 <sup>6</sup>	> 10 <sup>7</sup>	> 10 <sup>7</sup>
<b>Service life at rated load, cosφ = 1 or filament lamps 1000 W and 10<sup>3</sup>/h</b>	> 10 <sup>5</sup>	> 10 <sup>5</sup>	> 10 <sup>5</sup>
<b>Service life at rated load cosφ = 0.6 and 10<sup>3</sup>/h</b>	> 10 <sup>4</sup>	> 10 <sup>4</sup>	> 10 <sup>4</sup>
<b>Terminal cross section</b>	10.7 mm <sup>2</sup>	13.6 mm <sup>2</sup>	13.6 mm <sup>2</sup>
<b>Max. conductor cross section</b>	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>
<b>ON duration</b>	re-switchable after 30 sec.	100 %	100 %
<b>Ambient temperature</b>	- 10 °C/14°F to 50 °C/122°F	- 10 °C/14°F to 50 °C/122°F	- 10 °C/14°F to 50 °C/122°F
<b>Casing and insulation materials</b>	heat resistant, self-extinguishing thermoplast	heat resistant, self-extinguishing thermoplast	heat resistant, self-extinguishing thermoplast
<b>Control current at 230 V AC (8 AC)</b>	4.5 mA	20 mA (min. 8 mA)	–
<b>Min. command time</b>	10 ms	10 ms	–
<b>Glow lamps parallel to 230 V AC control inputs</b>	50 mA	100 mA	–

Wiring diagrams

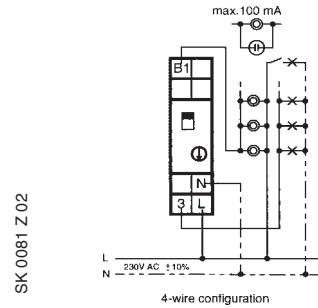


E 232-230



SK 0077 Z 02

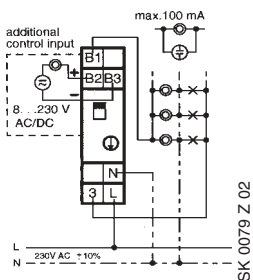
E 232 E-230



SK 0081 Z 02

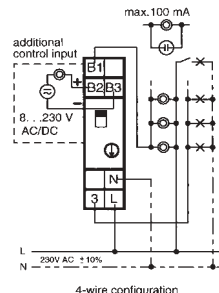
E 232 E-230

SK 0085 Z 02



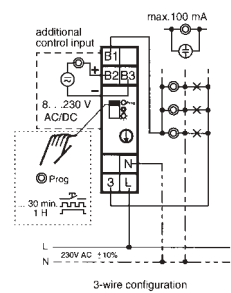
SK 0079 Z 02

E 232 E-8/230



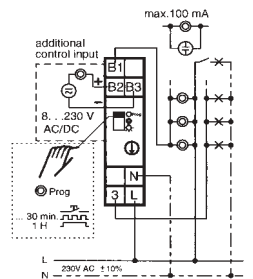
SK 0083 Z 02

E 232 E-8/230



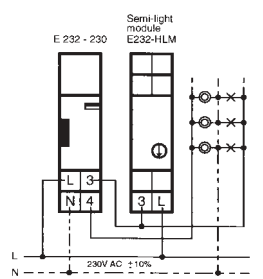
2CDC 052 210 F0203

E 232 E-8/230 Plus



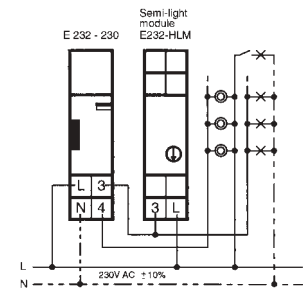
2CDC 052 211 F0203

E 232 E-8/230 Plus



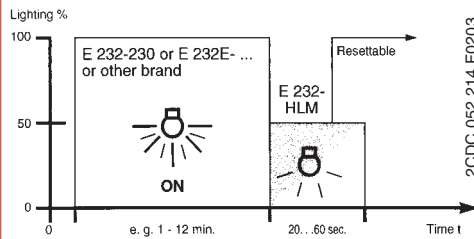
2CDC 052 212 F0203

E 232 HLM



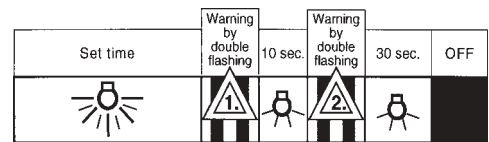
2CDC 052 213 F0203

E 232 HLM



2CDC 052 214 F0203

timing of a staircase lighting time-delay switch with semi-light module E 232-HLM



2CDC 052 215 F0203

warning function of E 232E-8/230 Plus



**STD50 dimmers for the control of lamps and ballast**

Description/ application	Power loss	Order details	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece	Pack unit
	W	Type code	Order code	EAN		kg	pc.

Dimmer for brightness control of filament lamps , 230 V tungsten halogen lamps, Iv halogen lamps with conventional transformers (phase control)

5 ①	STD 50-3	GH V021 1370 R0074	02790 8			0.155	1
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Dimmer for brightness control of filament lamps , 230 V tungsten halogen lamps, Iv halogen lamps with ABB electronic transformers (reverse phase)

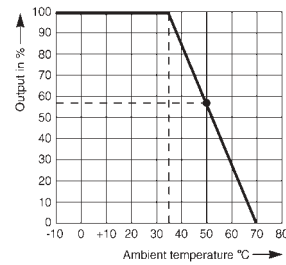
4 ①	STD 50-4	GH V021 1370 R0075	03300 8			0.105	1
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① power loss = 1% of connected load (4 or 5 W max)

**Technical features**

<b>Rated voltage</b>	230 V ~ 50 Hz
<b>Ambient temperature</b>	0 °C to + 35 °C
<b>Interference suppression</b>	CE

Control power STD 50-3: 20-500 W/VA  
STD 50-4: 40-420 W/VA



SK 0043 Z 96

Influence of ambient temperature on the control power  
The certified rated power is indicated on the dimmer.  
Where higher ambient temperatures occur, reduce values as is specified in the diagram.  
At 50 °C /122°F ambient temperature, the permissible load drops to 57%.



Electronic potentiometer for electronic control gear with control input 0/1 - 10 V DC, control current 50 mA DC

Rated current (terminal 3 and 4) 4 A  $\cos\phi = 0.9$ ; switching capacity 700 VA

Description/ application	Power loss W	Order details Type code	Order code	Bbn 4016779 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	5 ①	STD-EP	GH V021 1370 R0076	27050 2			0.073	1

Memory touch controller for electronic control gear

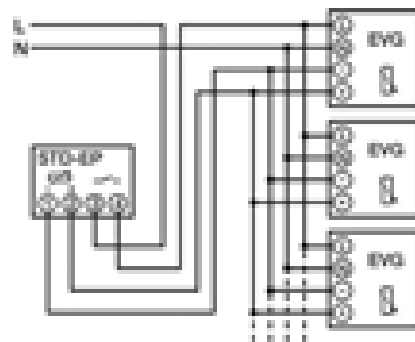
Rated voltage/switching output 4 A (~ 10 electronic control gear units)  $\cos\phi = 0.9$ ; 3 A  $\cos\phi = 0.5$ , switching capacity 700 VA

for electronic control gear with control input 1 - 10 V DC control current 50 mA max.	1	STD-MTS	GH V021 0881 R0004	27070 0			0.110	1
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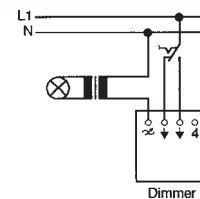
① power loss = 1% of connected load (7 W max)

7

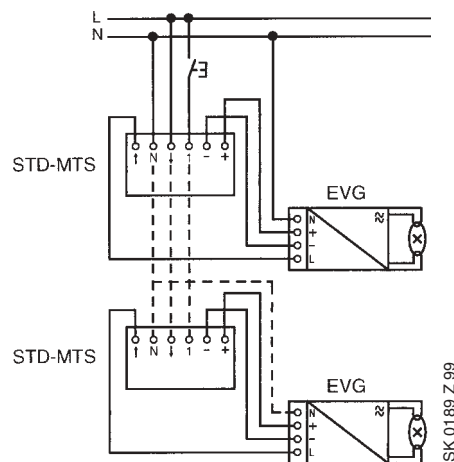
Electronic potentiometer



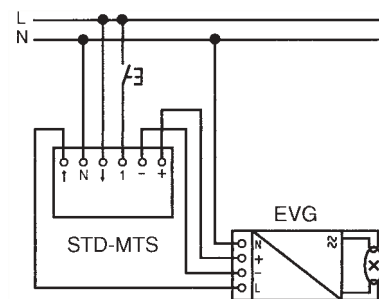
Dimmer STD 50-4 in two-way circuit, 1v halogen lamps via electronic transformer



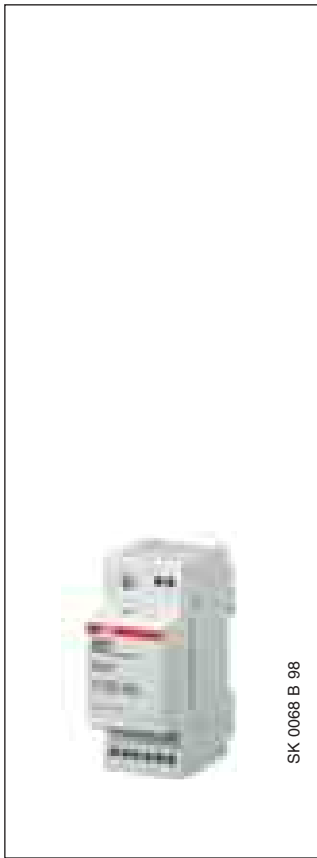
Brightness control of fluorescent lamps with 1-10 V control input. Control of more than one memory touch controller STD-MTS via one pushbutton.



Brightness control of a fluorescent lamp with 1-10 V DC control input with memory touch controller STD-MTS with external pushbutton, e.g. E 225







**STD universal dimmers**

Universal dimmer STD-500 MA and the connected power extension unit STD-420 SL are suitable for the brightness control of:

- filament lamps
- 230 V tungsten halogen lamps
- lv halogen lamps with conventional transformers (phase control)
- electronic transformers for lv tungsten halogen lamps (reverse phase control) e.g.: ABB: ETR-70-230, 105-230, 150-230

The STD-500 MA dimmer can be operated by one or more unlit pushbuttons or via a data line:

- EIB control element SB/S1.1
- Powernet control element PSB/1.1

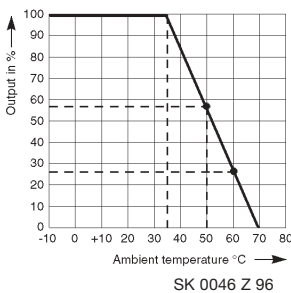
Power unit STD-420 SL is used to boost the connected load and controlled exclusively by the preset command of the STD-500 MA dimmer. The parallel connection of the outputs of the universal high-performance dimmer and the pertaining power extensions (up to 6 units) allow for a dimming power of 3,000 W/VA max at one load line.

Not suitable for dimming fluorescent lamps, transformers with current monitor and leakage held transformer.

Description/ application	Power loss W	Order details	Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
		Type code					
high-performance dimmer	max 6 W	<b>STD-500 MA</b>	GJ B000 6590 A0161	<b>01394 6</b>		0.105	1
extension	max 6 W	<b>STD-420 SL</b>	GJ B000 6590 A0166	<b>01421 9</b>		0.135	1

Load and control cables must not be laid in one cable.

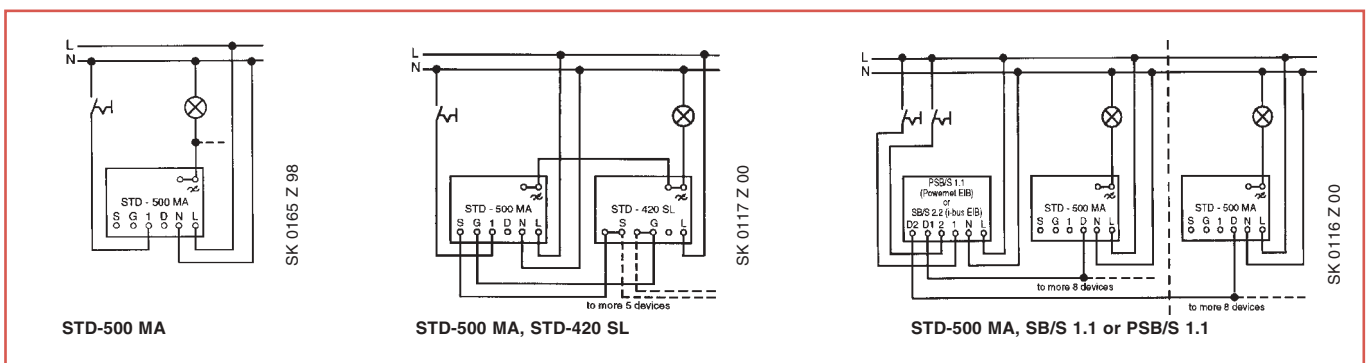
**connected load-  
ambient temperature diagram**



**Technical features**

<b>Rated voltage</b>	230 V ~ ± 10%, 50/60 Hz	
<b>Rated current</b>	MA	2.17 A
	SL	1.83 A
<b>Max. connected load</b>	MA	500 W/VA
	SL	420 W/VA
<b>Power extension</b>	1 MA + max. 6 SL/Phase => max. 3 kVA	
<b>Min. connected</b>	MA	60 W/VA
	SL	200 W/VA
<b>Max. cable length</b>	100 m pushbutton cable, 2 m data line	
<b>Interference suppression</b>	CE	
<b>Ambient temperature</b>	0 to 35 °C, at higher temperatures capacity derating	

Electronic protection against short circuit, overload, excessive temperature, automatic load recognition, soft-OFF function optional, memory function, minimum brightness control, visual overload indication.

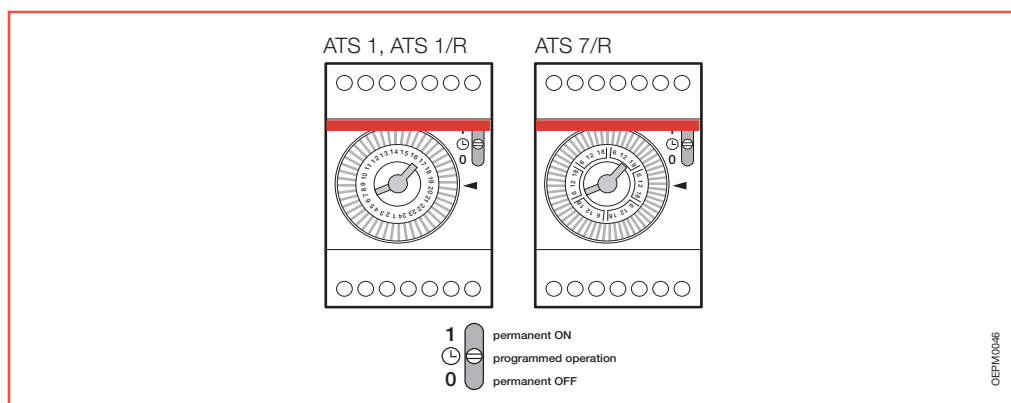




### ATS electro-mechanical time switches

They control circuit opening and closing according to scheduled planning. The time switches can be set on permanent ON-OFF, available both daily and weekly programs. ATS-1R and ATS-7R versions are equipped with a built-in battery that is generally charged by the network voltage that allows the devices to maintain the set time programs in case of long (up to 150h) power supply black-out.

Contacts	Power loss W	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
1 NO synchronous	5 VA	<b>ATS-1M</b>	2CSM111010R0611	<b>62910 8</b>			0.120	1
1 NO quartz	5 VA	<b>ATS-1RM</b>	2CSM111110R0611	<b>62920 7</b>			0.120	1
1 CO synchronous	5 VA	<b>ATS-1</b>	2CSM111030R0611	<b>62930 6</b>			0.150	1
1 CO quartz	5 VA	<b>ATS-1R</b>	2CSM111130R0611	<b>62940 5</b>			0.150	1
1 CO quartz	5 VA	<b>ATS-7R</b>	2CSM121130R0611	<b>62950 4</b>			0.150	1



### Technical features

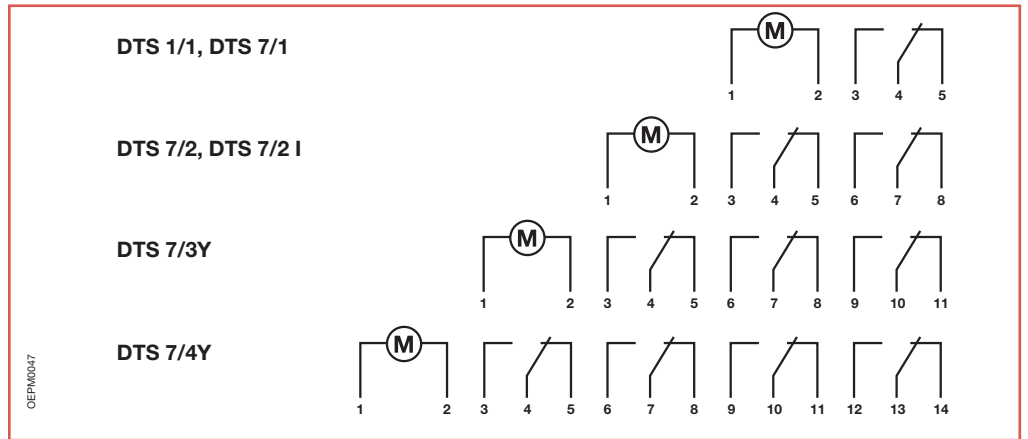
	1 module	3 modules
<b>Rated voltage Un</b>	[V] AC 220 up to 240 for ATS-1M AC 230 DC 130 for ATS-1RM	AC 230 +10%/-15% for ATS-1 AC 230 DC 130 for ATS-1R, ATS-7R
<b>Number of contacts and type</b>	1 NO voltage free	1 change-over voltage free
<b>Rated contact capacity In</b>	[A] 16 cosφ = 1 4 cosφ = 0.6 incandescent lamps: 1000 W	16 cosφ = 1 2.5 cosφ = 0.6 incandescent lamps: 1350 W
<b>Time base</b>	network frequency ATS-1M, ATS-1 (synchronous) quartz for ATS-1RM, ATS-1R, ATS-7R	
<b>Rated frequency</b>	[Hz]	50 for synchronous 50/60 for quartz
<b>Minimum change-over</b>	[min]	30 for daily time switches 180 for weekly time switches
<b>Max number of command per cycle</b>		48/day 56/week
<b>Standby battery</b>	[h] 50	150
<b>Operating accuracy</b>		network frequency (synchronous) 2.5 s/24h (quartz)
<b>Power loss</b>	[VA]	1
<b>Tunnel terminals cable section</b>	[mm <sup>2</sup> ]	1 x 0.5...6 or 2 x 2.5
<b>Operating temperature</b>	[°C]	-25...+55 (synchronous) -20...+55 (quartz)
<b>Storage temperature</b>	[°C]	-30...+70
<b>Modules</b>	1	3
<b>Reference standards</b>	EN 60730-1, EN 60730-2-7, VDE0633	IEC 669-1, CEE 24, EN 60730-1



**DTS digital time switches**

The range includes single/multichannel daily/weekly/yearly program switches. These are functionally more sophisticated and control several loads or independent groups of loads requiring different time controls with a unique time reference. The EEPROM memory of DTS series devices eliminates the risk of erasing configured program, regardless the duration of any voltage failure. Yearly models in 6 DIN modules are endowed with extractable keyboard for an easier setting at the desk.

Contacts complement	Description	Power loss	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
CO		W	Type code	Order code	EAN			kg	pc.
1 12	Daily	5 VA	<b>DTS 1/1</b>	2CSM111000R0601	<b>506607</b>			0.120	1
1 20	Weekly	5 VA	<b>DTS 7/1</b>	2CSM121000R0601	<b>506706</b>			0.120	1
2 30	Weekly	5 VA	<b>DTS 7/2</b>	2CSM122000R0601	<b>506805</b>			0.150	1
2 40	Weekly impulse end cycle programs	5 VA	<b>DTS 7/2I</b>	2CSM122100R0601	<b>506904</b>			0.150	1
2 40	Weekly impulse end cycle programs	5 VA	<b>DTS 7/2I 120AC</b>	2CSM322200R0601	<b>538400</b>			0.150	1
2 40	Weekly impulse end cycle programs	5 VA	<b>DTS 7/2I 24AC/DC</b>	2CSM222200R0601	<b>538301</b>			0.150	1
3 400	Yearly	5 VA	<b>DTS 7/3 Y</b>	2CSM133100R0601	<b>507000</b>			0.380	1
4 400	Yearly	5 VA	<b>DTS 7/4 Y</b>	2CSM134100R0601	<b>538509</b>			0.410	1



### Accessories

Description	Order details		Bbn	Price	Price	Weight	Pack
	Type code	Order code	8012542	1 piece	group	1 piece	unit
			EAN			kg	pc.
signal receiving antenna for DTS 7/4Y	<b>DTS/DCF</b>	2CSM000010R0601	<b>53860 8</b>			0.230	1
interface/software for DTS 7/3Y and DTS 7/4Y	<b>DTS/PRG-SW</b>	2CSM000050R0601	<b>53870 7</b>			0.115	1

### Technical features

	DTS1/1	DTS7/1	DTS7/2	DTS7/2I	DTS7/3	DTS7/4
<b>Type</b>	daily	daily	weekly	weekly	weekly	yearly
<b>Rated voltage Un</b> [V]	AC 230 +10%/-15%					
<b>Change-over channels</b>	1	1	2	2	3	4
<b>Rated contact capacity In</b> [A]	16 cosφ = 1 2.5 cosφ = 0.6 incandescent lamps: 1000 W					
<b>Time base</b>	quartz					
<b>Rated frequency</b> [Hz]	50/60					
<b>Programs ON/OFF</b>	12	20	30	40	400	400
<b>Minimum change-over ON/OFF</b> [min]	1					
<b>Impulse duration</b>	-	-	-	1 s...99 min	1 s...99 min	1 s...99 min
<b>Standby battery</b> [anni]	3	3	3	3	6	6
<b>Operating accuracy</b>	±2.5 s/giorno					
<b>Protection degree</b>	IP20					
<b>Operating temperature</b> [°C]	-25...+55					
<b>Power loss</b> [W]	5					
<b>Modules</b>	2	2	2	2	6	6
<b>Reference standards</b>	IEC/EN 60730-1, VDE0633					

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### E 450 priority switches

The priority switch is used in wiring systems where existing lead cross sections or the size of the power supply service box do not allow for simultaneous operation of two powerful loads (e.g. storage heating and flow-type heater).

The priority switch disconnects the long-term load (storage heating) for as long as the short-term consumer (flow-type heater) is switched on.

The coil of the priority switch is connected in series to the short-term load. When this load is switched on, the NC contact of the priority switch disconnects e.g. the heating system contactor.

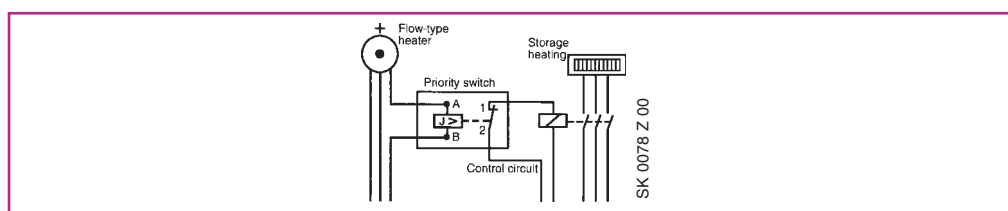
Rated current range	Power loss	Order details	Bbn	Price	Price group	Weight	Pack unit
	W	Type code	Order code	EAN		kg	pc.

#### For pneumatically controlled flow-type heaters

6.7 ... 39 A	2.4	E 451- 5.7 A	2CDE160000R0901	41590 3		0.1	10
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#### For electronically controlled flow-type heaters

6.7 ... 39 A	2.4	E 452-5,7 A	2CDE160010R0901	20950 2		0.1	10
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### Technical features

#### E 451-5.7

#### E 452-5.7

#### Operating coil

Range of rated current equivalent to	6.7 ... 39 A
Threshold current	1.5 ... 9 kW at 230 V, 4.6 ... 27 kW at 230/400 V
OFF delay (max.)	3.1 ... 5.3 A
Max. continuous current	0 main half waves
Therm. continuous capacity at 40 °C/104 °F	2 main half waves
	43 A
	5 W

#### Contact assembly

Control contact	1 NC contact
Rated contact current at 250 V	1 A
Contact material	solid silver
Max. switching voltage	400 V
Max. switching capacity	230 VA
Max. switched current	1 A
Max. inrush current peak	5 A
Electr. service life	> 10 <sup>5</sup> operations
Mechanical service life	ca. 2 x 10 <sup>6</sup> operations
Max. electrical switching rate	ca. 1800 operations/hour
ON duration	100 %
Ambient temperature	- 20 °C/- 4 °F to + 40 °C/104 °F
Response time	10 ... 20 ms
Release time	5 ... 20 ms
Test voltage contact/coil	≥ 20 ms
Clearance and creepage distance	2.5 kV
Degree of protection	C/250 V AC cording to IEC 669-1-23
Protection against electric shock	IP 40
Terminal contact	according to DIN VDE 0106 Part 100 (BGV A2)
	series coil up to 16 mm <sup>2</sup> , control contact up to 2.5 mm <sup>2</sup>



They allow to switch on and/or switch off lighting devices according to the preset ambient light level. They are used in combination with a sensor detecting if ambient light level is higher or lower than the preset threshold. The versions with built-in time switch allow the control of the lighting system in relation to the ambient light level combined with a specific time program. All the TWS twilight switches are supplied together with wall mounting sensor.

**TWS twilight switches with sensor LS-1**

Channels	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code	EAN				
1	<b>TWS-1M</b>	2CSM111100R1341	<b>929000</b>			0.250	1
1	<b>TWS-1</b>	2CSM111200R1341	<b>335009</b>			0.250	1
2	<b>TWS-2</b>	2CSM112200R1341	<b>507109</b>			0.350	1
1	<b>DTS7/1-TWS*</b>	2CSM121300R1351	<b>507208</b>			0.350	1
2	<b>DTS7/2-TWS*</b>	2CSM122300R1351	<b>507307</b>			0.350	1

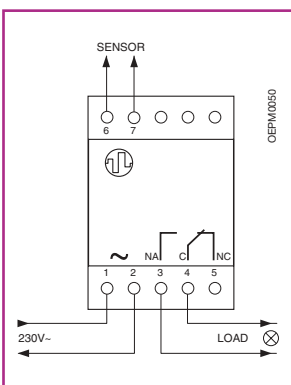
\* With built-in weekly program time switch

**Accessories for TWS**

LS-1 sensor is the same wall mounting sensor which is included in each TWS twilight switch package and it is available as spare part. LS-F sensor can be flush mounted, as an alternative to the wall mounting sensor. LS-F is ideal to prevent vandalic acts.

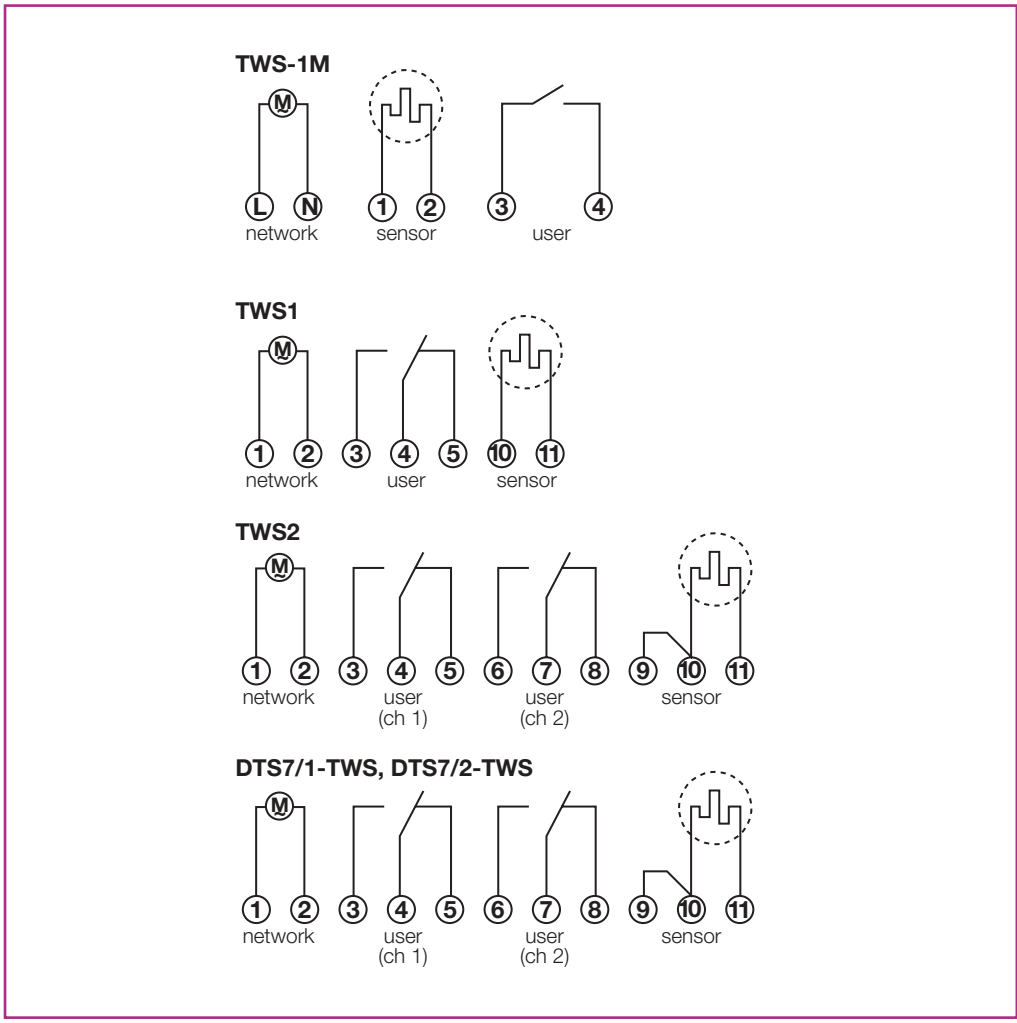
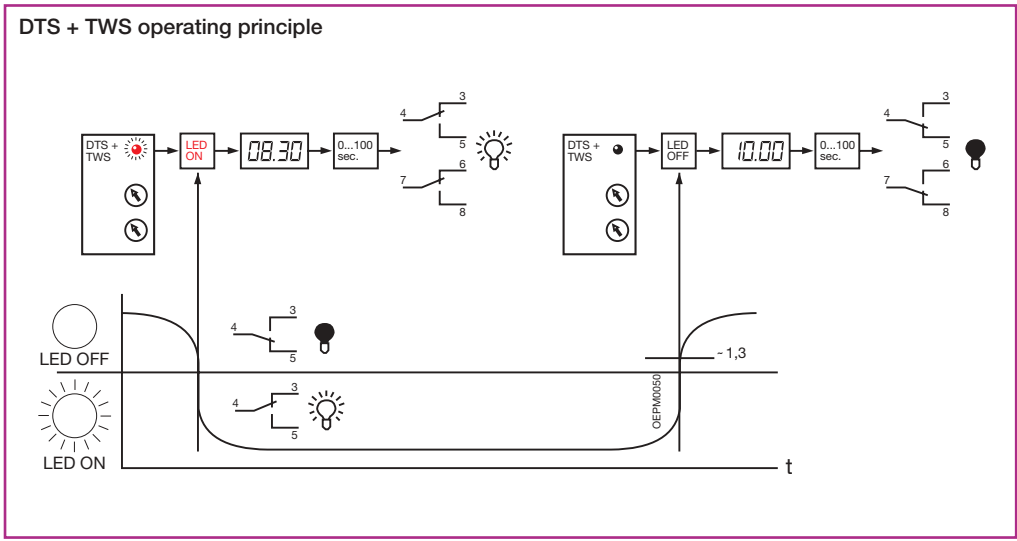
The LS-C accessory allows to extend the adjustment range of the wall mounting sensor up to 10000 lx for daytime applications such as the control of sun curtains and rolling shutters.

Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece kg	Pack unit
Type code	Order code	EAN				pc.
<b>LS-1</b>	2CSM000010R1341	<b>335108</b>			0.050	1
<b>LS-F</b>	2CSM000011R1341	<b>928805</b>			0.050	1
<b>LS-C</b>	2CSM000020R1341	<b>928904</b>			0.050	1



**Technical features**

	TWS-1M	TWS-1	TWS-2	DTS7/1-TWS	DTS7/2-TWS
<b>Rated voltage</b> [V]	230 AC				
<b>Change-over contact capacity</b>					
ohmic load [A]	16				
inductive load cosφ 0.6 [A]	8	2.5	2.5	2.5	2.5
fluorescent lamps [W]	2000	1000	1000	1000	1000
<b>Frequency</b> [Hz]	50/60				
<b>Channels (contact) numbers</b>	1	1	2	1	2
<b>ON/OFF memories</b>	20 30				
<b>Time delay</b> [s]	100 ON/100 OFF (at the first ON: up to 300)				
<b>Hysteresis</b> [%]	±30 respect to the set threshold				
<b>Adjustment range</b> [lx]	2...500	2...300	2...500	2...500	2...500
<b>Operating accuracy</b>	±2.5 s/day				
<b>Protection degree</b>					
twilight	IP20				
sensor	IP65				
<b>Operating temperature</b>					
twilight [°C]	-20...+55				
sensor [°C]	-30...+70				
<b>Power loss</b> [W]	5				
<b>Max. wiring length</b> [m]	100				
<b>Modules</b>	1	2	2	3	3
<b>Reference standards</b>	EN 60730-1, IEC 730-1, CEI 107-70, VDE 0633				







**RAL overload alarms**

Main circuit-breaker downstream installed, they constantly compare preset power consumption value to effective system power consumption, which is related to the number of devices operating simultaneously. An acoustic alarm alerts that it is necessary to switch-off some appliances in order to avoid the tripping of the main circuit-breaker. The device calibration is 3 kW.

Adjustable range	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
kW	Type code	Order code	EAN			kg	pc.
0/3	<b>RAL 3</b>	2CSM111200R1301	<b>400509</b>			0.200	1
0/6	<b>RAL 6</b>	2CSM121200R1301	<b>400608</b>			0.200	1

**Technical features**

<b>Rated voltage <math>U_n</math></b>	[V]	a.c. 230
<b>Rated current <math>I_n</math></b>	[A]	18.3 (for 3 kW); 27.5 (for 6 kW)
<b>Rated contact capacity <math>I_n</math></b>	[A]	12 $\cos\phi=1$ ; 4 $\cos\phi=0.8$
<b>Rated frequency</b>	[Hz]	50
<b>Adjustment ranges</b>	[A]	0 ... 18.3/0...27.5
<b>Power consumption</b>	[W]	10
<b>Modules</b>	[n°]	2
<b>Intervention delay</b>		instantaneous

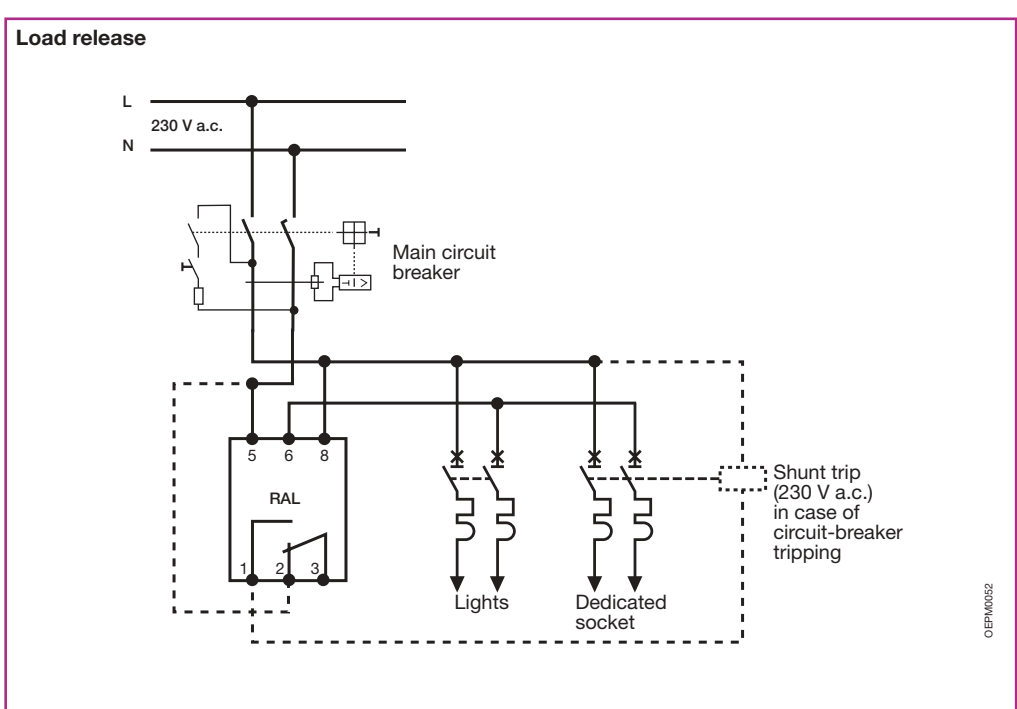
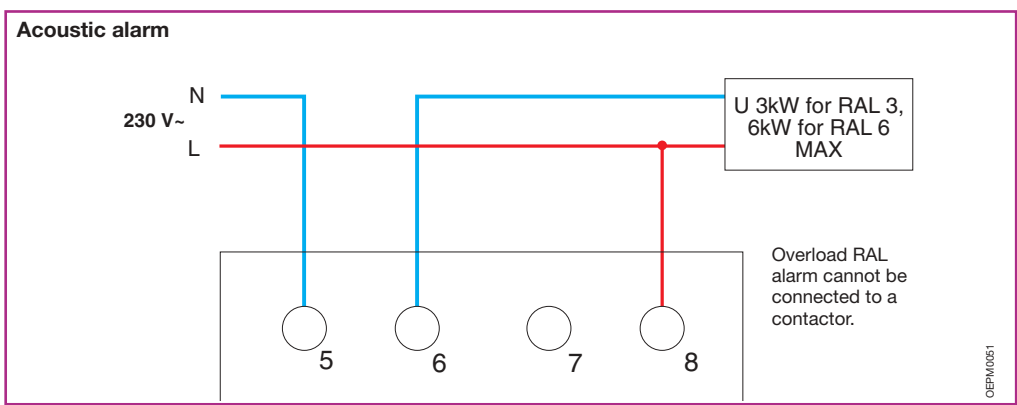
**Additional technical features**

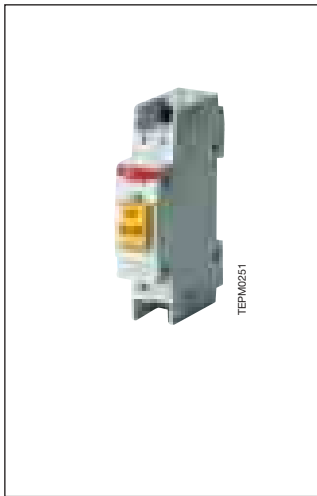
RAL overload alarms are equipped with an acoustic alarm which signals an exceeding power consumption, allowing the user to disinsert loads before the energy-limiting circuit-breaker trips.

An appropriate relay output contact allows the choice between the following functions:

- a) remote signalling (acoustic or lighting)
- b) opening a specific divisional circuit-breaker and then disabling a particular not primary electric appliance.

If appropriately used, the function b) causes the automatic switchoff of one or more appliances in order to keep the power consumption within the preset limits, avoiding the unexpected tripping of current-limiting device installed outside the housing (i.e. in the basement). Reset manually.



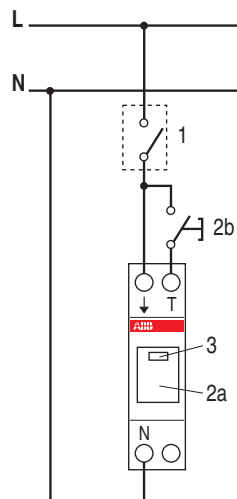


**E 228 WM alarm indicator**

It can report an alarm signalling switched on by the closing of any kind of external contact (fault, warning device, etc.) through an acoustic and lighting alarm.

Order details		Bbn	Price	Price	Weight	Pack
Type code	Order code	4012223	1 piece	group	1 piece	unit
E 228-WM	2CDE100021R1401	EAN			kg	pc.
		630301			0.070	1

**Wiring diagram**

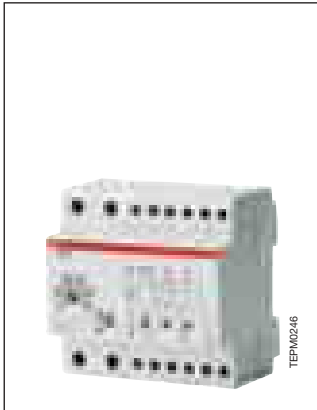


**Operation**

- 1**  
External contact NO (monitored) has changed the initial position:
  - LED 3 switches on (blinking)
  - Acoustic alarm on
- 2a and 2b**  
Acoustic alarm disabled on the product (2a) or remotely (2b):
  - LED 3 light is fixed up to system reset
- 3**  
Alarm indicator LED

**Technical features**

Rated voltage $U_n$	[V]	230 AC
Rated frequency	[Hz]	50
Power consumption	[W]	<4
Modules		1
Cycle time		on/off 1 sec ±10%
Sound level		60 dB
Ambient temperature		-20 °C up to +50 °C

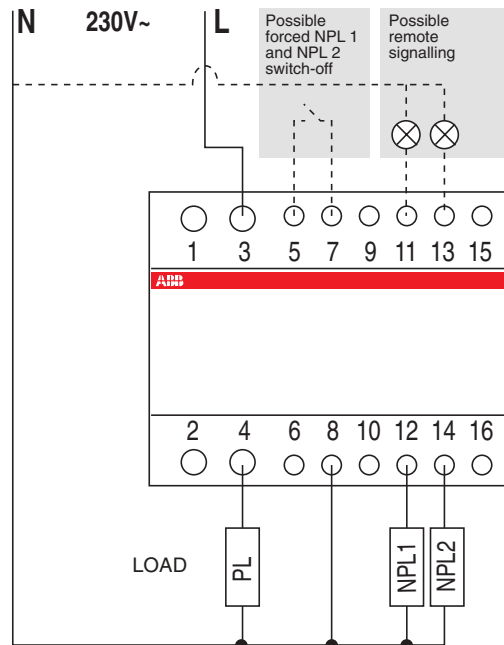


### LSS1/2 load shedding switches

Main circuit-breaker downstream installed, they compare the higher allowed and preset value of power consumption to the effective system power consumption avoiding the tripping of the main circuit-breaker through switching-off in sequence of maximum two not primary loads (NPL1 and NPL2) when the preset threshold is exceeded. A green LED signals the voltage and two red leds indicate load OFF. At preset time intervals the device automatically tries to insert again not primary disabled loads.

Order details		Bbn	Price	Price	Weight	Pack
Type code	Order code	8012542	1 piece	group	1 piece	unit
		EAN			kg	pc.
LSS1/2	2CSM112500R1311	274407			0.400	1

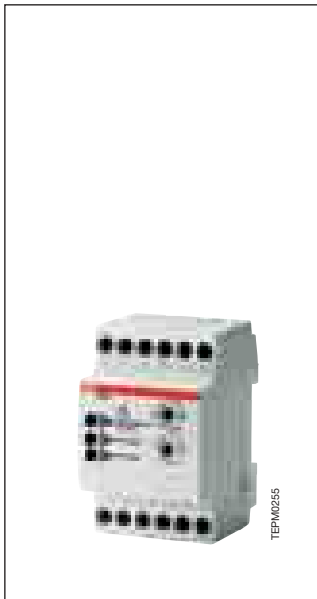
Single-phase wiring diagram



- The device must be main circuit breaker downstream inserted into the network
- PL = Primary Load
- NPL = Not Primary Load

### Technical features

Rated voltage $U_n$	[V]	a.c. 230
Rated capacity $I_n$	[A]	90
Rated contact capacity $I_n$ NPL1 and NPL2	[A]	16 each (terminals 12 and 14)
Rated frequency	[Hz]	50/60
Regulating thresholds	[A]	5...30 10...60 15...90
Load reinsertion delay		5-7 min. (NPL1); 4-5, 50 min. (NPL2)
Load disinsertion delay		about 2 sec.
Indicators		1 green LED= supply voltage available 2 red LED= switched off loads
Load OFF remote signalling	[A]	1 (terminals 11 and 13)
Terminals	Primary load	35 mm <sup>2</sup>
	Not primary loads	10 mm <sup>2</sup>
Power consumption	[W]	5
Modules	[n°]	5



### SQZ3 phase and sequence relays

SQZ3 relay performs the following continue monitoring functions on three-phase networks at 400 V a.c.:

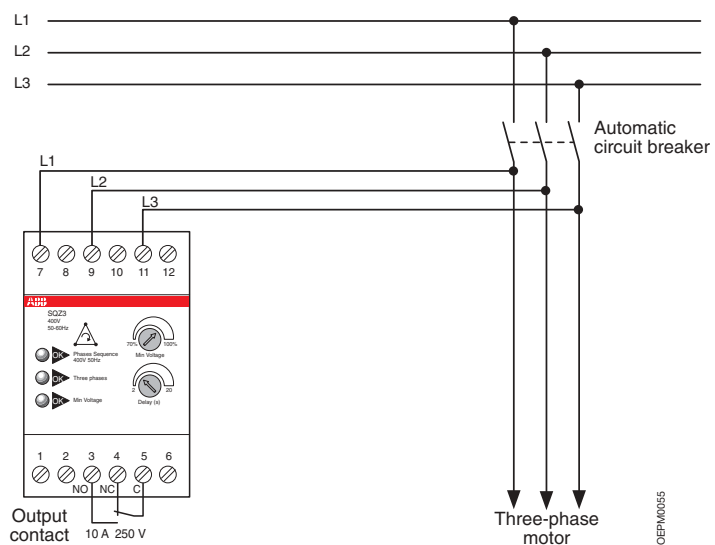
- phase sequence
- phase failure
- minimum voltage (adjustable up to 70% of  $V_n$ ).

If one of the three failures is detected, the output relay (safety switching contact) intervenes with a delay adjustable from 2 to 20 seconds for minimum voltage only and controls the following:

- acoustic alarms
- motor controlling contactors
- circuit-breakers with coils.

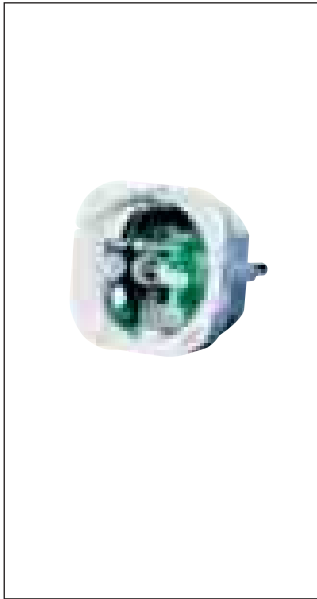
Order details	Bbn	Price	Price group	Weight	Pack unit
<b>8012542</b>	1 piece			1 piece	
Type code	Order code	EAN		kg	pc.
<b>SQZ3</b>	2CSM111310R1331	<b>372004</b>		0.300	1

### Wiring diagram



### Technical features

Supply voltage	[Vn]	400 V a.c.
Frequency	[Hz]	50/60
Contact capacity	[A]	10 (cosφ=1)
Contact type		safety switching, changeover
Minimum voltage regulating trimmer	[%]	from 100 to 70 of $V_n$
Intervention delayregulating trimmer	[s]	from 2 to 20 (only for min. voltage)
Insulation rating		II
Protection degree	[IP]	20
Operating temperature	[°C]	-10...+55
Power consumption	[W]	10
Modules	[n°]	3



### LEE 230 power failure signalling extractable lamp

The LEE 230 lamp is an automatic electronic lamp to be installed in any modular socket or wiring accessories socket with German standard VDE Schuko (M1173 or E1175) and Italian standard P11, 10 A or dual standard 10/16 A.

The device can operate as a power failure signalling lamp as well as a lighting device, to be used for example during maintenance activities or for looking for possible faults in the panel.

Pack	Order details		Bbn	Price	Price	Weight	Pack
	Type code	Order code	8012542	1 piece	group	1 piece	unit
			EAN			kg	pc.
Box	LEE-230	2CSM110000R1361	844105			0.100	1/6
Blister	LEE-230	2CSM111000R1361	507406			0.100	1

### Technical features

2P 10 A plug		distance between pins 19 mm, pin ø 4 mm
Supply	[V]	230 a.c., 50-60 Hz
Recharge time	[h]	24
Endurance	[h]	3
Lighting level	[mcd]	3000
Operating temperature	[°C]	0...+45
Min. life cycle		5 years (battery)

### Additional technical features

The LEE-230 lamp automatically switches on when the voltage fails; the built-in rechargeable battery guarantees the supply.

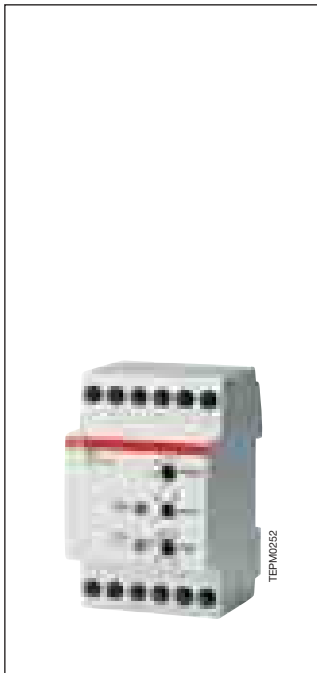
It is particularly useful thanks to its construction and functional characteristics:

- it can be extracted from the socket and used as a torch with ON-OFF button on its frontal side
- when necessary it can work with standard sockets
- it can be moved when it is needed
- it has a long operation endurance, up to three hours
- it is ready to use, it does not require installation
- with a screw (ø 3.5 mm, L 16 mm) it is possible to fix it preventing the extraction from the M1173 ABB sockets with central hole
- the projecting part of the Schuko profile is very small (8 mm).

The two LEDs placed on the frontal side of the lamp indicate its operation condition:

- the red LED indicates the recharge activity and that, in the case of a network voltage back-out, the lamp will remain off
- the green LED indicates the recharge activity and that, in the case of a network voltage black-out, the lamp will switch on (it will automatically switch off when the voltage returns).

By pushing the frontal pushbutton it is possible to change the status; if you do not use the lamp for a prolonged time it is suggested to set the first condition in order to preserve the battery life.



**Max./min. current/voltage ammetric and voltmetric relays**

These devices are used to measure current (ammetric) and voltage (voltmetric) on single-phase electric networks for a perfect protection of devices used.

The range includes:

- **maximum current (RHI) and maximum voltage (RHV) relay.** The control relay remains on as long as the quantity to be measured is lower than the set threshold value;
- **minimum current (RLI) and minimum voltage (RLV) relay.** The control relay remains on as long as the quantity to be measured is higher than the set threshold value.

In both cases the relay switches off with a delay adjustable by the potentiometer, which also allows to adjust hysteresis (from 1 to 45%).

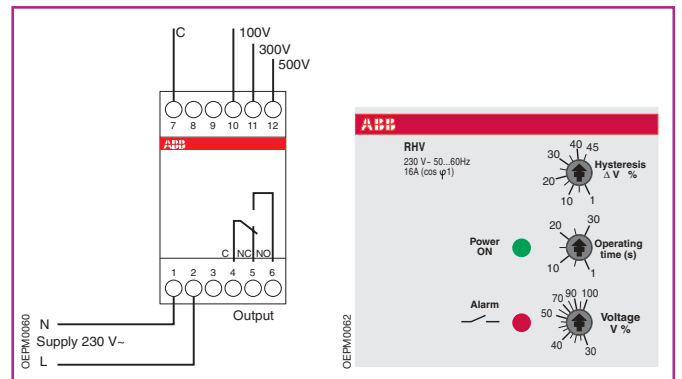
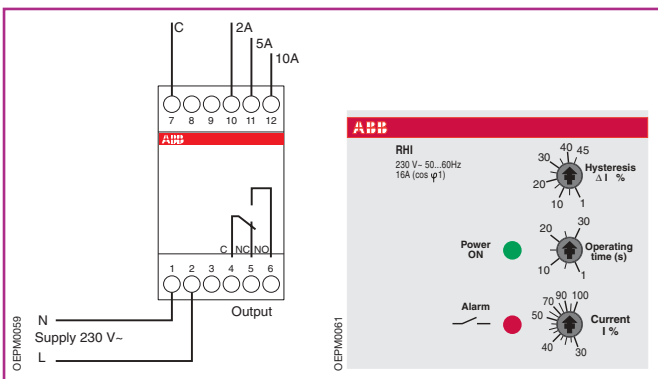
Type	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	Price	Price group	Weight 1 piece	Pack unit
			1 piece		kg	pc.
maximum current ammetric relay	<b>RHI</b>	2CSM121310R1321	<b>334309</b>		0.300	1
maximum voltage voltmetric relay	<b>RHV</b>	2CSM111310R1321	<b>334101</b>		0.300	1
minimum current ammetric relay	<b>RLI</b>	2CSM122310R1321	<b>334200</b>		0.300	1
minimum voltage voltmetric relay	<b>RLV</b>	2CSM112310R1321	<b>334002</b>		0.300	1

**Technical features**

<b>Rated voltage <math>U_n</math></b>	[V]	a.c. 230
<b>Switching contact capacity</b>	[A]	16
<b>Rated frequency</b>	[Hz]	50/60
<b>Ammetric relay alarm thresholds</b>	[A]	2, 5, 10
<b>Voltmetric relay alarm thresholds</b>	[V]	100, 300, 500
<b>Adj. calibration of <math>I_n</math> and <math>V_n\%</math></b>	[%]	30...100
<b>Adjustable hysteresis value</b>	[%]	1...45
<b>Time delay</b>	[s]	1...30
<b>Power consumption</b>	[W]	2
<b>Modules</b>	[n°]	3

**Additional technical features**

<b>Control relay intervention lighting indication</b>	red LED on=intervening
<b>Power supply lighting indication</b>	green LED on=ON
<b>Intervention lighting indication</b>	blinking green LED=intervening





### E 235 mains disconnection relays - Bioswitch

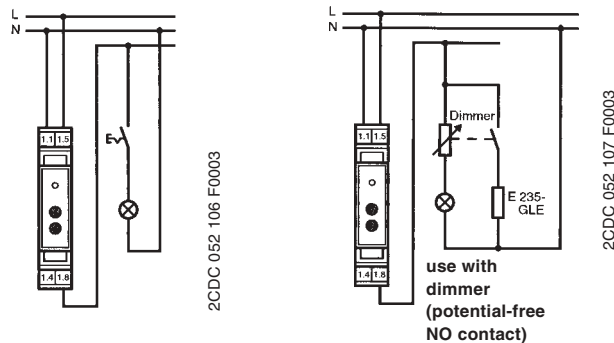
Constant exposure of electrical interference fields originating from live conductors - as is the case e.g. in bedrooms - may impair the well-being of people, experts say.

With the extra base load adapter E235-GLA, the mains disconnection relays can be switched on manually.

For the permanent installation of loads that switch on independently of the supply voltage, such as fluorescent lamps, a E235-GLE PTC base load element is available.

Description	Order details		Bbn	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN				
mains disconnection relay	<b>E 235-NFS</b>	2CDE110000R1701	<b>571821</b>			0.065	1
base load element	<b>E 235-GLE</b>	2CDE100500R1711	<b>571814</b>			0.001	1
base load adapter	<b>E 235-GLA</b>	2CDE100510R1711	<b>571869</b>			0.070	1

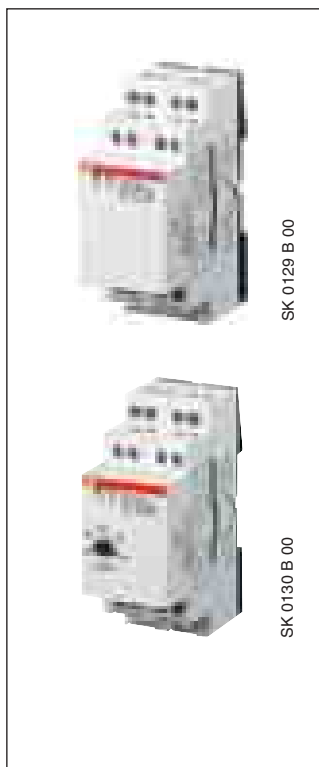
#### Wiring diagram



#### Technical features

Short circuit rupturing capacity	16 A/230 V a.c.
Rated frequency	50/60 Hz
Range of control voltage	0.9 to 1.1 Un
Load of filament lamps	2300 W
Fluorescent lamp load:	
twin lamp circuit	100 W
shunt compensated	56 W
electronic ballast	max. 36 W, dependent on manufacturer
Induce load	6 A $\cos\phi = 0.6$
Max. switching capacity ( $\cos\phi 0.5$ )	3500 VA
Intrinsic consumption ca. 1 W	
Control voltage	5 V a.c.
Adjustable making capacity	2 - 15 VA
Breaking capacity	0.66 x making capacity
ON delay	50 ms
OFF delay	ca. 3 sec.
Contact assembly	1 NO contact
Service life at rated load	> 100000 switching cycles
Ambient temperature	- 10 °C/14 °F to +45 °C/113 °F
Connection capacity (clamping terminal)	max 2.5 mm <sup>2</sup>





## E 236 undervoltage monitoring relays

### Function

The green LED is lit when the supply voltage is applied. If each phase voltage exceeds 195 V (US1) or exceeds the preset threshold value (US2) with respect to the neutral including the hysteresis when switching the device on, the relay switches immediately into the working position. The yellow LED is lit. If at least one phase voltage falls below the threshold value, the relay goes back into its normal position and the yellow LED goes out.

If also phase 2 fails, the green LED goes out, too.

It is indispensable to connect the neutral conductor!

### Application

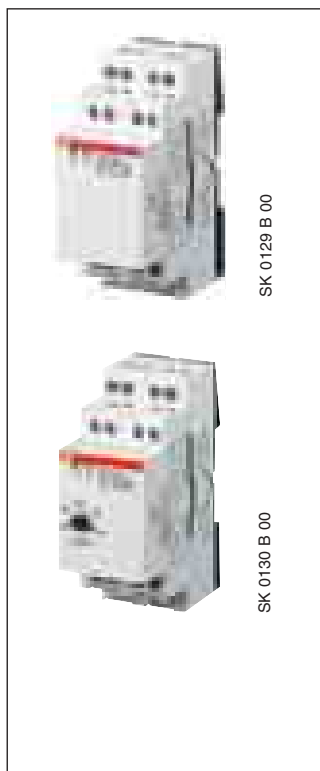
For the control of three-phase undervoltage (each phase to neutral) of switchgear, also for installations according to DIN VDE 0107 (power installations in hospitals and rooms used for medical purposes outside of hospitals) and DIN VDE 0108 (power installations and safety supply in buildings where many people gather).

US 1: 3 phases to neutral with fixed threshold at 195V; hysteresis fixed 5 %

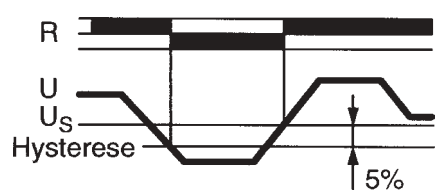
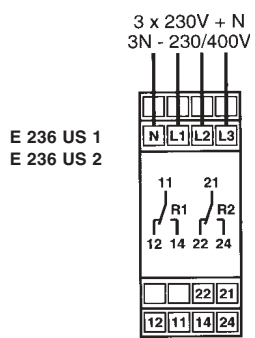
US 2: 3 phases to neutral with fixed threshold at 160 – 240V; hysteresis fixed 5 %

## Technical features

<b>Rated voltage</b>	250 V a.c.
<b>Frequency</b>	48-63 Hz
<b>Measuring range:</b>	supply voltage 3N 400/230 V a.c. (terminals N-L1-L2-L3)
	overload capacity 3N 459/265 V a.c.
<b>Switching capacity</b>	device in series (distance < 5 mm): 750 VA (3 A/250 V a.c.); device not in series (distance > 5 mm): 1250 VA (5 A/250 V a.c.)
<b>Rated insulation voltage</b>	250 V a.c. (corresponds with IEC 664-1)
<b>Rated surge voltage</b>	4 kV
<b>Tripping delay</b>	ca. 100 ms
<b>Creepage and clearance distance</b>	> 6 mm (between contact and electronics)
<b>Mechanical service life</b>	20 x 10 <sup>6</sup> operations
<b>Electrical service life at 10000VA</b>	2 x 10 <sup>5</sup> operations
<b>Max. switching rate</b>	max. 6/min (1000 VA Ohmic load); max. 60/min (100 VA Ohmic load)
<b>Ambient temperature</b>	-25 °C/-13 °F to +55 °C/131 °F
<b>Overvoltage category</b>	III
<b>Accuracy in non-changing environment:</b>	
	setting tolerance (US 2) ≤5 %
	repeat accuracy ±1 %
	temperature effect ≤0.1 %/°C
<b>Terminals</b>	up to 4 mm <sup>2</sup>
<b>Specifications</b>	VDE 0110 and VDE 0435
<b>EMC tests</b>	EM 50081-1 and EN 50082-2
<b>Displays</b>	LED green= supply voltage applied; LED yellow= relay status
<b>Power loss</b>	1.7 W



Contact	Order details		Bbn 4016779	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code	EAN				
2CO	E 236-US 1	2CDE165000R2001	511087			0.095	5
2CO	E 236-US 2	2CDE165010R2001	511094			0.095	5



SK 0149 Z 00

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The range provided includes analogue and digital instruments. In addition to standard measurement devices for electric quantities (voltmeters, ammeters, wattmeters, varmeters, frequency meters, power factor meters), other special instruments (RPM meters, hour meters) and a set of accessories are available, including ammetric transformers, which increase the functions of these instruments.

### Analogue instruments for alternated current

Suitable for direct or indirect measurement through the appropriate accessories.

Scale	Order details	Bbn	Price	Price	Weight	Pack
	Type code	8012542	1 piece	group	1 piece	unit
		EAN			kg	pc.

#### Direct voltmeters

300 V	VLM1/300	2CSM110190R1001	007906		0.200	1
500 V	VLM1/500	2CSM110220R1001	000006		0.200	1

#### Direct ammeters

5 A	AMT1/5	2CSM310030R1001	000709		0.200	1
10 A	AMT1/10	2CSM310040R1001	000105		0.200	1
15 A	AMT1/15	2CSM310050R1001	000204		0.200	1
20 A	AMT1/20	2CSM310060R1001	000303		0.200	1
25 A	AMT1/25	2CSM310070R1001	000402		0.200	1
30 A	AMT1/30	2CSM310080R1001	000501		0.200	1

#### Ammeters without scale for C.T. (sec. 5 A)

For scale (SCL1)	Order details	Bbn	Price	Price	Weight	Pack
	Type code	8012542	1 piece	group	1 piece	unit
		EAN			kg	pc.
A1	AMT1/A1	2CSM320250R1001	000600		0.200	1
A5	AMT1/A5	2CSM320260R1001	000808		0.200	1

#### 100/280V 45-65 Hz frequency meter with scale

Order details	Bbn	Price	Price	Weight	Pack
Type code	8012542	1 piece	group	1 piece	unit
	EAN			kg	pc.
FRZ1	2CSM810310R1001	008606		0.200	1

#### Power factor meter with scale for transducer (1 mA input)

Order details	Bbn	Price	Price	Weight	Pack
Type code	8012542	1 piece	group	1 piece	unit
	EAN			kg	pc.
CSF1	2CSM720310R1001	028000		0.300	1

### Technical features

<b>Rated voltage Un</b>	[V]	a.c. 300, 500; d.c. 100, 300
<b>Rated currents in a.c.</b>	Direct reading [A] Indirect reading	full scale values 5...30 full scale values 5...2500
<b>Rated currents in d.c.</b>	Direct reading [A] Indirect reading	full scale values 0.1...30 full scale values 5...500
<b>Frequency</b>	[Hz]	50/60
<b>Overload capacity</b>	[%]	20 compared to the voltage or to the rated current
<b>Accuracy class</b>	[%]	1.5 (0.5 for frequency meters)
<b>Power consumption</b>	[W]	see technical details
<b>Modules</b>	[n°]	3
<b>Standards</b>		EN 60051

**Analogue instruments for direct current**

Scale	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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**Direct voltmeters**

100 V	<b>VLM2/100</b>	2CSM210130R1001	<b>008002</b>			0.200	1
200 V	<b>VLM2/300</b>	2CSM210190R1001	<b>008101</b>			0.200	1

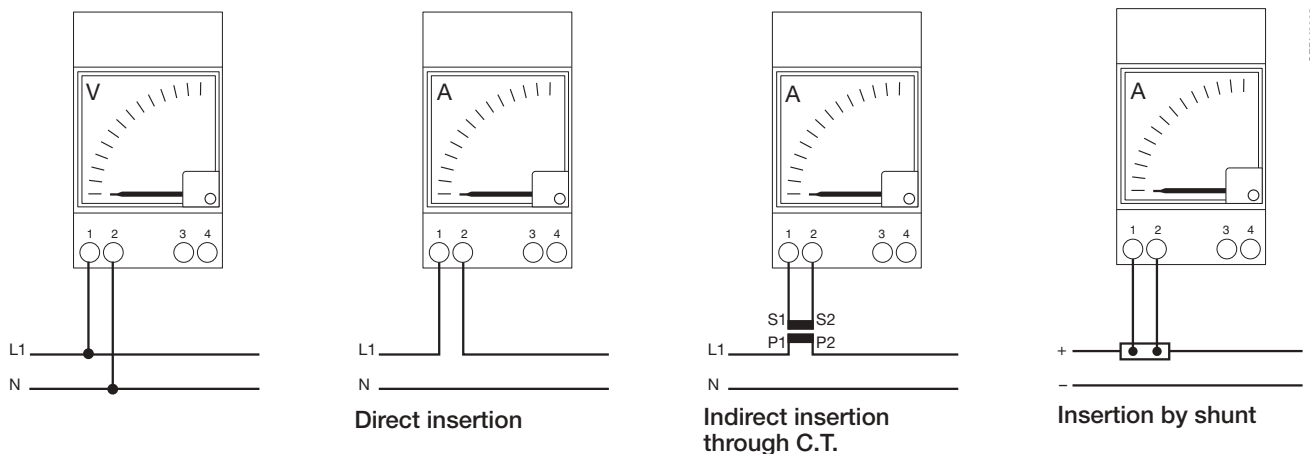
**Direct ammeters**

10 mA	<b>AMT2/0.01</b>	2CSM410330R1001	<b>028307</b>			0.200	1
100 mA	<b>AMT2/0.1</b>	2CSM410340R1001	<b>028406</b>			0.200	1
1000 mA	<b>AMT2/1</b>	2CSM410020R1001	<b>028505</b>			0.200	1
5 A	<b>AMT2/5</b>	2CSM410030R1001	<b>028604</b>			0.200	1
10 A	<b>AMT2/10</b>	2CSM410040R1001	<b>028703</b>			0.200	1
15 A	<b>AMT2/15</b>	2CSM410050R1001	<b>028802</b>			0.200	1
20 A	<b>AMT2/20</b>	2CSM410060R1001	<b>028901</b>			0.200	1
25 A	<b>AMT2/25</b>	2CSM410070R1001	<b>029007</b>			0.200	1
30 A	<b>AMT2/30</b>	2CSM410080R1001	<b>029106</b>			0.200	1

**Ammeters without (SCL2) scale for shunt.../60 mV**

Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
<b>AMT2</b>	2CSM420270R1001	<b>029205</b>			0.200	1

**Wiring diagrams**



OEPM0065

Suitable for direct or indirect measurement using appropriate accessories.

Measurements are displayed through 3-digit digital indicator with out-of-scale signalling.

As electronic instruments do not have parts subject to friction wear, they have a longer operation life and high accuracy.

### Measuring instruments with digital display, class 0.5

Effective range	Power loss	Order details	Bbn	Price	Price group	Weight	Pack
0...	W	Type code	8012542	1 piece		1 piece	unit
		Order code	EAN			kg	pc.

#### Measuring instruments for alternating or direct voltage (direct measurement)

600 V AC/DC	2.0	VLMD-1-2	2CSM110000R1011	62040 2		0.300	1
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#### Measuring instruments for alternating voltage with setting button for different effective ranges (transformer measurement 5A)

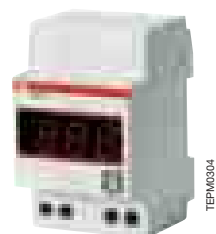
15-20-25-40-60 99.9-150-200 250-400-600-999 A	2.0	AMTD-1	2CSM320000R1011	62050 1		0.300	1
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#### Measuring instruments for alternating voltage with setting button for different effective ranges (transformer measurement 5A)

15-20-25-40-60 99.9-150-200 250-400-600-999 A	2.0	AMTD-2	2CSM420000R1011	62060 0		0.300	1
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#### Measuring instruments for frequencies (direct measurement)

40 ... 80 Hz	2.0	FRZ-DIG	2CSM710000R1011	62070 9		0.300	1
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TEPM0304

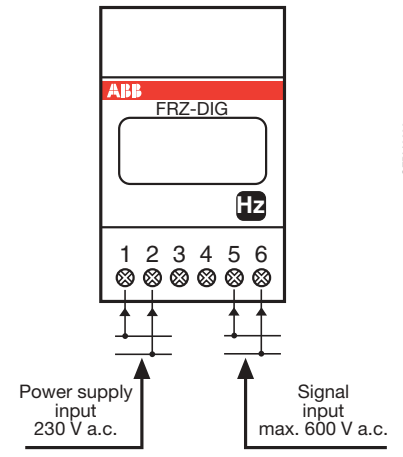
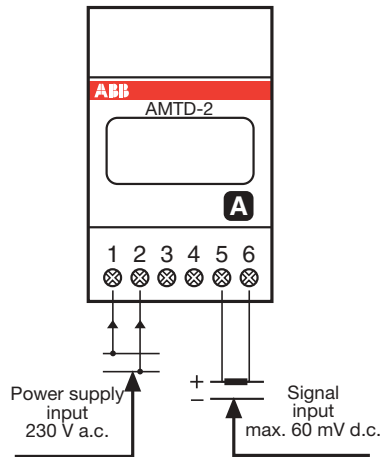
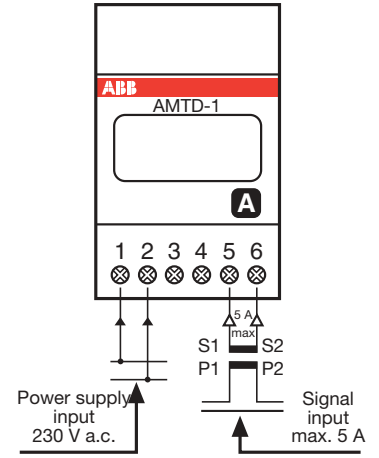
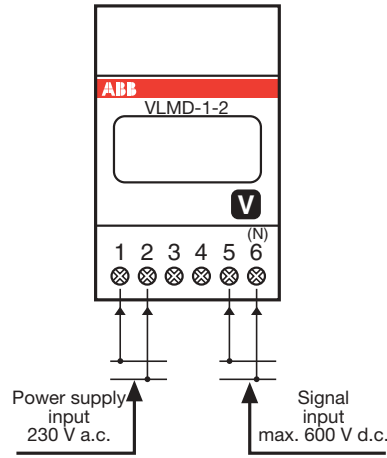


TEPM0305

### Technical features

Rated voltage	[V]	a.c. 230
Rated frequency	[Hz]	50+400
Overload capacity	[In/Vn]	1.2
Accuracy rating	[%]	±0.5 full scale ±1 digit at 25 °C
Max. signal input value		5 A a.c./60 mV d.c.
Measurement field		VLM-D1 VLM-D2 0...999 A AMTD1 ATD2 0...999 A FRZ-DIG 40...80 Hz (0.5% rating)
Selection of capacity		continuous through menu pushbuttons
View		3-digit display+LED for out-of scale signalling
Operating temperature	[°C]	-10...+55
Storage temperature	[°C]	-40...+70
Protection degree	[IP]	20
Power consumption	[VA]	<2
Modules	[n°]	3
Standards		CEI EN 61010

Wiring diagrams



06PM0086

**Full scale calibration**

Press the set up pushbutton for 3 seconds until the display blinks, then press repeatedly the pushbutton until viewing the desired full scale (3 lines=5 A full scale). Then press again the pushbutton for 3 seconds for saving the selected setting.

## MTM multimeters

These instruments allow the measurement of the main electric quantities in three-phase networks at 230/400 V a.c., grouping in a single instrument the functions of voltmeters, ammeters, power factor meters, wattmeters, varmeters, frequency meters, and thermometers. The MTME multimeter detects also active and reactive energy. Being more practical than that of multiple different instruments, the use of these instruments is less difficult referring to the managing of dimensions and to the wiring, and more convenient.

The 30 measurable quantities are viewed by the four red LED displays, which guarantee the simultaneous reading of multiple values along with a good legibility.

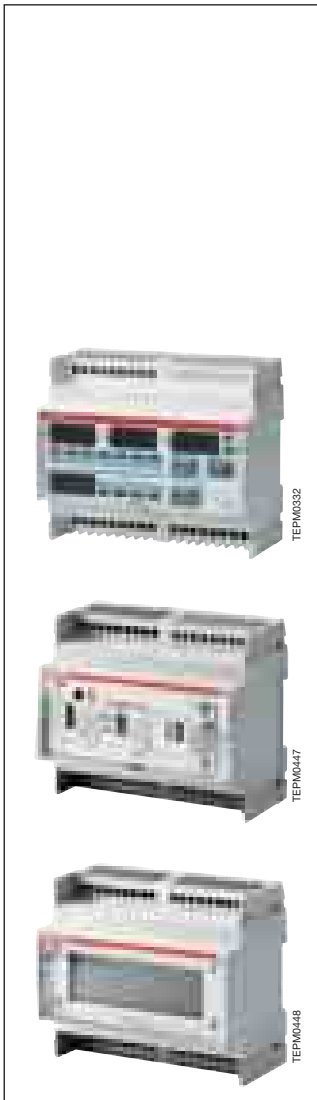
In addition to instantaneous measured quantities (in effective value), it is possible for some of them to view the average and the maximum peak as well.

## MTM modular multimeters

Type	Order details		Bbn	Price	Price	Weight	Pack
	Type code	Order code	8012542	1 piece	group	1 piece	unit
			EAN			kg	pc.
for measurement at 230/400 VAC	<b>MTM</b>	2CSM120020R1021	<b>371908</b>			0.450	1
for measurement at 230/400 VAC + active and reactive energy	<b>MTME</b>	2CSM130030R1021	<b>333401</b>			0.450	1
for measurement at 230/400 VAC + active and reactive energy + pulse output	<b>MTME-I</b>	2CSM140030R1021	<b>333500</b>			0.450	1
for measurement at 230/400 VAC + active and reactive energy + output 485 + relay output	<b>MTME-485</b>	2CSM160030R1021	<b>333609</b>			0.450	1

## Accessories for MTM modular multimeters (6 modules)

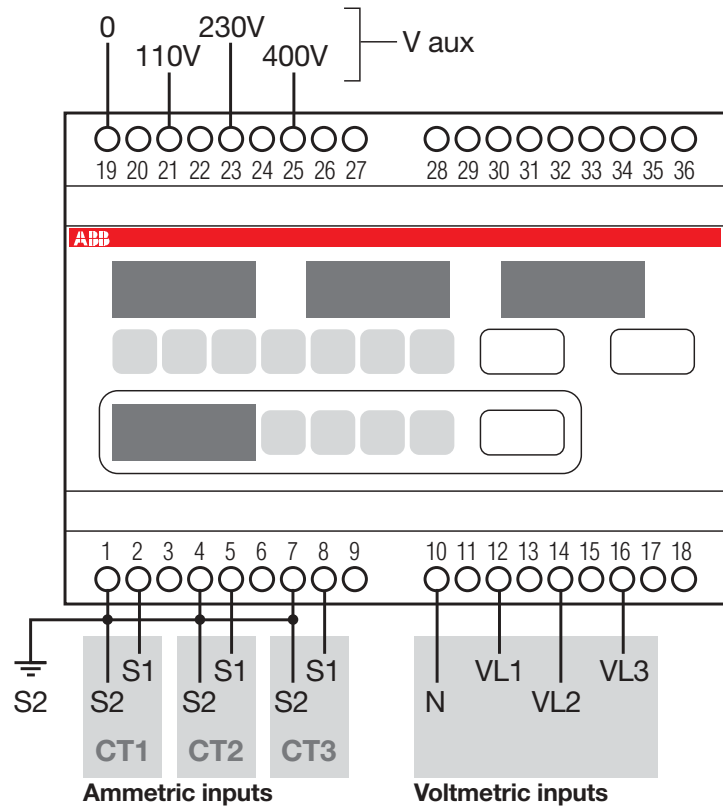
impulse concentrator for MTME-I	<b>CDI</b>	2CSM100000R1031	<b>333708</b>			0.050	1
converter RS485-232	<b>CUS</b>	2CSM200000R1031	<b>333807</b>			0.050	1
management software for MTME-I and MTME-485	<b>SW01</b>	2CSM300000R1031	<b>333906</b>			0.050	1



## Technical features

<b>Auxiliary rated voltage</b>	[V]	a.c. 110, 230, 400
<b>Rated frequency</b>	[Hz]	50/60
<b>Rated input voltages</b>	[V]	from 20 to 500
<b>Permanent overload</b>	[%]	+20
<b>Rated input currents</b>	[A]	5
<b>Permanent overload</b>	[%]	+30
<b>Current values programmable for C.T.</b>	[A]	from 0.02 to 10000
<b>Insulation voltage</b>	[kV]	2.5
<b>Resistance to humidity</b>	[%]	90
<b>Protection degree</b>		IP20
<b>View</b>		3-digit display
<b>Operating temperature</b>	[°C]	-10...+60
<b>Storage temperature</b>	[°C]	-25...+80
<b>Maximum/minimum section of connection</b>	[mm <sup>2</sup> ]	0.5-2.5
<b>Weight</b>	[kg]	0.4
<b>Modules</b>	[n°]	6
<b>Power consumption</b>	[W]	<3
<b>Standards</b>		CEI-EN 61010-1







### MCV - MCA voltmetric and ammetric switches

Cam rotary switches are suitable for mounting on EN 50022 rail. In three-phase systems they enable the use of a single measurement instrument (single-phase) for viewing the current or voltage value set through the switch itself.

Range	Power loss W	Order details Type code	Order code	Bbn 4034656 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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#### Voltmeter changeover switches

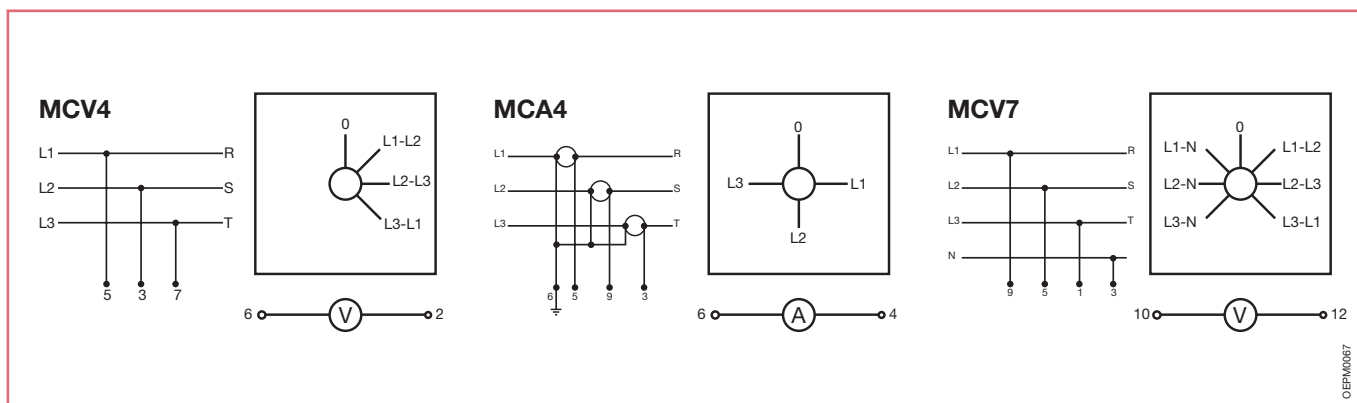
L1, L2, L3	0.5	<b>MCV 4</b>	1SCA 022 404 R4740	<b>52249 6</b>			0.095	1
L1, L2, L3, N	0.5	<b>MCV 7</b>	1SCA 022 647 R7840	<b>52243 8</b>			0.110	1

#### Ammeter changeover switches

0-1-2-3	0.5	<b>MCA 4</b>	1SCA 022 404 R4820	<b>52245 2</b>			0.110	1
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### Technical features

Insulation voltage	[V]	600
Rated thermal current	[A]	12
Mechanic operations	[n°]	1000000
Power consumption	[W]	0.23
Modules	[n°]	3



**Interchangeable scales for analogue instruments**

Scale	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN			kg	pc.

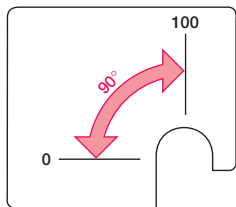
**Interchangeable scales for analogue ammeters in a.c. AMT1**

A1-5A	<b>SCL 1/5</b>	2CSM110021R1041	<b>001201</b>			0.010	10
A1-10A	<b>SCL 1/10</b>	2CSM110032R1041	<b>001300</b>			0.010	10
A1-20A	<b>SCL 1/20</b>	2CSM110075R1041	<b>001409</b>			0.010	10
A1-25A	<b>SCL 1/25</b>	2CSM110096R1041	<b>030706</b>			0.010	10
A1-30A	<b>SCL 1/30</b>	2CSM110107R1041	<b>001508</b>			0.010	10
A1-40A	<b>SCL 1/40</b>	2CSM110128R1041	<b>030805</b>			0.010	10
A1-50A	<b>SCL 1/50</b>	2CSM110149R1041	<b>001607</b>			0.010	10
A1-60A	<b>SCL 1/60</b>	2CSM110159R1041	<b>030904</b>			0.010	10
A1-75A	<b>SCL 1/75</b>	2CSM110169R1041	<b>031000</b>			0.010	10
A1-80A	<b>SCL 1/80</b>	2CSM110179R1041	<b>001706</b>			0.010	10
A1-100A	<b>SCL 1/100</b>	2CSM110189R1041	<b>001805</b>			0.010	10
A1-150A	<b>SCL 1/150</b>	2CSM110209R1041	<b>001904</b>			0.010	10
A1-200A	<b>SCL 1/200</b>	2CSM110229R1041	<b>002000</b>			0.010	10
A1-250A	<b>SCL 1/250</b>	2CSM110249R1041	<b>031109</b>			0.010	10
A1-300A	<b>SCL 1/300</b>	2CSM110259R1041	<b>002109</b>			0.010	10
A1-400A	<b>SCL 1/400</b>	2CSM110279R1041	<b>002208</b>			0.010	10
A1-500A	<b>SCL 1/500</b>	2CSM110299R1041	<b>002307</b>			0.010	10
A1-600A	<b>SCL 1/600</b>	2CSM110309R1041	<b>031208</b>			0.010	10
A1-800A	<b>SCL 1/800</b>	2CSM110329R1041	<b>002406</b>			0.010	10
A1-1000A	<b>SCL 1/1000</b>	2CSM110339R1041	<b>002505</b>			0.010	10
A1-1500A	<b>SCL 1/1500</b>	2CSM110359R1041	<b>274704</b>			0.010	10
A1-2000A	<b>SCL 1/2000</b>	2CSM110379R1041	<b>274803</b>			0.010	10
A1-2500A	<b>SCL 1/2500</b>	2CSM110389R1041	<b>274902</b>			0.010	10
A5-5A	<b>SCL 1/A5/5</b>	2CSM120021R1041	<b>031307</b>			0.010	10
A5-10A	<b>SCL 1/A5/10</b>	2CSM120032R1041	<b>031406</b>			0.010	10
A5-20A	<b>SCL 1/A5/20</b>	2CSM120075R1041	<b>031505</b>			0.010	10
A5-30A	<b>SCL 1/A5/30</b>	2CSM120107R1041	<b>031604</b>			0.010	10
A5-50A	<b>SCL 1/A5/50</b>	2CSM120149R1041	<b>031703</b>			0.010	10
A5-80A	<b>SCL 1/A5/80</b>	2CSM120179R1041	<b>031802</b>			0.010	10
A5-100A	<b>SCL 1/A5/100</b>	2CSM120189R1041	<b>031901</b>			0.010	10
A5-150A	<b>SCL 1/A5/150</b>	2CSM120209R1041	<b>032007</b>			0.010	10



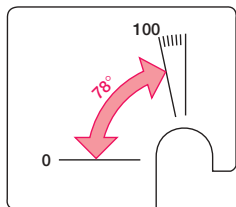
TEPM0276

**SCL1/A1/100**  
Full scale at 90°



CEPM0086

**SCL1/A5/100**  
Full scale at 78°  
(with extra scale)



**Interchangeable scales for analogue ammeters in d.c. AMT2**

A1-5A	<b>SCL 2/5</b>	2CSM230025R1041	<b>032106</b>			0.010	10
A1-6A	<b>SCL 2/6</b>	2CSM230345R1041	<b>032205</b>			0.010	10
A1-10A	<b>SCL 2/10</b>	2CSM230035R1041	<b>032304</b>			0.010	10
A1-20A	<b>SCL 2/20</b>	2CSM230075R1041	<b>032403</b>			0.010	10
A1-30A	<b>SCL 2/30</b>	2CSM230105R1041	<b>032502</b>			0.010	10
A1-50A	<b>SCL 2/50</b>	2CSM230145R1041	<b>032601</b>			0.010	10
A1-80A	<b>SCL 2/80</b>	2CSM230179R1041	<b>032700</b>			0.010	10
A1-100A	<b>SCL 2/100</b>	2CSM230189R1041	<b>032809</b>			0.010	10
A1-150A	<b>SCL 2/150</b>	2CSM230209R1041	<b>032908</b>			0.010	10
A1-200A	<b>SCL 2/200</b>	2CSM230229R1041	<b>033004</b>			0.010	10
A1-250A	<b>SCL 2/250</b>	2CSM230249R1041	<b>033103</b>			0.010	10
A1-300A	<b>SCL 2/300</b>	2CSM230259R1041	<b>033202</b>			0.010	10
A1-400A	<b>SCL 2/400</b>	2CSM230279R1041	<b>033301</b>			0.010	10
A1-500A	<b>SCL 2/500</b>	2CSM230299R1041	<b>033400</b>			0.010	10

## Current transformers

Used to transform primary currents (max. 6000 A) into .../5 A low secondary currents indirectly supplying power to analogue and digital measurement devices. They are available both with wound and through primary. In the first case they are provided along with the bar or the primary terminal; in the second case they have a hole to insert in the bar or the cable which forms the primary. They are available in .../1 A versions on request.

### Technical features

Standard secondary current	[A]	5 (other secondary on request)
Max. voltage for operation ①	[kV]	1.2 (0.72 for compact version)
Test voltage ②	[kV]	6 at 50 Hz/1 min. (3 for compact version)
Short circuit rated thermal current $I_{min}$ ③	[IpN]	40 for 1 sec.
Short circuit rated dynamic current $I_{min}$ ④	[I <sub>red</sub> ]	2.5 for 1 sec.
Permanent overload	[IpN]	1.2
Safety factor ⑤	[Fs]	≤2 at ≤10 according to version and capacity
Frequency	[Hz]	50/60
Air insulation		E class
Terminals ⑥		primary = P1, P2 (K-L) secondary = s1, s2 (k-l) P1 (K)=primary wound input P2 (L)=primary wound output s1 (k)=secondary wound input s2 (l)=secondary wound output with double ration on secondary s1-s2=lower ratio, s1-s3=higher ratio
Housing		ABS resin
Protection degree		IP30
Operating temperature	[°C]	-20...+50
Max. temperature on bars	[°C]	+70
Storage temperature	[°C]	-40...+80
Relative humidity		80%

① Max. voltage (effective value) the transformer can bear.

② Industrial frequency voltage in relation to insulation the transformer bears for 1 min. between the primary and the secondary.

③ Max. primary current (effective value) the transformer bears for 1 sec. with counter-circuited secondary without overload-induced damages.

④ Max. primary current (effective value) the transformer bears for 1 sec. with counter-circuited secondary without damaged due to electromagnetic efforts.

⑤ Ratio between primary current causing nucleus saturation and the rated primary current value; the lower the Sf the higher the protection level on the transformer.

⑥ Brass terminals CuZn37, M4x6 screws with torsion value 1.9 Nm, tensile value 440 N/mm<sup>2</sup> and elasticity limit 340 N/mm<sup>2</sup>.

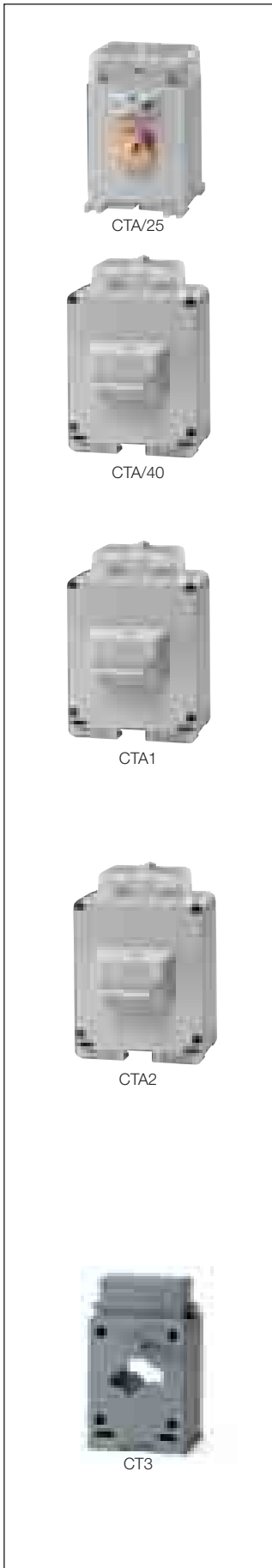
During the installation control the correct input (P1-K) and output (P2-L) direction of the primary cable.

On versions with primary and secondary on terminals pay attention the connection of the primary with the secondary is not inverted.

In the case of a detachment from measurement devices of the transformer in a connected plant counter-circuit the two terminals of the transformer.

It is suggested to earth the transformers.

**Current transformer.../5 A with wound primary, primary and secondary current on terminals**



Primary rated current I <sub>prim</sub>	Precision class - Rating power	Order details	Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
A	-VA	Type code	Order code	EAN		kg	pc.
5	0.5-5 and 1-7	<b>CTA/5</b>	2CSG111020R1141	<b>661306</b>		0.290	1
10	0.5-5 and 1-7	<b>CTA/10</b>	2CSG111030R1141	<b>661405</b>		0.290	1
15	0.5-5 and 1-7	<b>CTA/15</b>	2CSG111040R1141	<b>661504</b>		0.290	1
20	0.5-5 and 1-7	<b>CTA/20</b>	2CSG111050R1141	<b>661603</b>		0.290	1
25	0.5-5 and 1-7	<b>CTA/25</b>	2CSG111060R1141	<b>661702</b>		0.290	1
40	0.5-5 and 1-7	<b>CTA/40</b>	2CSG111080R1141	<b>661801</b>		0.290	1
50	0.5-5 and 1-7	<b>CTA/50</b>	2CSG111090R1141	<b>661900</b>		0.290	1
60	0.5-5 and 1-7	<b>CTA/60</b>	2CSG111100R1141	<b>662006</b>		0.290	1
80	0.5-5 and 1-7	<b>CTA/80</b>	2CSG111110R1141	<b>662105</b>		0.290	1
100	0.5-5 and 1-7	<b>CTA/100</b>	2CSG111120R1141	<b>662204</b>		0.290	1
5	0.5-10 and 1-20	<b>CTA1/5</b>	2CSG211020R1141	<b>662303</b>		0.440	1
10	0.5-10 and 1-20	<b>CTA1/10</b>	2CSG211030R1141	<b>662402</b>		0.440	1
15	0.5-10 and 1-20	<b>CTA1/15</b>	2CSG211040R1141	<b>662501</b>		0.440	1
20	0.5-10 and 1-20	<b>CTA1/20</b>	2CSG211050R1141	<b>662600</b>		0.440	1
25	0.5-10 and 1-20	<b>CTA1/25</b>	2CSG211060R1141	<b>662709</b>		0.440	1
40	0.5-10 and 1-20	<b>CTA1/40</b>	2CSG211080R1141	<b>662808</b>		0.440	1
50	0.5-10 and 1-20	<b>CTA1/50</b>	2CSG211090R1141	<b>662907</b>		0.440	1
60	0.5-10 and 1-20	<b>CTA1/60</b>	2CSG211100R1141	<b>663003</b>		0.440	1
80	0.5-10 and 1-20	<b>CTA1/80</b>	2CSG211110R1141	<b>663102</b>		0.440	1
100	0.5-10 and 1-20	<b>CTA1/100</b>	2CSG211120R1141	<b>663201</b>		0.440	1
150	0.5-10 and 1-20	<b>CTA1/150</b>	2CSG211130R1141	<b>663300</b>		0.440	1
200	0.5-10 and 1-20	<b>CTA1/200</b>	2CSG211140R1141	<b>663409</b>		0.440	1
250	0.5-10 and 1-20	<b>CTA1/250</b>	2CSG211150R1141	<b>663508</b>		0.440	1
300	0.5-10 and 1-20	<b>CTA1/300</b>	2CSG211160R1141	<b>663607</b>		0.440	1
400	0.5-10 and 1-20	<b>CTA1/400</b>	2CSG211170R1141	<b>663706</b>		0.440	1
500	0.5-10 and 1-20	<b>CTA1/500</b>	2CSG211180R1141	<b>663805</b>		0.440	1
5	0.5-10 and 1-35	<b>CTA2/5</b>	2CSG311020R1141	<b>663904</b>		0.440	1
10	0.5-10 and 1-35	<b>CTA2/10</b>	2CSG311030R1141	<b>664000</b>		0.440	1
15	0.5-10 and 1-35	<b>CTA2/15</b>	2CSG311040R1141	<b>664109</b>		0.440	1
20	0.5-10 and 1-35	<b>CTA2/20</b>	2CSG311050R1141	<b>664208</b>		0.440	1
25	0.5-10 and 1-35	<b>CTA2/25</b>	2CSG311060R1141	<b>664307</b>		0.440	1
40	0.5-10 and 1-35	<b>CTA2/40</b>	2CSG311080R1141	<b>664406</b>		0.440	1
50	0.5-10 and 1-35	<b>CTA2/50</b>	2CSG311090R1141	<b>664505</b>		0.440	1
60	0.5-10 and 1-35	<b>CTA2/60</b>	2CSG311100R1141	<b>664604</b>		0.440	1
80	0.5-10 and 1-35	<b>CTA2/80</b>	2CSG311110R1141	<b>664703</b>		0.440	1
100	0.5-10 and 1-35	<b>CTA2/100</b>	2CSG311120R1141	<b>664802</b>		0.440	1
150	0.5-10 and 1-35	<b>CTA2/150</b>	2CSG311130R1141	<b>664901</b>		0.440	1
200	0.5-10 and 1-35	<b>CTA2/200</b>	2CSG311140R1141	<b>665007</b>		0.440	1
250	0.5-10 and 1-35	<b>CTA2/250</b>	2CSG311150R1141	<b>665106</b>		0.440	1
300	0.5-10 and 1-35	<b>CTA2/300</b>	2CSG311160R1141	<b>665205</b>		0.440	1
400	0.5-10 and 1-35	<b>CTA2/400</b>	2CSG311170R1141	<b>665304</b>		0.440	1
500	0.5-10 and 1-35	<b>CTA2/500</b>	2CSG311180R1141	<b>665403</b>		0.440	1
40	3-2	<b>CT3/40</b>	2CSG121060R1101	<b>602408</b>		0.340	1
50	3-2	<b>CT3/50</b>	2CSG121070R1101	<b>602507</b>		0.340	1
60	3-2	<b>CT3/60</b>	2CSG121080R1101	<b>602606</b>		0.340	1
80	3-3	<b>CT3/80</b>	2CSG121090R1101	<b>602705</b>		0.340	1
100	1-3	<b>CT3/100</b>	2CSG121100R1101	<b>602804</b>		0.340	1
150	0.5-3	<b>CT3/150</b>	2CSG121110R1101	<b>602903</b>		0.340	1
200	0.5-3	<b>CT3/200</b>	2CSG121120R1101	<b>603009</b>		0.340	1
250	0.5-6	<b>CT3/250</b>	2CSG121130R1101	<b>603108</b>		0.340	1
300	0.5-6	<b>CT3/300</b>	2CSG121140R1101	<b>603207</b>		0.340	1
400	0.5-6	<b>CT3/400</b>	2CSG121150R1101	<b>603306</b>		0.340	1
500	0.5-6	<b>CT3/500</b>	2CSG121160R1101	<b>603405</b>		0.340	1
600	0.5-6	<b>CT3/600</b>	2CSG121170R1101	<b>603504</b>		0.340	1



Primary rated current I <sub>prim</sub>	Precision class - Rating power	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
A	-VA	Type code	Order code	EAN			kg	pc.
100	1-3	<b>CT4/100</b>	2CSG221100R1101	<b>603603</b>			0.390	1
150	1-3	<b>CT4/150</b>	2CSG221110R1101	<b>603702</b>			0.390	1
200	0.5-4	<b>CT4/200</b>	2CSG221120R1101	<b>603801</b>			0.390	1
250	0.5-6	<b>CT4/250</b>	2CSG221130R1101	<b>603900</b>			0.390	1
300	0.5-6	<b>CT4/300</b>	2CSG221140R1101	<b>604006</b>			0.390	1
400	0.5-10	<b>CT4/400</b>	2CSG221150R1101	<b>604105</b>			0.390	1
500	0.5-10	<b>CT4/500</b>	2CSG221160R1101	<b>604204</b>			0.390	1
600	0.5-10	<b>CT4/600</b>	2CSG221170R1101	<b>604303</b>			0.390	1
800	0.5-10	<b>CT4/800</b>	2CSG221180R1101	<b>604402</b>			0.390	1
1000	0.5-10	<b>CT4/1000</b>	2CSG221190R1101	<b>604501</b>			0.390	1
250	0.5-3	<b>CT5/250</b>	2CSG321130R1101	<b>604600</b>			0.430	1
300	0.5-4	<b>CT5/300</b>	2CSG321140R1101	<b>604709</b>			0.430	1
400	0.5-6	<b>CT5/400</b>	2CSG321150R1101	<b>604808</b>			0.430	1
500	0.5-10	<b>CT5/500</b>	2CSG321160R1101	<b>604907</b>			0.430	1
600	0.5-10	<b>CT5/600</b>	2CSG321170R1101	<b>605003</b>			0.430	1
800	0.5-10	<b>CT5/800</b>	2CSG321180R1101	<b>605102</b>			0.430	1
1000	0.5-10	<b>CT5/1000</b>	2CSG321190R1101	<b>605201</b>			0.430	1
1200	0.5-10	<b>CT5/1200</b>	2CSG321200R1101	<b>605300</b>			0.430	1
1500	0.5-20	<b>CT5/1500</b>	2CSG321220R1101	<b>605409</b>			0.430	1
250	0.5-5	<b>CT6/250</b>	2CSG421130R1101	<b>605508</b>			0.430	1
300	0.5-5	<b>CT6/300</b>	2CSG421140R1101	<b>605607</b>			0.430	1
400	0.5-6	<b>CT6/400</b>	2CSG421150R1101	<b>605706</b>			0.430	1
500	0.5-6	<b>CT6/500</b>	2CSG421160R1101	<b>605805</b>			0.430	1
600	0.5-10	<b>CT6/600</b>	2CSG421170R1101	<b>605904</b>			0.430	1
800	0.5-10	<b>CT6/800</b>	2CSG421180R1101	<b>606000</b>			0.430	1
1000	0.5-20	<b>CT6/1000</b>	2CSG421190R1101	<b>606109</b>			0.430	1
1200	0.5-20	<b>CT6/1200</b>	2CSG421200R1101	<b>606208</b>			0.430	1
1500	0.5-30	<b>CT6/1500</b>	2CSG421220R1101	<b>606307</b>			0.430	1
2000	0.5-30	<b>CT6/2000</b>	2CSG421230R1101	<b>606406</b>			0.430	1
2500	0.5-30	<b>CT6/2500</b>	2CSG421240R1101	<b>606505</b>			0.430	1
300	0.5-5	<b>CT8/300</b>	2CSG521140R1101	<b>606604</b>			0.500	1
400	0.5-6	<b>CT8/400</b>	2CSG521150R1101	<b>606703</b>			0.500	1
500	0.5-10	<b>CT8/500</b>	2CSG521160R1101	<b>606802</b>			0.500	1
600	0.5-10	<b>CT8/600</b>	2CSG521170R1101	<b>606901</b>			0.500	1
800	0.5-10	<b>CT8/800</b>	2CSG521180R1101	<b>607007</b>			0.500	1
1000	0.5-10	<b>CT8/1000</b>	2CSG521190R1101	<b>607106</b>			0.500	1
1200	0.5-15	<b>CT8/1200</b>	2CSG521200R1101	<b>607205</b>			0.500	1
1500	0.5-20	<b>CT8/1500</b>	2CSG521220R1101	<b>607304</b>			0.500	1
2000	0.5-20	<b>CT8/2000</b>	2CSG521230R1101	<b>607403</b>			0.500	1
2500	0.5-20	<b>CT8/2500</b>	2CSG521240R1101	<b>607502</b>			0.500	1
3000	0.5-20	<b>CT8/3000</b>	2CSG521250R1101	<b>607601</b>			0.500	1
400	0.5-6	<b>CT8-V/400</b>	2CSG631150R1101	<b>608707</b>			0.500	1
500	0.5-10	<b>CT8-V/500</b>	2CSG631160R1101	<b>608806</b>			0.500	1
600	0.5-10	<b>CT8-V/600</b>	2CSG631170R1101	<b>608905</b>			0.500	1
800	0.5-10	<b>CT8-V/800</b>	2CSG631180R1101	<b>609001</b>			0.500	1
1000	0.5-10	<b>CT8-V/1000</b>	2CSG631190R1101	<b>609100</b>			0.500	1
1200	0.5-10	<b>CT8-V/1200</b>	2CSG631200R1101	<b>609209</b>			0.500	1
1500	0.5-10	<b>CT8-V/1500</b>	2CSG631220R1101	<b>609308</b>			0.500	1
2000	0.5-30	<b>CT8-V/2000</b>	2CSG631230R1101	<b>609407</b>			0.500	1
2500	0.5-30	<b>CT8-V/2500</b>	2CSG631240R1101	<b>609506</b>			0.500	1



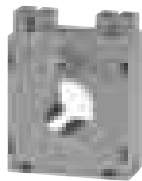
CT12

500	0.5-10	<b>CT12/500</b>	2CSG721160R1101	<b>607700</b>	0.700	1
600	0.5-10	<b>CT12/600</b>	2CSG721170R1101	<b>607809</b>	0.700	1
800	0.5-15	<b>CT12/800</b>	2CSG721180R1101	<b>607908</b>	0.700	1
1000	0.5-20	<b>CT12/1000</b>	2CSG721190R1101	<b>608004</b>	0.700	1
1200	0.5-20	<b>CT12/1200</b>	2CSG721200R1101	<b>608103</b>	0.700	1
1500	0.5-20	<b>CT12/1500</b>	2CSG721220R1101	<b>608202</b>	0.700	1
2000	0.5-30	<b>CT12/2000</b>	2CSG721230R1101	<b>608301</b>	0.700	1
2500	0.5-40	<b>CT12/2500</b>	2CSG721240R1101	<b>608400</b>	0.700	1
3000	0.5-40	<b>CT12/3000</b>	2CSG721250R1101	<b>608509</b>	0.700	1
4000	0.5-50	<b>CT12/4000</b>	2CSG721260R1101	<b>608608</b>	0.700	1
5000	0.5-50	<b>CT12/5000</b>	2CSG721270R1101	<b>745600</b>	0.700	1
6000	0.5-50	<b>CT12/6000</b>	2CSG721280R1101	<b>745709</b>	0.700	1

800	0.5-10	<b>CT12-V/800</b>	2CSG831180R1101	<b>609605</b>	0.660	1
1000	0.5-10	<b>CT12-V/1000</b>	2CSG831190R1101	<b>609704</b>	0.660	1
1250	0.5-10	<b>CT12-V/1200</b>	2CSG831200R1101	<b>609803</b>	0.660	1
1200	0.5-10	<b>CT12-V/1250</b>	2CSG831210R1101	<b>609902</b>	0.660	1
1500	0.5-12	<b>CT12-V/1500</b>	2CSG831220R1101	<b>610007</b>	0.660	1
2000	0.5-15	<b>CT12-V/2000</b>	2CSG831230R1101	<b>610106</b>	0.660	1
2500	0.5-20	<b>CT12-V/2500</b>	2CSG831240R1101	<b>610205</b>	0.660	1
3000	0.5-20	<b>CT12-V/3000</b>	2CSG831250R1101	<b>610304</b>	0.660	1
4000	-	<b>CT12-V/4000</b>	2CSG831260R1101	<b>745808</b>	0.660	1

**Compact type current transformer.../5 A with through primary**

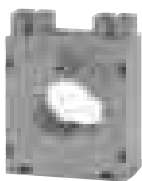
From cable ø 21 mm max.



CT-M1

40	3-2	<b>CT-M1/40</b>	2CSG121060R1151	<b>665502</b>	0.230	1
50	3-2	<b>CT-M1/50</b>	2CSG121070R1151	<b>665601</b>	0.230	1
60	3-2	<b>CT-M1/60</b>	2CSG121080R1151	<b>665700</b>	0.230	1
80	3-3	<b>CT-M1/80</b>	2CSG121090R1151	<b>665809</b>	0.230	1
100	1-3	<b>CT-M1/100</b>	2CSG121100R1151	<b>665908</b>	0.230	1
150	1-4	<b>CT-M1/150</b>	2CSG121110R1151	<b>666004</b>	0.230	1
200	0.5-3	<b>CT-M1/200</b>	2CSG121120R1151	<b>666103</b>	0.230	1
250	0.5-3	<b>CT-M1/250</b>	2CSG121130R1151	<b>666202</b>	0.230	1

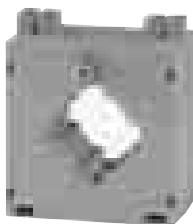
From cable ø 23 mm max. or horizontal bar 20x12 - 25x15 - 30x10 mm



CT-M3

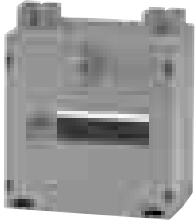
100	1-2	<b>CT-M3/100</b>	2CSG221100R1151	<b>666301</b>	0.230	1
150	1-3	<b>CT-M3/150</b>	2CSG221110R1151	<b>666400</b>	0.230	1
200	1-3	<b>CT-M3/200</b>	2CSG221120R1151	<b>666509</b>	0.230	1
250	0.5-2	<b>CT-M3/250</b>	2CSG221130R1151	<b>666608</b>	0.230	1
300	0.5-2	<b>CT-M3/300</b>	2CSG221140R1151	<b>666707</b>	0.230	1
400	0.5-3	<b>CT-M3/400</b>	2CSG221150R1151	<b>666806</b>	0.230	1

From cable ø 30 mm max. or horizontal/vertical bar 25x25 - 30x20 - 40x10 mm



CT-M4

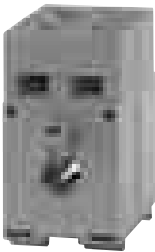
100	1-3	<b>CT-M4/100</b>	2CSG321100R1151	<b>666905</b>	0.290	1
150	1-3	<b>CT-M4/150</b>	2CSG321110R1151	<b>667001</b>	0.290	1
200	0.5-4	<b>CT-M4/200</b>	2CSG321120R1151	<b>667100</b>	0.290	1
250	0.5-6	<b>CT-M4/250</b>	2CSG321130R1151	<b>667209</b>	0.290	1
300	0.5-6	<b>CT-M4/300</b>	2CSG321140R1151	<b>667308</b>	0.290	1
400	0.5-10	<b>CT-M4/400</b>	2CSG321150R1151	<b>667407</b>	0.290	1
500	0.5-10	<b>CT-M4/500</b>	2CSG321160R1151	<b>667506</b>	0.290	1
600	0.5-10	<b>CT-M4/600</b>	2CSG321170R1151	<b>667605</b>	0.290	1



CT-M5



CT-M6



CT-SM

Primary rated current I <sub>prim</sub>	Precision class - Rating power	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
A	-VA	Type code	Order code	EAN			kg	pc.

**From horizontal bar 50x12 mm**

250	1-3	<b>CT-M5/250</b>	2CSG421130R1151	<b>667704</b>			0.290	1
300	0.5-4	<b>CT-M5/300</b>	2CSG421140R1151	<b>667803</b>			0.290	1
400	0.5-4	<b>CT-M5/400</b>	2CSG421150R1151	<b>667902</b>			0.290	1
500	0.5-6	<b>CT-M5/500</b>	2CSG421160R1151	<b>668008</b>			0.290	1
600	0.5-6	<b>CT-M5/600</b>	2CSG421170R1151	<b>668107</b>			0.290	1
800	0.5-10	<b>CT-M5/800</b>	2CSG421180R1151	<b>668206</b>			0.290	1
1000	0.5-10	<b>CT-M5/1000</b>	2CSG421190R1151	<b>668305</b>			0.290	1

**From two cables (max. ø 22 mm) or from horizontal bar 50x23 - 60x20 mm**

300	0.5-5	<b>CT-M6/300</b>	2CSG521140R1151	<b>668404</b>			0.380	1
400	0.5-6	<b>CT-M6/400</b>	2CSG521150R1151	<b>668503</b>			0.380	1
500	0.5-6	<b>CT-M6/500</b>	2CSG521160R1151	<b>668602</b>			0.380	1
600	0.5-6	<b>CT-M6/600</b>	2CSG521170R1151	<b>668701</b>			0.380	1
800	0.5-10	<b>CT-M6/800</b>	2CSG521180R1151	<b>668800</b>			0.380	1
1000	0.5-10	<b>CT-M6/1000</b>	2CSG521190R1151	<b>668909</b>			0.380	1
1200	0.5-15	<b>CT-M6/1200</b>	2CSG521200R1151	<b>669005</b>			0.380	1
1500	0.5-20	<b>CT-M6/1500</b>	2CSG521220R1151	<b>669104</b>			0.380	1

**Miniaturized type current transformer.../5 A with through primary**

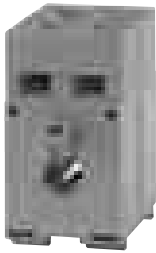
**From cable (max. ø 13 mm - minimum distance between cables = 27 mm)**

40	3-2	<b>CT-SM1/40</b>	2CSG121060R1161	<b>669203</b>			0.210	1
50	3-2	<b>CT-SM1/50</b>	2CSG121070R1161	<b>669302</b>			0.210	1
60	3-3	<b>CT-SM1/60</b>	2CSG121080R1161	<b>669401</b>			0.210	1
75	3-3	<b>CT-SM1/75</b>	2CSG121090R1161	<b>669500</b>			0.210	1
80	3-3	<b>CT-SM1/80</b>	2CSG121100R1161	<b>669609</b>			0.210	1
100	1-3	<b>CT-SM1/100</b>	2CSG121110R1161	<b>669708</b>			0.210	1
120	1-5	<b>CT-SM1/120</b>	2CSG121120R1161	<b>669807</b>			0.210	1
125	1-5	<b>CT-SM1/125</b>	2CSG121130R1161	<b>669906</b>			0.210	1
150	1-5	<b>CT-SM1/150</b>	2CSG121140R1161	<b>670001</b>			0.210	1

**From cable (max. ø 11 mm) or horizontal bar 15x5 mm (minimum distance between cables or bars = 27 mm)**

60	3-3	<b>CT-SM2/60</b>	2CSG221080R1161	<b>670100</b>			0.210	1
75	3-3	<b>CT-SM2/75</b>	2CSG221090R1161	<b>670209</b>			0.210	1
80	3-3	<b>CT-SM2/80</b>	2CSG221100R1161	<b>670308</b>			0.210	1
100	1-3	<b>CT-SM2/100</b>	2CSG221110R1161	<b>670407</b>			0.210	1
120	1-5	<b>CT-SM2/120</b>	2CSG221120R1161	<b>670506</b>			0.210	1
125	1-5	<b>CT-SM2/125</b>	2CSG221130R1161	<b>670605</b>			0.210	1
150	1-5	<b>CT-SM2/150</b>	2CSG221140R1161	<b>670704</b>			0.210	1





CT-SM

From cable (max.  $\varnothing$  18 mm - minimum distance between cables or bars = 45 mm)

40	3-3	<b>CT-SM3/40</b>	2CSG321060R1161	<b>670803</b>	0.320	1
50	3-4	<b>CT-SM3/50</b>	2CSG321070R1161	<b>670902</b>	0.320	1
60	3-5	<b>CT-SM3/60</b>	2CSG321080R1161	<b>671008</b>	0.320	1
75	3-5	<b>CT-SM3/75</b>	2CSG321090R1161	<b>671107</b>	0.320	1
80	3-5	<b>CT-SM3/80</b>	2CSG321100R1161	<b>671206</b>	0.320	1
100	1-5	<b>CT-SM3/100</b>	2CSG321110R1161	<b>671305</b>	0.320	1
120	1-3	<b>CT-SM3/120</b>	2CSG321120R1161	<b>671404</b>	0.320	1
125	1-3	<b>CT-SM3/125</b>	2CSG321130R1161	<b>671503</b>	0.320	1
150	0.5-5	<b>CT-SM3/150</b>	2CSG321140R1161	<b>671602</b>	0.320	1
200	0.5-5	<b>CT-SM3/200</b>	2CSG321150R1161	<b>671701</b>	0.320	1
250	0.5-10	<b>CT-SM3/250</b>	2CSG321160R1161	<b>671800</b>	0.320	1
300	0.5-10	<b>CT-SM3/300</b>	2CSG321170R1161	<b>671909</b>	0.320	1

From cable (max.  $\varnothing$  25 mm - minimum distance between cables or bars = 45 mm)

200	0.5-5	<b>CT-SM4/200</b>	2CSG421150R1161	<b>672005</b>	0.320	1
250	0.5-6	<b>CT-SM4/250</b>	2CSG421160R1161	<b>672104</b>	0.320	1
300	0.5-6	<b>CT-SM4/300</b>	2CSG421170R1161	<b>672203</b>	0.320	1
400	0.5-10	<b>CT-SM4/400</b>	2CSG421180R1161	<b>672302</b>	0.320	1

From horizontal bar 15x5 - 20x5 - 25x5 - 25x6.5 mm or from vertical bar 15x5 - 20x5 mm (minimum distance between bars = 35 mm)

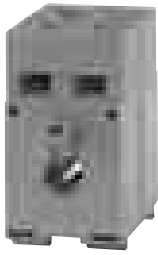
100	1-4	<b>CT-SM5/100</b>	2CSG521110R1161	<b>672401</b>	0.260	1
120	1-4	<b>CT-SM5/120</b>	2CSG521120R1161	<b>672500</b>	0.260	1
125	1-4	<b>CT-SM5/125</b>	2CSG521130R1161	<b>672609</b>	0.260	1
150	1-4	<b>CT-SM5/150</b>	2CSG521140R1161	<b>672708</b>	0.260	1
200	1-4	<b>CT-SM5/200</b>	2CSG521150R1161	<b>672807</b>	0.260	1
250	1-4	<b>CT-SM5/250</b>	2CSG521160R1161	<b>672906</b>	0.260	1
300	0.5-4	<b>CT-SM5/300</b>	2CSG521170R1161	<b>673002</b>	0.260	1

From cable (max.  $\varnothing$  32 mm - minimum distance between cables or bars = 45 mm)

300	0.5-5	<b>CT-SM6/300</b>	2CSG621170R1161	<b>673101</b>	0.320	1
400	0.5-6	<b>CT-SM6/400</b>	2CSG621180R1161	<b>673200</b>	0.320	1
500	0.5-10	<b>CT-SM6/500</b>	2CSG621190R1161	<b>673309</b>	0.320	1
600	0.5-10	<b>CT-SM6/600</b>	2CSG621200R1161	<b>673408</b>	0.320	1

From horizontal bar 29x9.5 - 29x10.5 - 30x5 - 30x6 - 30x8 - 30x10 - 2x30x5 - 2x32x5 mm or from vertical bar 32x5 mm (minimum distance between horizontal bars = 45 mm. between vertical bars = 35 mm)

200	1-5	<b>CT-SM7/200</b>	2CSG731150R1161	<b>673507</b>	0.320	1
250	1-5	<b>CT-SM7/250</b>	2CSG731160R1161	<b>673606</b>	0.320	1
300	0.5-5	<b>CT-SM7/300</b>	2CSG731170R1161	<b>673705</b>	0.320	1
400	0.5-5	<b>CT-SM7/400</b>	2CSG731180R1161	<b>673804</b>	0.320	1
500	0.5-10	<b>CT-SM7/500</b>	2CSG731190R1161	<b>673903</b>	0.320	1
600	0.5-10	<b>CT-SM7/600</b>	2CSG731200R1161	<b>674009</b>	0.320	1



CT-SM

Primary rated current I <sub>prim</sub>	Precision class - Rating power	Order details	Bbn	Price	Price group	Weight	Pack unit
A	-VA	Type code	Order code	8012542	1 piece	1 piece	kg pc.

From horizontal bar 30x30 - 30x45 - 37x9.5 - 37x13 - 50x10 - 55x9.5 - 55x13 - 63x35 - 2x50x5  
2x50x10 2x63x5 - 3x50x5 mm (minimum distance between horizontal bars = 70 mm)

200	1-5	<b>CT-SM8/200</b>	2CSG821150R1161	<b>674108</b>		0.410	1
250	1-5	<b>CT-SM8/250</b>	2CSG821160R1161	<b>674207</b>		0.410	1
300	0.5-5	<b>CT-SM8/300</b>	2CSG821170R1161	<b>674306</b>		0.410	1
400	0.5-5	<b>CT-SM8/400</b>	2CSG821180R1161	<b>674405</b>		0.410	1
500	0.5-10	<b>CT-SM8/500</b>	2CSG821190R1161	<b>674504</b>		0.410	1
600	0.5-10	<b>CT-SM8/600</b>	2CSG821200R1161	<b>674603</b>		0.410	1
800	0.5-10	<b>CT-SM8/800</b>	2CSG821220R1161	<b>674702</b>		0.410	1
1000	0.5-15	<b>CT-SM8/1000</b>	2CSG821230R1161	<b>674801</b>		0.410	1
1250	0.5-15	<b>CT-SM8/1250</b>	2CSG821240R1161	<b>674900</b>		0.410	1
1500	0.5-15	<b>CT-SM8/1500</b>	2CSG821250R1161	<b>675006</b>		0.410	1

From vertical bar 2x63x5 - 3x63x5 mm (minimum distance between bars = 45 mm)

400	0.5-5	<b>CT-SM9/400</b>	2CSG931180R1161	<b>675105</b>		0.420	1
500	0.5-10	<b>CT-SM9/500</b>	2CSG931190R1161	<b>675204</b>		0.420	1
600	0.5-10	<b>CT-SM9/600</b>	2CSG931200R1161	<b>675303</b>		0.420	1
800	0.5-10	<b>CT-SM9/800</b>	2CSG931210R1161	<b>675402</b>		0.420	1
1000	0.5-15	<b>CT-SM9/1000</b>	2CSG931220R1161	<b>675501</b>		0.420	1
1250	0.5-15	<b>CT-SM9/1250</b>	2CSG931240R1161	<b>675600</b>		0.420	1
1500	0.5-15	<b>CT-SM9/1500</b>	2CSG931250R1161	<b>675709</b>		0.420	1

**Protection type current transformer.../5 A**

Primary rated current I <sub>prim</sub>	Rating power (Precision class)	Order details	Bbn	Price	Price group	Weight	Pack unit
A	VA	Type code	Order code	8012542	1 piece	1 piece	kg pc.

With wound primary, primary and secondary current on terminals

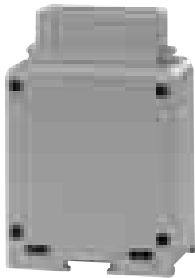
5	4 (5P5)	<b>CTP1 5P5/5</b>	2CSG111010R1171	<b>675808</b>		0.390	1
10	4 (5P5)	<b>CTP1 5P5/10</b>	2CSG111020R1171	<b>675907</b>		0.390	1
15	4 (5P5)	<b>CTP1 5P5/15</b>	2CSG111030R1171	<b>676003</b>		0.390	1
20	4 (5P5)	<b>CTP1 5P5/20</b>	2CSG111040R1171	<b>676102</b>		0.390	1
25	4 (5P5)	<b>CTP1 5P5/25</b>	2CSG111050R1171	<b>676201</b>		0.390	1
40	4 (5P5)	<b>CTP1 5P5/40</b>	2CSG111060R1171	<b>676300</b>		0.390	1

With wound primary, primary and secondary current on terminals

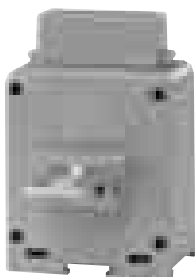
5	2 (5P10)	<b>CTP1 5P10/5</b>	2CSG121010R1171	<b>676409</b>		0.390	1
10	2 (5P10)	<b>CTP1 5P10/10</b>	2CSG121020R1171	<b>676508</b>		0.390	1
15	2 (5P10)	<b>CTP1 5P10/15</b>	2CSG121030R1171	<b>676607</b>		0.390	1
20	2 (5P10)	<b>CTP1 5P10/20</b>	2CSG121040R1171	<b>676706</b>		0.390	1
25	2 (5P10)	<b>CTP1 5P10/25</b>	2CSG121050R1171	<b>676805</b>		0.390	1
40	2 (5P10)	<b>CTP1 5P10/40</b>	2CSG121060R1171	<b>676904</b>		0.390	1

With wound primary, primary current from built-in central bar 25x3 mm up to 300 A, 25x5 mm from 400 to 500 A and secondary current on terminals

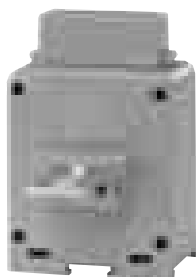
50	4 (5P5)	<b>CTP2 5P5/50</b>	2CSG211070R1171	<b>677000</b>		0.390	1
60	4 (5P5)	<b>CTP2 5P5/60</b>	2CSG211080R1171	<b>677109</b>		0.390	1
80	4 (5P5)	<b>CTP2 5P5/80</b>	2CSG211090R1171	<b>677208</b>		0.390	1
100	4 (5P5)	<b>CTP2 5P5/100</b>	2CSG211100R1171	<b>677307</b>		0.390	1
150	4 (5P5)	<b>CTP2 5P5/150</b>	2CSG211110R1171	<b>677406</b>		0.390	1
200	4 (5P5)	<b>CTP2 5P5/200</b>	2CSG211120R1171	<b>677505</b>		0.390	1



CTP1



CTP2



CTP2



CTP5



CTP6

250	4 (5P5)	<b>CTP2 5P5/250</b>	2CSG211130R1171	<b>677604</b>	0.390	1
300	4 (5P5)	<b>CTP2 5P5/300</b>	2CSG211140R1171	<b>677703</b>	0.390	1
400	4 (5P5)	<b>CTP2 5P5/400</b>	2CSG211150R1171	<b>677802</b>	0.390	1
500	4 (5P5)	<b>CTP2 5P5/500</b>	2CSG211160R1171	<b>677901</b>	0.390	1

With wound primary, primary current from built-in central bar 25x3 mm up to 300 A, 25x5 mm from 400 to 500 A and secondary current on terminals

50	2 (5P10)	<b>CTP2 5P10/50</b>	2CSG221070R1171	<b>678007</b>	0.390	1
60	2 (5P10)	<b>CTP2 5P10/60</b>	2CSG221080R1171	<b>678106</b>	0.390	1
80	2 (5P10)	<b>CTP2 5P10/80</b>	2CSG221090R1171	<b>678205</b>	0.390	1
100	2 (5P10)	<b>CTP2 5P10/100</b>	2CSG221100R1171	<b>678304</b>	0.390	1
150	2 (5P10)	<b>CTP2 5P10/150</b>	2CSG221110R1171	<b>678403</b>	0.390	1
200	2 (5P10)	<b>CTP2 5P10/200</b>	2CSG221120R1171	<b>678502</b>	0.390	1
250	2 (5P10)	<b>CTP2 5P10/250</b>	2CSG221130R1171	<b>678601</b>	0.390	1
300	2 (5P10)	<b>CTP2 5P10/300</b>	2CSG221140R1171	<b>678700</b>	0.390	1
400	2 (5P10)	<b>CTP2 5P10/400</b>	2CSG221150R1171	<b>678809</b>	0.390	1
500	2 (5P10)	<b>CTP2 5P10/500</b>	2CSG221160R1171	<b>678908</b>	0.390	1

For primary current from cable (max.  $\varnothing$  30 mm) or from horizontal bar 30x30 - 40x25 - 50x20 mm, vertical 30x10 mm

250	4 (5P5)	<b>CTP5 5P5/250</b>	2CSG311130R1171	<b>679004</b>	0.430	1
300	4 (5P5)	<b>CTP5 5P5/300</b>	2CSG311140R1171	<b>679103</b>	0.430	1
400	4 (5P5)	<b>CTP5 5P5/400</b>	2CSG311150R1171	<b>679202</b>	0.430	1
500	4 (5P5)	<b>CTP5 5P5/500</b>	2CSG311160R1171	<b>679301</b>	0.430	1
600	4 (5P5)	<b>CTP5 5P5/600</b>	2CSG311170R1171	<b>679400</b>	0.430	1

For primary current from cable (max.  $\varnothing$  30 mm) or from horizontal bar 30x30 - 40x25 - 50x20 mm, vertical 30x10 mm

800	4 (5P5)	<b>CTP5 5P5/800</b>	2CSG311180R1171	<b>679509</b>	0.430	1
1000	4 (5P5)	<b>CTP5 5P5/1000</b>	2CSG311190R1171	<b>679608</b>	0.430	1
1200	6 (5P5)	<b>CTP5 5P5/1200</b>	2CSG311200R1171	<b>679707</b>	0.430	1
1500	8 (5P5)	<b>CTP5 5P5/1500</b>	2CSG311220R1171	<b>679806</b>	0.430	1

For primary current from cable (max.  $\varnothing$  30 mm) or from horizontal bar 30x30 - 40x25 - 50x20 mm, vertical 30x10 mm

250	2 (5P10)	<b>CTP5 5P10/250</b>	2CSG321130R1171	<b>679905</b>	0.430	1
300	2 (5P10)	<b>CTP5 5P10/300</b>	2CSG321140R1171	<b>680000</b>	0.430	1
400	2 (5P10)	<b>CTP5 5P10/400</b>	2CSG321150R1171	<b>680109</b>	0.430	1
500	2 (5P10)	<b>CTP5 5P10/500</b>	2CSG321160R1171	<b>680208</b>	0.430	1
600	2 (5P10)	<b>CTP5 5P10/600</b>	2CSG321170R1171	<b>680307</b>	0.430	1
800	2 (5P10)	<b>CTP5 5P10/800</b>	2CSG321180R1171	<b>680406</b>	0.430	1
1000	2 (5P10)	<b>CTP5 5P10/1000</b>	2CSG321190R1171	<b>680505</b>	0.430	1
1200	3 (5P10)	<b>CTP5 5P10/1200</b>	2CSG321200R1171	<b>680604</b>	0.430	1
1500	4 (5P10)	<b>CTP5 5P10/1500</b>	2CSG321220R1171	<b>680703</b>	0.430	1

For primary current from cable (max.  $\varnothing$  50 mm) or from horizontal bar 50x20 - 60x20 mm

250	6 (5P5)	<b>CTP6 5P5/250</b>	2CSG411130R1171	<b>680802</b>	0.460	1
300	6 (5P5)	<b>CTP6 5P5/300</b>	2CSG411140R1171	<b>680901</b>	0.460	1
400	5 (5P5)	<b>CTP6 5P5/400</b>	2CSG411150R1171	<b>681007</b>	0.460	1
500	5 (5P5)	<b>CTP6 5P5/500</b>	2CSG411160R1171	<b>681106</b>	0.460	1
600	5 (5P5)	<b>CTP6 5P5/600</b>	2CSG411170R1171	<b>681205</b>	0.460	1
800	15 (5P5)	<b>CTP6 5P5/800</b>	2CSG411180R1171	<b>681304</b>	0.460	1
1000	20 (5P5)	<b>CTP6 5P5/1000</b>	2CSG411190R1171	<b>681403</b>	0.460	1
1200	20 (5P5)	<b>CTP6 5P5/1200</b>	2CSG411200R1171	<b>681502</b>	0.460	1
1500	30 (5P5)	<b>CTP6 5P5/1500</b>	2CSG411220R1171	<b>681601</b>	0.460	1



CTP6



CTP8

Primary rated current I <sub>prim</sub>	Rating power (Precision class)	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
A	VA	Type code	Order code	EAN			kg	pc.

For primary current from cable (max. ø 50 mm) or from horizontal bar 50x20 - 60x20 mm

250	2 (5P10)	<b>CTP6 5P10/250</b>	2CSG421130R1171	<b>681700</b>			0.460	1
300	3 (5P10)	<b>CTP6 5P10/300</b>	2CSG421140R1171	<b>681809</b>			0.460	1
400	4 (5P10)	<b>CTP6 5P10/400</b>	2CSG421150R1171	<b>681908</b>			0.460	1
500	4 (5P10)	<b>CTP6 5P10/500</b>	2CSG421160R1171	<b>682004</b>			0.460	1
600	4 (5P10)	<b>CTP6 5P10/600</b>	2CSG421170R1171	<b>682103</b>			0.460	1
800	5 (5P10)	<b>CTP6 5P10/800</b>	2CSG421180R1171	<b>682202</b>			0.460	1
1000	6 (5P10)	<b>CTP6 5P10/1000</b>	2CSG421190R1171	<b>682301</b>			0.460	1
1200	6 (5P10)	<b>CTP6 5P10/1200</b>	2CSG421200R1171	<b>682400</b>			0.460	1
1500	10 (5P10)	<b>CTP6 5P10/1500</b>	2CSG421220R1171	<b>682509</b>			0.460	1

For primary current from two cables (max. ø 30 mm each) or from horizontal bar 60x30 - 80x30 mm

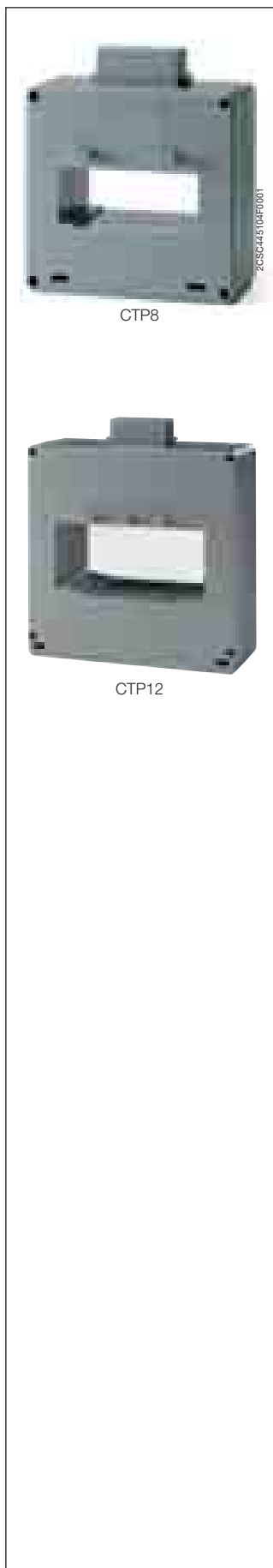
300	5 (5P5)	<b>CTP8 5P5/300</b>	2CSG511140R1171	<b>682608</b>			0.500	1
400	6 (5P5)	<b>CTP8 5P5/400</b>	2CSG511150R1171	<b>682707</b>			0.500	1
500	15 (5P5)	<b>CTP8 5P5/500</b>	2CSG511160R1171	<b>682806</b>			0.500	1
600	20 (5P5)	<b>CTP8 5P5/600</b>	2CSG511170R1171	<b>682905</b>			0.500	1
800	20 (5P5)	<b>CTP8 5P5/800</b>	2CSG511180R1171	<b>683001</b>			0.500	1
1000	20 (5P5)	<b>CTP8 5P5/1000</b>	2CSG511190R1171	<b>683100</b>			0.500	1
1200	30 (5P5)	<b>CTP8 5P5/1200</b>	2CSG511200R1171	<b>683209</b>			0.500	1
1500	20 (5P5)	<b>CTP8 5P5/1500</b>	2CSG511220R1171	<b>683308</b>			0.500	1
2000	12 (5P5)	<b>CTP8 5P5/2000</b>	2CSG511230R1171	<b>683407</b>			0.500	1
2500	15 (5P5)	<b>CTP8 5P5/2500</b>	2CSG511240R1171	<b>683506</b>			0.500	1

For primary current from two cables (max. ø 30 mm each) or from horizontal bar 60x30 - 80x30 mm

300	3 (5P10)	<b>CTP8 5P10/300</b>	2CSG521140R1171	<b>683605</b>			0.500	1
400	3 (5P10)	<b>CTP8 5P10/400</b>	2CSG521150R1171	<b>683704</b>			0.500	1
500	8 (5P10)	<b>CTP8 5P10/500</b>	2CSG521160R1171	<b>683803</b>			0.500	1
600	8 (5P10)	<b>CTP8 5P10/600</b>	2CSG521170R1171	<b>683902</b>			0.500	1
800	10 (5P10)	<b>CTP8 5P10/800</b>	2CSG521180R1171	<b>684008</b>			0.500	1
1000	10 (5P10)	<b>CTP8 5P10/1000</b>	2CSG521190R1171	<b>684107</b>			0.500	1
1200	15 (5P10)	<b>CTP8 5P10/1200</b>	2CSG521200R1171	<b>684206</b>			0.500	1
1500	6 (5P10)	<b>CTP8 5P10/1500</b>	2CSG521220R1171	<b>684305</b>			0.500	1
2000	6 (5P10)	<b>CTP8 5P10/2000</b>	2CSG521230R1171	<b>684404</b>			0.500	1
2500	8 (5P10)	<b>CTP8 5P10/2500</b>	2CSG521240R1171	<b>684503</b>			0.500	1

For primary current from two cables (max. ø 30 mm each) or from horizontal bar 60x30 - 80x30 mm

300	1.5 (5P15)	<b>CTP8 5P15/300</b>	2CSG531140R1171	<b>684602</b>			0.500	1
400	1.5 (5P15)	<b>CTP8 5P15/400</b>	2CSG531150R1171	<b>684701</b>			0.500	1
500	4 (5P15)	<b>CTP8 5P15/500</b>	2CSG531160R1171	<b>684800</b>			0.500	1
600	4 (5P15)	<b>CTP8 5P15/600</b>	2CSG531170R1171	<b>684909</b>			0.500	1
800	6 (5P15)	<b>CTP8 5P15/800</b>	2CSG531180R1171	<b>685005</b>			0.500	1
1000	5 (5P15)	<b>CTP8 5P15/1000</b>	2CSG531190R1171	<b>685104</b>			0.500	1
1200	6 (5P15)	<b>CTP8 5P15/1200</b>	2CSG531200R1171	<b>685203</b>			0.500	1
1500	2 (5P15)	<b>CTP8 5P15/1500</b>	2CSG531220R1171	<b>685302</b>			0.500	1
2000	5 (5P15)	<b>CTP8 5P15/2000</b>	2CSG531230R1171	<b>685401</b>			0.500	1
2500	6 (5P15)	<b>CTP8 5P15/2500</b>	2CSG531240R1171	<b>685500</b>			0.500	1



For primary current from two cables (max.  $\varnothing$  30 mm each) or from horizontal bar 60x30 - 80x30 mm

300	1 (5P20)	<b>CTP8 5P20/300</b>	2CSG541140R1171	<b>685609</b>	0.500	1
400	1 (5P20)	<b>CTP8 5P20/400</b>	2CSG541150R1171	<b>685708</b>	0.500	1
500	2 (5P20)	<b>CTP8 5P20/500</b>	2CSG541160R1171	<b>685807</b>	0.500	1
600	2 (5P20)	<b>CTP8 5P20/600</b>	2CSG541170R1171	<b>685906</b>	0.500	1
800	3 (5P20)	<b>CTP8 5P20/800</b>	2CSG541180R1171	<b>686002</b>	0.500	1
1000	2 (5P20)	<b>CTP8 5P20/1000</b>	2CSG541190R1171	<b>686101</b>	0.500	1
1200	3 (5P20)	<b>CTP8 5P20/1200</b>	2CSG541200R1171	<b>686200</b>	0.500	1
1500	1 (5P20)	<b>CTP8 5P20/1500</b>	2CSG541220R1171	<b>686309</b>	0.500	1
2000	3 (5P20)	<b>CTP8 5P20/2000</b>	2CSG541230R1171	<b>686408</b>	0.500	1
2500	4 (5P20)	<b>CTP8 5P20/2500</b>	2CSG541240R1171	<b>686507</b>	0.500	1

For primary current from two cables (max.  $\varnothing$  50 mm each) or from horizontal bar 80x50 - 100x50 - 125x50 mm

400	8 (5P5)	<b>CTP12 5P5/400</b>	2CSG611150R1171	<b>686606</b>	0.390	1
500	8 (5P5)	<b>CTP12 5P5/500</b>	2CSG611160R1171	<b>686705</b>	0.390	1
600	8 (5P5)	<b>CTP12 5P5/600</b>	2CSG611170R1171	<b>686804</b>	0.390	1
800	12 (5P5)	<b>CTP12 5P5/800</b>	2CSG611180R1171	<b>686903</b>	0.390	1
1000	15 (5P5)	<b>CTP12 5P5/1000</b>	2CSG611190R1171	<b>687009</b>	0.390	1
1200	20 (5P5)	<b>CTP12 5P5/1200</b>	2CSG611200R1171	<b>687108</b>	0.390	1
1500	20 (5P5)	<b>CTP12 5P5/1500</b>	2CSG611220R1171	<b>687207</b>	0.390	1
2000	25 (5P5)	<b>CTP12 5P5/2000</b>	2CSG611230R1171	<b>687306</b>	0.390	1
2500	30 (5P5)	<b>CTP12 5P5/2500</b>	2CSG611240R1171	<b>687405</b>	0.390	1
3000	40 (5P5)	<b>CTP12 5P5/3000</b>	2CSG611250R1171	<b>687504</b>	0.390	1
4000	50 (5P5)	<b>CTP12 5P5/4000</b>	2CSG611260R1171	<b>687603</b>	0.390	1

For primary current from two cables (max.  $\varnothing$  50 mm each) or from horizontal bar 80x50 - 100x50 - 125x50 mm

400	4 (5P10)	<b>CTP12 5P10/400</b>	2CSG621150R1171	<b>687702</b>	0.390	1
500	4 (5P10)	<b>CTP12 5P10/500</b>	2CSG621160R1171	<b>687801</b>	0.390	1
600	4 (5P10)	<b>CTP12 5P10/600</b>	2CSG621170R1171	<b>687900</b>	0.390	1
800	6 (5P10)	<b>CTP12 5P10/800</b>	2CSG621180R1171	<b>688006</b>	0.390	1
1000	8 (5P10)	<b>CTP12 5P10/1000</b>	2CSG621190R1171	<b>688105</b>	0.390	1
1200	10 (5P10)	<b>CTP12 5P10/1200</b>	2CSG621200R1171	<b>688204</b>	0.390	1
1500	10 (5P10)	<b>CTP12 5P10/1500</b>	2CSG621220R1171	<b>688303</b>	0.390	1
2000	12 (5P10)	<b>CTP12 5P10/2000</b>	2CSG621230R1171	<b>688402</b>	0.390	1
2500	15 (5P10)	<b>CTP12 5P10/2500</b>	2CSG621240R1171	<b>688501</b>	0.390	1
3000	20 (5P10)	<b>CTP12 5P10/3000</b>	2CSG621250R1171	<b>688600</b>	0.390	1
4000	25 (5P10)	<b>CTP12 5P10/4000</b>	2CSG621260R1171	<b>688709</b>	0.390	1

For primary current from two cables (max.  $\varnothing$  50 mm each) or from horizontal bar 80x50 - 100x50 - 125x50 mm

400	3 (5P15)	<b>CTP12 5P15/400</b>	2CSG631150R1171	<b>688808</b>	0.390	1
500	3 (5P15)	<b>CTP12 5P15/500</b>	2CSG631160R1171	<b>688907</b>	0.390	1
600	3 (5P15)	<b>CTP12 5P15/600</b>	2CSG631170R1171	<b>689003</b>	0.390	1
800	4 (5P15)	<b>CTP12 5P15/800</b>	2CSG631180R1171	<b>689102</b>	0.390	1
1000	6 (5P15)	<b>CTP12 5P15/1000</b>	2CSG631190R1171	<b>689201</b>	0.390	1
1200	6 (5P15)	<b>CTP12 5P15/1200</b>	2CSG631200R1171	<b>689300</b>	0.390	1
1500	6 (5P15)	<b>CTP12 5P15/1500</b>	2CSG631220R1171	<b>689409</b>	0.390	1
2000	8 (5P15)	<b>CTP12 5P15/2000</b>	2CSG631230R1171	<b>689508</b>	0.390	1
2500	10 (5P15)	<b>CTP12 5P15/2500</b>	2CSG631240R1171	<b>689607</b>	0.390	1
3000	15 (5P15)	<b>CTP12 5P15/3000</b>	2CSG631250R1171	<b>689706</b>	0.390	1
4000	15 (5P15)	<b>CTP12 5P15/4000</b>	2CSG631260R1171	<b>689805</b>	0.390	1

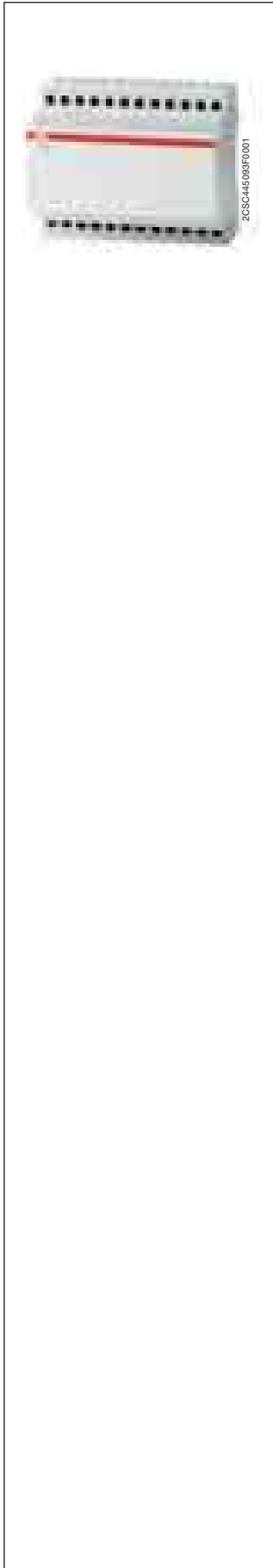


CTP12

Primary rated current I <sub>prim</sub>	Rating power (Precision class)	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
A	VA	Type code	Order code	EAN			kg	pc.

For primary current from two cables (max. ø 50 mm each) or from horizontal bar 80x50 - 100x50 - 125x50 mm

400	2 (5P20)	<b>CTP12 5P20/400</b>	2CSG641150R1171	<b>689904</b>			0.390	1
500	2 (5P20)	<b>CTP12 5P20/500</b>	2CSG641160R1171	<b>690009</b>			0.390	1
600	2 (5P20)	<b>CTP12 5P20/600</b>	2CSG641170R1171	<b>690108</b>			0.390	1
800	3 (5P20)	<b>CTP12 5P20/800</b>	2CSG641180R1171	<b>690207</b>			0.390	1
1000	4 (5P20)	<b>CTP12 5P20/1000</b>	2CSG641190R1171	<b>690306</b>			0.390	1
1200	5 (5P20)	<b>CTP12 5P20/1200</b>	2CSG641200R1171	<b>690405</b>			0.390	1
1500	5 (5P20)	<b>CTP12 5P20/1500</b>	2CSG641220R1171	<b>690504</b>			0.390	1
2000	6 (5P20)	<b>CTP12 5P20/2000</b>	2CSG641230R1171	<b>690603</b>			0.390	1
2500	8 (5P20)	<b>CTP12 5P20/2500</b>	2CSG641240R1171	<b>690702</b>			0.390	1
3000	10 (5P20)	<b>CTP12 5P20/3000</b>	2CSG641250R1171	<b>690801</b>			0.390	1
4000	12 (5P20)	<b>CTP12 5P20/4000</b>	2CSG641260R1171	<b>690900</b>			0.390	1



### Summing current transformers

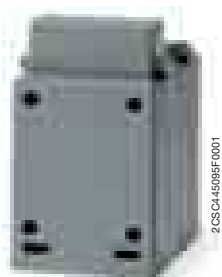
They are used for calculating the vector sum of currents of two or more lines of a single voltage system.

Installation on DIN rail.

The insulation reference voltage is 0.72 kV – 3kV.

#### Summing current transformers.../5 A (6 DIN modules)

Type	Power	Order details	Bbn	Price	Price group	Weight	Pack
	VA	Type code	Order code	1 piece		1 piece	unit
				EAN		kg	pc.
5+5=5A	6	<b>CTSM-5-5</b>	2CSM101010R1181	<b>610403</b>		0.300	1
5+5+5=5A	6	<b>CTSM-5-5-5</b>	2CSM101020R1181	<b>610502</b>		0.300	1
5+5+5+5=5A	6	<b>CTSM-5-5-5-5</b>	2CSM101030R1181	<b>610601</b>		0.300	1



## Voltage transformers

They are used for transforming primary voltages up to 600 V into secondary voltages of.../100 V max. for indirect supply of analogue as well as digital measurement instruments.

### Voltage transformers with self-extinguishing plastic housing, 1 rating

Primary/ secondary voltage	Power	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
V/V	VA	Type code	Order code	EAN			kg	pc.
100/100	3	<b>TV-100/100</b>	2CSG112010R5021	<b>746805</b>			1.000	1
110/100	6	<b>TV-110/100</b>	2CSG112030R5021	<b>610700</b>			1.000	1
115/100	3	<b>TV-115/100</b>	2CSG112050R5021	<b>746904</b>			1.000	1
230/100	6	<b>TV-230/100</b>	2CSG112070R5021	<b>610809</b>			1.000	1
380/100	6	<b>TV-380/100</b>	2CSG112090R5021	<b>610908</b>			1.000	1
400/100	6	<b>TV-400/100</b>	2CSG112110R5021	<b>611004</b>			1.000	1
440/100	3	<b>TV-440/100</b>	2CSG112130R5021	<b>747000</b>			1.000	1
500/100	6	<b>TV-500/100</b>	2CSG112150R5021	<b>611103</b>			1.000	1
100/100-√3	1.5	<b>TV-100R3/100</b>	2CSG111020R5021	<b>747604</b>			1.000	1
110/100-√3	1.5	<b>TV-110R3/100</b>	2CSG111040R5021	<b>747703</b>			1.000	1
115/100-√3	1.5	<b>TV-115R3/100</b>	2CSG111060R5021	<b>747802</b>			1.000	1
230/100-√3	1.5	<b>TV-230R3/100</b>	2CSG111080R5021	<b>747901</b>			1.000	1
380/100-√3	1.5	<b>TV-380R3/100</b>	2CSG111100R5021	<b>748007</b>			1.000	1
400/100-√3	1.5	<b>TV-400R3/100</b>	2CSG111120R5021	<b>748106</b>			1.000	1
440/100-√3	1.5	<b>TV-440R3/100</b>	2CSG111140R5021	<b>748205</b>			1.000	1
500/100-√3	1.5	<b>TV-500R3/100</b>	2CSG111160R5021	<b>748304</b>			1.000	1





Voltage transformers with metallic housing. 0.5 rating

Primary/ secondary voltage	Power	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
V/V	VA	Type code	Order code	EAN			kg	pc.
100/100	10	TV2-100/100	2CSG324010R5021	729808			2.100	1
110/100	10	TV2-110/100	2CSG324030R5021	729907			2.100	1
115/100	10	TV2-115/100	2CSG324050R5021	730002			2.100	1
230/100	10	TV2-230/100	2CSG324070R5021	730101			2.100	1
380/100	10	TV2-380/100	2CSG324090R5021	730200			2.100	1
400/100	10	TV2-400/100	2CSG324110R5021	730309			2.100	1
440/100	10	TV2-440/100	2CSG324130R5021	730408			2.100	1
500/100	10	TV2-500/100	2CSG324150R5021	730507			2.100	1
600/100	10	TV2-600/100	2CSG324170R5021	730606			2.100	1
100/100-√3	5	TV2-100R3/100	2CSG323020R5021	730705			2.100	1
110/100-√3	5	TV2-110R3/100	2CSG323040R5021	730804			2.100	1
115/100-√3	5	TV2-115R3/100	2CSG323060R5021	730903			2.100	1
230/100-√3	5	TV2-230R3/100	2CSG323080R5021	731009			2.100	1
380/100-√3	5	TV2-380R3/100	2CSG323100R5021	731108			2.100	1
400/100-√3	5	TV2-400R3/100	2CSG323120R5021	731207			2.100	1
440/100-√3	5	TV2-440R3/100	2CSG323140R5021	731306			2.100	1
500/100-√3	5	TV2-500R3/100	2CSG323160R5021	731405			2.100	1
600/100-√3	5	TV2-600R3/100	2CSG323180R5021	731504			2.100	1
100/100	20	TV3-100/100	2CSG426010R5021	731603			2.200	1
110/100	20	TV3-110/100	2CSG426030R5021	731702			2.200	1
115/100	20	TV3-115/100	2CSG426050R5021	731801			2.200	1
230/100	20	TV3-230/100	2CSG426070R5021	731900			2.200	1
380/100	20	TV3-380/100	2CSG426090R5021	732006			2.200	1
400/100	20	TV3-400/100	2CSG426110R5021	732105			2.200	1
440/100	20	TV3-440/100	2CSG426130R5021	732204			2.200	1
500/100	20	TV3-500/100	2CSG426150R5021	732303			2.200	1
600/100	20	TV3-600/100	2CSG426170R5021	732402			2.200	1
100/100-√3	10	TV3-100R3/100	2CSG424020R5021	732501			2.200	1
110/100-√3	10	TV3-110R3/100	2CSG424040R5021	732600			2.200	1
115/100-√3	10	TV3-115R3/100	2CSG424060R5021	732709			2.200	1
230/100-√3	10	TV3-230R3/100	2CSG424080R5021	732808			2.200	1
380/100-√3	10	TV3-380R3/100	2CSG424100R5021	732907			2.200	1
400/100-√3	10	TV3-400R3/100	2CSG424120R5021	733003			2.200	1
440/100-√3	10	TV3-440R3/100	2CSG424140R5021	733102			2.200	1
500/100-√3	10	TV3-500R3/100	2CSG424160R5021	733201			2.200	1
600/100-√3	10	TV3-600R3/100	2CSG424180R5021	733300			2.200	1
100/100	50	TV4-100/100	2CSG528010R5021	733409			2.400	1
110/100	50	TV4-110/100	2CSG528030R5021	733508			2.400	1
115/100	50	TV4-115/100	2CSG528050R5021	733607			2.400	1
230/100	50	TV4-230/100	2CSG528070R5021	733706			2.400	1
380/100	50	TV4-380/100	2CSG528090R5021	733805			2.400	1
400/100	50	TV4-400/100	2CSG528110R5021	733904			2.400	1
440/100	50	TV4-440/100	2CSG528130R5021	734000			2.400	1
500/100	50	TV4-500/100	2CSG528150R5021	734109			2.400	1
600/100	50	TV4-600/100	2CSG528170R5021	734208			2.400	1
100/100-√3	25	TV4-100R3/100	2CSG527020R5021	734307			2.400	1
110/100-√3	25	TV4-110R3/100	2CSG527040R5021	734406			2.400	1
115/100-√3	25	TV4-115R3/100	2CSG527060R5021	734505			2.400	1
230/100-√3	25	TV4-230R3/100	2CSG527080R5021	734604			2.400	1
380/100-√3	25	TV4-380R3/100	2CSG527100R5021	734703			2.400	1
400/100-√3	25	TV4-400R3/100	2CSG527120R5021	734802			2.400	1
440/100-√3	25	TV4-440R3/100	2CSG527140R5021	734901			2.400	1
500/100-√3	25	TV4-500R3/100	2CSG527160R5021	735007			2.400	1
600/100-√3	25	TV4-600R3/100	2CSG527180R5021	735106			2.400	1

100/100	100	<b>TV5-100/100</b>	2CSG629010R5021	<b>735205</b>	2.600	1
110/100	100	<b>TV5-110/100</b>	2CSG629030R5021	<b>735304</b>	2.600	1
115/100	100	<b>TV5-115/100</b>	2CSG629050R5021	<b>735403</b>	2.600	1
230/100	100	<b>TV5-230/100</b>	2CSG629070R5021	<b>735502</b>	2.600	1
380/100	100	<b>TV5-380/100</b>	2CSG629090R5021	<b>735601</b>	2.600	1
400/100	100	<b>TV5-400/100</b>	2CSG629110R5021	<b>735700</b>	2.600	1
440/100	100	<b>TV5-440/100</b>	2CSG629130R5021	<b>735809</b>	2.600	1
500/100	100	<b>TV5-500/100</b>	2CSG629150R5021	<b>735908</b>	2.600	1
600/100	100	<b>TV5-600/100</b>	2CSG629170R5021	<b>736004</b>	2.600	1
100/100-√3	50	<b>TV5-100R3/100</b>	2CSG628020R5021	<b>736103</b>	2.600	1
110/100-√3	50	<b>TV5-110R3/100</b>	2CSG628040R5021	<b>736202</b>	2.600	1
115/100-√3	50	<b>TV5-115R3/100</b>	2CSG628060R5021	<b>736301</b>	2.600	1
230/100-√3	50	<b>TV5-230R3/100</b>	2CSG628080R5021	<b>736400</b>	2.600	1
380/100-√3	50	<b>TV5-380R3/100</b>	2CSG628100R5021	<b>736509</b>	2.600	1
400/100-√3	50	<b>TV5-400R3/100</b>	2CSG628120R5021	<b>736608</b>	2.600	1
440/100-√3	50	<b>TV5-440R3/100</b>	2CSG628140R5021	<b>736707</b>	2.600	1
500/100-√3	50	<b>TV5-500R3/100</b>	2CSG628160R5021	<b>736806</b>	2.600	1
600/100-√3	50	<b>TV5-600R3/100</b>	2CSG628180R5021	<b>736905</b>	2.600	1

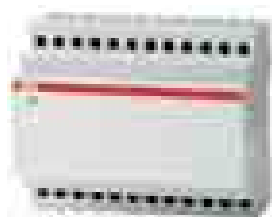
### Current and voltage converters

They produce an output signal in direct current independent from the load that is directly proportional to the input current or voltage signal.

Their electronic circuit guarantees high reliability and accuracy of operation, extension of the measurement field, resistance to temperature changes and to vibrations, limited power absorption from the circuit to be measured.

Thanks to their centralized data acquisition speed, even at high distances, and thanks to the availability of different output types (that can be selected by means of the adjusting minidips) they are appropriate for plants requiring specific attention to production, distribution and use of electric energy.

#### Current converters with a.c. supply. with inputs 1 and 5 V a.c. and selectable outputs 1-5-10 V d.c. and 1-5-10-20-4...20 mA d.c.



Supply	Modules	Order details	Bbn	Price	Price	Weight	Pack
VAC		Type code	Order code	8012542	1 piece	1 piece	unit
				EAN		kg	pc.
24	6	CONV-I-1-24CA	2CSG313000R5031	740902		0.800	1
110	6	CONV-I-1-110CA	2CSG353000R5031	741107		0.800	1
230	6	CONV-I-1-230CA	2CSG373000R5031	741206		0.800	1
24	6	CONV-I-2-24CA	2CSG414000R5031	741305		0.800	1
110	6	CONV-I-2-110CA	2CSG454000R5031	741503		0.800	1
230	6	CONV-I-2-230CA	2CSG474000R5031	741602		0.800	1

#### Current converters with d.c. supply with inputs 1 and 5 V a.c. and selectable outputs 1-5-10 V d.c. and 1-5-10-20-4...20 mA d.c.

Supply	Modules	Order details	Bbn	Price	Price	Weight	Pack
VDC		Type code	Order code	8012542	1 piece	1 piece	unit
				EAN		kg	pc.
24	6	CONV-I-1-24CC	2CSG323000R5031	741701		0.800	1
110	6	CONV-I-1-110CC	2CSG363000R5031	741909		0.800	1
24	6	CONV-I-2-24CC	2CSG424000R5031	742005		0.800	1
110	6	CONV-I-2-110CC	2CSG464000R5031	742203		0.800	1

#### Current converters with a.c. supply. with inputs 120-300-500 V a.c. and selectable outputs 1-5-10 V d.c. and 1-5-10-20-4...20 mA d.c.

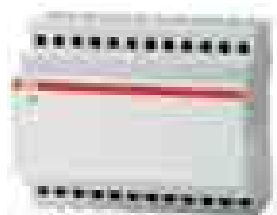
Supply	Modules	Order details	Bbn	Price	Price	Weight	Pack
VAC		Type code	Order code	8012542	1 piece	1 piece	unit
				EAN		kg	pc.
24	6	CONV-V-1-24CA	2CSG111000R5031	739500		0.800	1
110	6	CONV-V-1-110CA	2CSG151000R5031	739708		0.800	1
230	6	CONV-V-1-230CA	2CSG171000R5031	739807		0.800	1
24	6	CONV-V-2-24CA	2CSG212000R5031	739906		0.800	1
110	6	CONV-V-2-110CA	2CSG252000R5031	740100		0.800	1
230	6	CONV-V-2-230CA	2CSG272000R5031	740209		0.800	1

#### Current converters with d.c. supply with inputs 120-300-500 V a.c. and selectable outputs 1-5-10 V d.c. and 1-5-10-20-4...20 mA d.c.

Supply	Modules	Order details	Bbn	Price	Price	Weight	Pack
VDC		Type code	Order code	8012542	1 piece	1 piece	unit
				EAN		kg	pc.
24	6	CONV-V-1-24CC	2CSG121000R5031	740308		0.800	1
48	6	CONV-V-1-48CC	2CSG141000R5031	740407		0.800	1
110	6	CONV-V-1-110CC	2CSG161000R5031	740506		0.800	1
24	6	CONV-V-2-24CC	2CSG222000R5031	740605		0.800	1
48	6	CONV-V-2-48CC	2CSG242000R5031	740704		0.800	1
110	6	CONV-V-2-110CC	2CSG262000R5031	740803		0.800	1

### Transducers for power factor meters

They are necessary for the indirect insertion of analogue power factor meters. They operate with a 230 V or 400 V supply and they are equipped with an electronic programming pushbutton for the selection of the more suitable output out of the eight available outputs (1, 5, 10 V d.c. and 1, 5, 10, 20, 4/20 mA d.c.). They have a galvanic type separation between inputs and outputs.



2CSM4504R0001

Phase	Description	Order details	Bbn	Price	Price group	Weight	Pack unit
		Type code	Order code	8012542	1 piece	1 piece	kg pc.
			EAN				

#### Transducers for power factor meters 230/440 VAC supply

1	(2 wires)	<b>CNV-C-1</b>	2CSM310000R1131	<b>600206</b>		0.400	1
3	balanced without neutral (3 wires)	<b>CNV-C-2</b>	2CSM320000R1131	<b>600305</b>		0.400	1

## Shunts

Shunts have 60 mV and 150 mV voltage and must be used with a maximum load of 0.25  $\Omega$  in combination with measurement instruments in d.c. The included two-pole cable is 1 m long with a section of 1.4 mm<sup>2</sup>, equal to a resistance of 0.026  $\Omega$ .

For an appropriate operation:

- both horizontal and vertical mounting are possible (the horizontal position enables a greater heat consumption)
- the faying surface must be completely used and clean; cover with specific grease after the connection
- screws and bolts must be perfectly tight
- shunts must be sufficiently ventilated; as they are not insulated, it is a good rule to protect them against accidental contacts.



TEPM0289

Rated current A	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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### 60 mV shunts

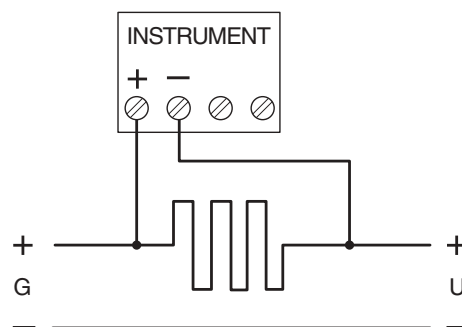
5	<b>SNT 1/5</b>	2CSM100010R1121	<b>047605</b>			1.300	1
6	<b>SNT 1/6</b>	2CSM100020R1121	<b>047704</b>			1.800	1
10	<b>SNT 1/10</b>	2CSM100030R1121	<b>047803</b>			1.800	1
15	<b>SNT 1/15</b>	2CSM100040R1121	<b>047902</b>			1.800	1
20	<b>SNT 1/20</b>	2CSM100050R1121	<b>048008</b>			1.800	1
25	<b>SNT 1/25</b>	2CSM100060R1121	<b>048107</b>			1.800	1
30	<b>SNT 1/30</b>	2CSM100070R1121	<b>048206</b>			1.300	1
40	<b>SNT 1/40</b>	2CSM100080R1121	<b>048305</b>			1.300	1
50	<b>SNT 1/50</b>	2CSM100090R1121	<b>048404</b>			2.200	1
60	<b>SNT 1/60</b>	2CSM100100R1121	<b>048503</b>			2.200	1
80	<b>SNT 1/80</b>	2CSM100110R1121	<b>048602</b>			1.300	1
100	<b>SNT 1/100</b>	2CSM100120R1121	<b>048701</b>			1.300	1
150	<b>SNT 1/150</b>	2CSM100130R1121	<b>048800</b>			1.300	1
200	<b>SNT 1/200</b>	2CSM100140R1121	<b>048909</b>			1.300	1
250	<b>SNT 1/250</b>	2CSM100150R1121	<b>049005</b>			1.900	1
400	<b>SNT 1/400</b>	2CSM100160R1121	<b>049104</b>			1.900	1
500	<b>SNT 1/500</b>	2CSM100170R1121	<b>049203</b>			1.900	1
600	<b>SNT 1/600</b>	2CSM100180R1121	<b>049302</b>			1.900	1
800	<b>SNT 1/800</b>	2CSM100190R1121	<b>049401</b>			2.200	1
1000	<b>SNT 1/1000</b>	2CSM100200R1121	<b>049500</b>			2.000	1
1500	<b>SNT 1/1500</b>	2CSM100210R1121	<b>049609</b>			2.200	1
2000	<b>SNT 1/2000</b>	2CSM100220R1121	<b>049708</b>			2.200	1
2500	<b>SNT 1/2500</b>	2CSM100230R1121	<b>049807</b>			2.200	1
4000	<b>SNT 1/4000</b>	2CSM100240R1121	<b>747109</b>			2.200	1
6000	<b>SNT 1/6000</b>	2CSM100250R1121	<b>747208</b>			2.300	1

## Technical features

<b>Voltage</b>	[mV]	60/150
<b>Current rating</b>	[A]	from 5 to 2500 (on request up to 8000)
<b>Accuracy class</b>		0.5 (from 10 to 30 °C)
<b>Max. load</b>	[ $\Omega$ ]	0.25
<b>Overload for 5 sec.</b>		from 10 to 500 A : 1xIn from 600 to 2000 A: 5xIn at 2500A: 2xIn

150 mV shunts

5	SNT1 1/5	2CSM200010R1121	737001	1.800	1
6	SNT1 1/6	2CSM200020R1121	737100	1.800	1
10	SNT1 1/10	2CSM200030R1121	737209	1.800	1
15	SNT1 1/15	2CSM200040R1121	737308	1.800	1
20	SNT1 1/20	2CSM200050R1121	737407	1.800	1
25	SNT1 1/25	2CSM200060R1121	737506	1.800	1
30	SNT1 1/30	2CSM200070R1121	737605	3.000	1
40	SNT1 1/40	2CSM200080R1121	737704	3.000	1
50	SNT1 1/50	2CSM200090R1121	737803	3.000	1
60	SNT1 1/60	2CSM200100R1121	737902	1.800	1
80	SNT1 1/80	2CSM200110R1121	738008	3.000	1
100	SNT1 1/100	2CSM200120R1121	738107	3.000	1
150	SNT1 1/150	2CSM200130R1121	738206	3.000	1
200	SNT1 1/200	2CSM200140R1121	738305	3.600	1
250	SNT1 1/250	2CSM200150R1121	738404	3.600	1
400	SNT1 1/400	2CSM200160R1121	738503	3.600	1
500	SNT1 1/500	2CSM200170R1121	738602	3.600	1
600	SNT1 1/600	2CSM200180R1121	738701	3.600	1
800	SNT1 1/800	2CSM200190R1121	738800	3.800	1
1000	SNT1 1/1000	2CSM200200R1121	738909	3.800	1





**E 233 electro-mechanical hour counters**

Hour counters are used to record operating times as well as to determine idle times and off times of industrial machinery and plant, for commercial purposes or in domestic installations. No reset functionality.

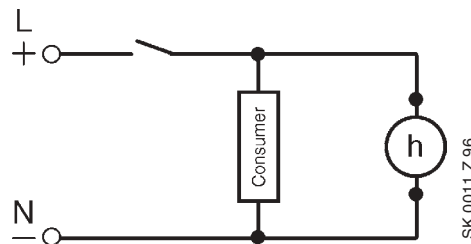
Rated voltage	Order details		Bbn 4012233	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
	Type code	Order code	EAN				
AC 230 V/50 Hz	<b>E 233-230</b>	2CDE100000R1601	<b>63000 4</b>			0.05	10
AC 24 V/50 Hz	<b>E 233-24</b>	2CDE400000R1601	<b>63010 3</b>			0.05	10
DC 12 V ... 48 V	<b>E 233-12/48</b>	2CDE300010R1601	<b>63020 2</b>			0.05	10
AC 240 V/60 Hz	<b>E 233-240/60 Hz*</b>	2CDE100021R1601	<b>36590 1</b> ①			0.05	10
AC 120 V/60 Hz	<b>E 233-120/60 Hz*</b>	2CDE600021R1601	<b>36600 7</b> ①			0.05	10
AC 24 V/60 Hz	<b>E 233- 24/60 Hz*</b>	2CDE400021R1601	<b>36610 6</b> ①			0.05	10

Other rated voltages upon request.

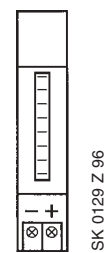
① Bbn No. 40 16779

\* U<sub>i</sub> approval

**Wiring diagram**



elapsed-time meter



E 233-12/48 DC

**Technical features**

	AC equipment	DC equipment
<b>Rated voltage</b>	50 Hz: 24 V, 230 V 60 Hz: 24 V, 120 V, 240 V*	DC 12 V ... 48 V
<b>Voltage tolerance</b>	+ 6% – 10 %	± 10 %
<b>Power consumption</b>	1.5 VA	ca. 20 mW (at 12 V DC)
<b>Ambient temperature</b>	– 15 °C/5 °F... + 50 °C/122 °F	– 10 °C/14 °F ... + 50 °C/122 °F
<b>Counting capacity</b>	100 000 h	100 000 h
<b>Precision class</b>	0.01 h	0.1 h
<b>Operation display</b>	fast running	LED blinking
<b>Protection against electric shock</b>	according to DIN VDE 0106 Part 100 (BGV A2)	according to DIN VDE 0106 Part 100 (BGV A2)
<b>Terminal size</b>	up to 10 mm <sup>2</sup>	up to 10 mm <sup>2</sup>

\* U<sub>i</sub> approval

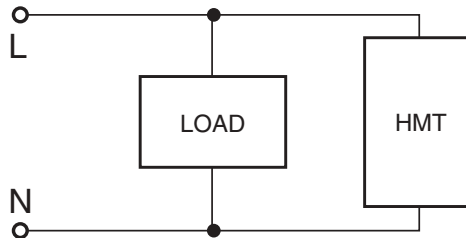


### HMT electro-mechanical hour counters

Equipped with 7-digit indicator (99.999,99) and available in two modules. They cannot be reset.

Rated voltage	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
V AC	Type code	Order code	EAN			kg	pc.
24	HMT 1/24	2CSM111000R1601	030300			0.200	6
110	HMT 1/110	2CSM121000R1601	030409			0.200	6
220	HMT 1/220	2CSM131000R1601	030508			0.200	6
230	HMT 11	2CSM133000R1601	030607			0.200	1

### Wiring diagram



0EPM0071

### Technical features

Rated voltage Un	[V]	a.c. 24 a.c. 110 a.c. 230 d.c. 12...48
Displayed digits (in hours)	[n°]	99999.9 (for HMT1 and HMT11)
Accuracy class	[%]	0.5
Frequency	[Hz]	50
Power consumption	[W]	1.1...2.2
Modules	[n°]	2





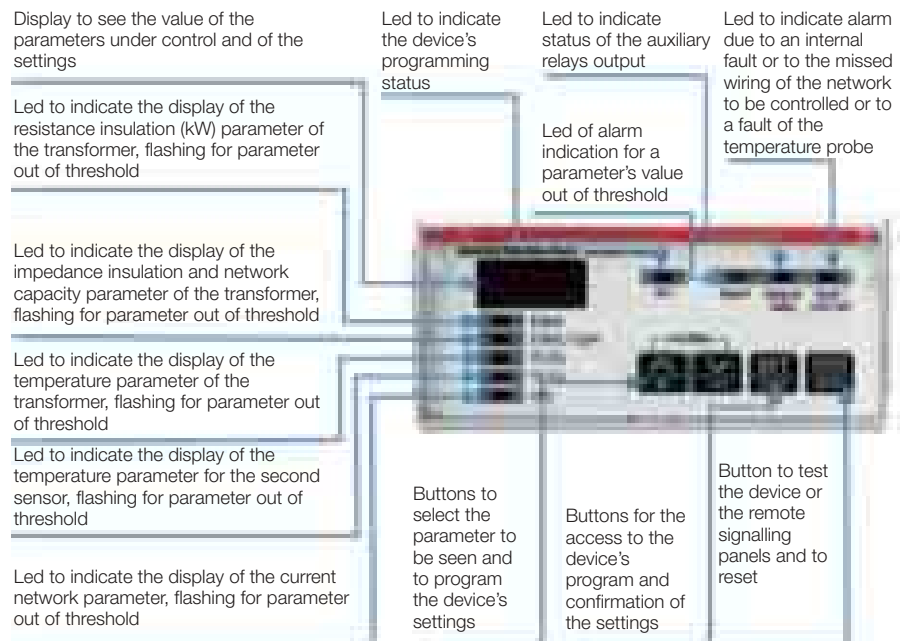
In compliance with IEC 60364 Standard, it is necessary to insulate network electric circuits using insulation transformers in installations intended for environments with special needs. Insulation transformers protect from indirect contacts without breaking the circuit on the first fault to earth.

**Isoltester-DIG-RZ**

The new Isoltester-DIG distinguish themselves for the superiority and the excellence of their constructive and technical features. The way they senses the insulation status of the network is based on a technology on the van in comparison to the traditional insulation tester.

Function	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Packing unit
	Type code	Order code	EAN			kg	pc.
Measuring and control (resistance and impedance) in insulated networks 230 VAC	ISOLTESTER-DIG-RZ	2CSM244000R1501	884507			0.500	1

**Functioning of the frontal operators**



**Technical features**

	<b>ISOLTESTER-DIG-RZ</b>
<b>Rated</b>	110 - 230 V/50-60 Hz
<b>Network voltage to be controlled</b>	24+230 VAC/VDC
<b>Voltage max. measure</b>	24 V
<b>Current max. measure</b>	1 mA
<b>Insulation voltage</b>	2.5 kV/60 sec.
<b>Type of control's signal</b>	Direct component with digital filter
<b>Sensed measures</b>	Sensed measure range 0 ÷ 999 kohm/HIGH - resolution 1 kohm Thermal-probe temperature measure type Rd PT100 at 2 or 3 0+250 °C, accuracy 2% Current measure from external T.A. with secondary 5 A , accuracy 2% (selectable statement value T.A. 1+200) Impedance measure 0 ÷ 999 kohm/HIGH - resolution 1 kohm (test signal 2500 Hz)
<b>Intervention threshold</b>	Low insulation 50 ÷ 500 kohm, accuracy 5%, hysteresis 5%, delay which can be setted Overtemperature 0 +200 °C, accuracy 2% Overload current 1 ÷ 999 A, accuracy 2% Low impedance (which can be disarmed) Link fail device
<b>Available output</b>	Max. up to 2 QSD panels for remote signalling Programmable auxiliary relays output NA-C-NC, 5 A, 250 VAC
<b>Displays</b>	Insulation resistance value with signalling of over fullscale value and direct earth fault Value of measured temperature 0 ÷ 200 °C per channel 1 Value of measured temperature 0 ÷ 200 °C per channel 2 Value of measured current 0 ÷ 999 A Value insulation impedance Setting parameters Link fail Relays output status
<b>Connection</b>	Max. section 2.5 sqmm
<b>Operating temperature</b>	-10 ÷ 60 °C
<b>Storage temperature</b>	-25 ÷ 70 °C, humidity < 90%
<b>Dimensions</b>	6 modules DIN
<b>Weight</b>	0.5 kg
<b>Housing</b>	Plastic self-extinguishing housing for 35 mm Din rail mounting, with transparent sealable plate
<b>Protection degree</b>	IP20
<b>Self-consumption</b>	5 VA
<b>Reference standard</b>	IEC 60364, IEC/EN 61557-8, EN 60255-6, CE



**Selvtester for measurement and testing of insulated networks at 24 VAC/VDC**

It is used to test permanently the insulation status of very low safety voltage circuits (up to 24V).

Function	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Packing unit
	Type code	Order code	EAN			kg	pc.
Measuring and control in insulated networks 24 VAC/VDC	<b>SELVTESTER-24</b>	2CSM211000R1511	<b>884705</b>			0.250	1

**QSD panels for remote signaling for flush mounting on E 503 boxes (already included) for Isoltester-DIG and Selvtester (one per product)**

They are installed in combination with insulation testers, to remotely report the signalling generated by these devices.

Version	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Packing unit
	Type code	Order code	EAN			kg	pc.
For ISOLTESTER-DIG-RZ / PLUS or SELVTESTER-24	<b>QSD-DIG230/24</b>	2CSM310000R1521	<b>884804</b>			0.200	1

**Technical features of Selvtester**

<b>Rated voltage Un</b>	[V]	a.c./d.c. 24
<b>Rated frequency</b>	[Hz]	50-60
<b>Network voltage to be measured</b>	[V]	a.c. 24
<b>Alarm threshold</b>	[kΩ]	adjustable 10...60
<b>Measuring circuit voltage</b>	[V]	<d.c 24
<b>Load management current</b>	[mA]	<1
<b>Rated contact capacity In</b>	[A]	1 (125 V ohmic)
<b>Power consumption</b>	[W]	10
<b>Modules</b>	[n°]	3
<b>Standards</b>		CEI 64-8, CEI 64-4
<b>Green LED</b>		manual opening
<b>Yellow LED</b>		alarm

**Technical features of QSD**

<b>Opening voltage</b>	[V]	24 d.c.
------------------------	-----	---------



### EE MINI-METER electronic single phase energy meters

Highly reliable single-phase meters for measuring active energy; they are ideal for all those applications that do not require certified devices.

Mini Meter allows direct connection and indirect connection through C.T. It is particularly strong and it is equipped with a 4-digit LED display to read energy consumption even in non-lightened environments.

The standard mode reads energy consumption in kWh without decimals, which can be viewed at any time by pressing a pushbutton.

Also EMT meters are suitable for direct connection or indirect connection through C.T. This series is equipped with local reset and analogue/digital microprocessor with 5 channels for current and voltage measurement.

#### Single phase energy meter 230 V for direct and C.T. connection

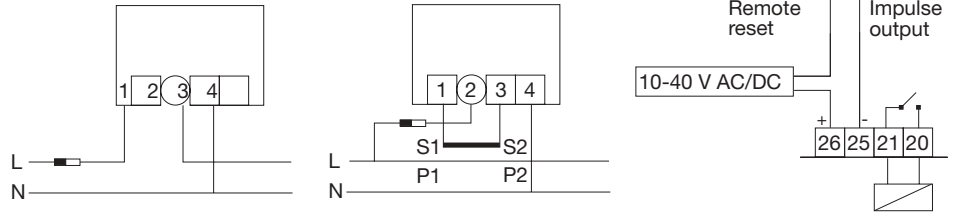
Description	Order details		Bbn 7392696	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN			kg	pc.
Without reset	EE 20	2CMA134565R1000	345651			0.320	1
With local reset	EE 20 R	2CMA134566R1000	345668			0.320	1
Impulsive output 10, 100, 1000; without reset	EE 22	2CMA134567R1000	345675			0.320	1
Impulsive output 10, 100, 1000; with local reset	EE 22 R	2CMA134568R1000	345682			0.320	1
Impulsive output 10, 100, 1000; with local and remote reset	EE 22 Rr	2CMA134569R1000	345699			0.320	1

Description	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code	EAN			kg	pc.
Single phase energy meter (local reset, direct/indirect reading)	EMT	2CSM11300021011	620808			0.320	1

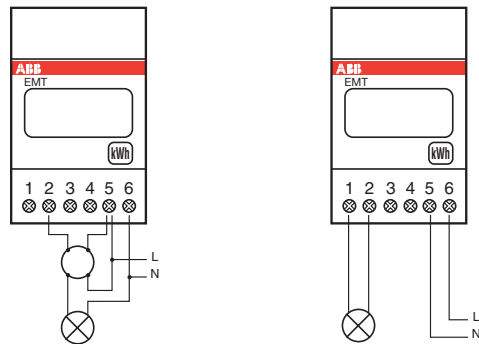
### Technical features

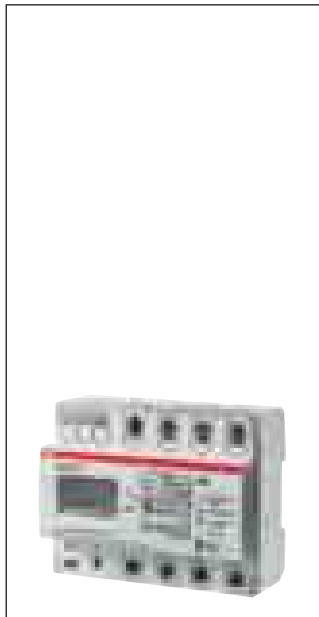
Rated voltage Un	[V]	a.c. 230 ±10% single-phase
Direct insertion current	[A]	up to 32
Indirect insertion current	[A]	through C.T. (by choice) /5 A
Protection fuse	[A]	max. 32
Rated frequency	[Hz]	50/60
Starting current	[mA]	35
Pulse output max frequency		1, 10, 100 alt.; 1000 imp/kWh
Pulse output max current	[mA]	100
Impulse amplitude	[ms]	100
Set transformation ratios		3, 10, 20, 30, 40, 50, 60
Accuracy rating	[%]	2 (for EE)
Data storage		through internal EE PROM
Power consumption	[W]	1.7
Protection degree	[IP]	20
Operating temperature	[°C]	-40 +70 According to IEC 1036
Modules	[No]	3
Standards		IEC 66/110/DIS (1994), IEC 801-2-3-4

EE2 wiring diagrams



EMT wiring diagrams





### ODIN METER electronic three-phase energy meters

Odin Meter is a compact three-phase meter for measuring active energy, designed for mounting on DIN rail, on panel and for flush mounting in distribution switchboard or standard boxes.

It is designed and developed to offer extremely easy application and it is equipped with terminals with transparent scores and strong holding screws for connecting cables and terminal boards, phase bus connectors, easy to read 7-digit display, current direction indicator, clear mounting instructions with text and diagrams on the device.

Odin Meter is a highly reliable and strong meter that maintains the highest measuring accuracy in time.

Odin Meter energy meters are standardized according to the international Standards IEC 61036.

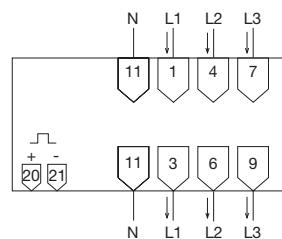
Accuracy class: 2

#### Active energy meter 3x230/400 (three-phase+N)

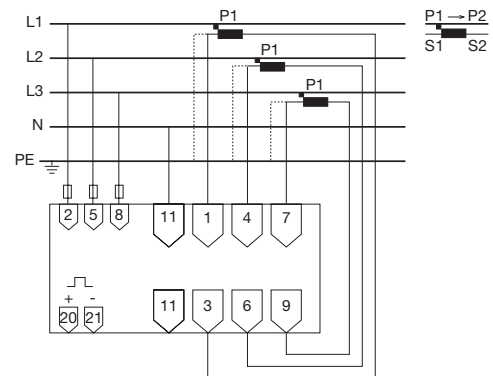
Description	Order details		Bbn 7392696	Price 1 piece	Price group	Weight 1 piece	Pack unit
	Type code	Order code					
direct up to 65A, impulsive output 100Imp./kWh	OD4165	2CMA131024R1000	310246			0.320	1
indirect with AT/5A, impulsive output 100Imp./kWh	OD4110	2CMA131025R1000	310253			0.320	1

### ODIN series wiring diagrams

#### - Direct connection

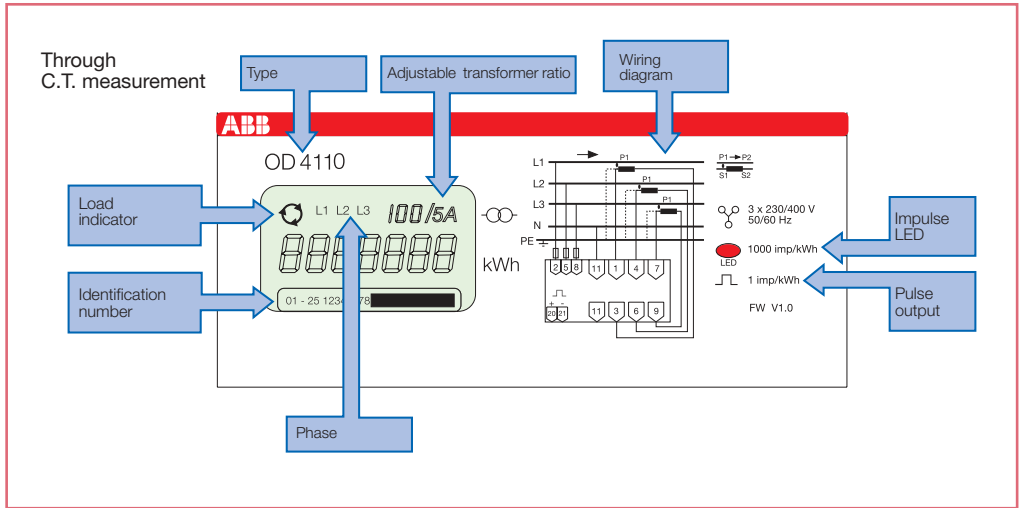
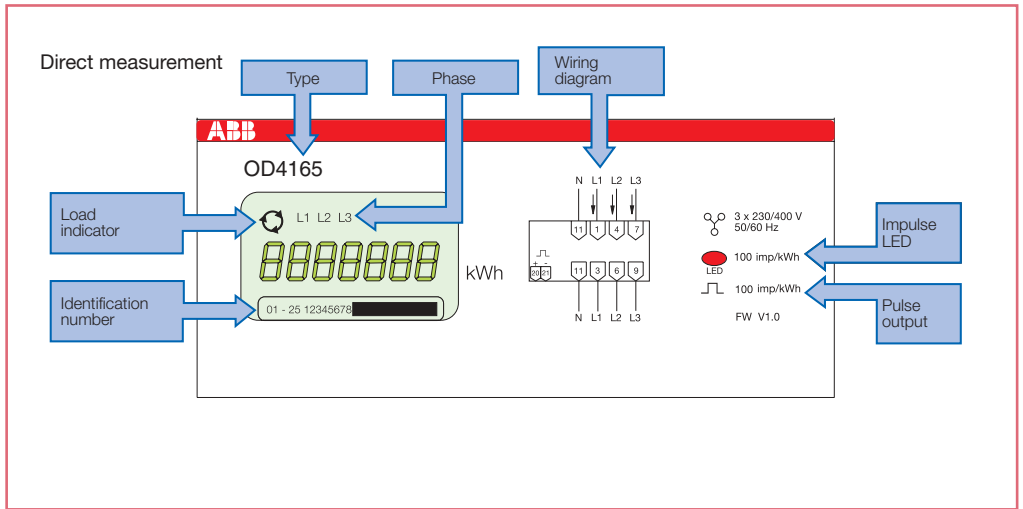


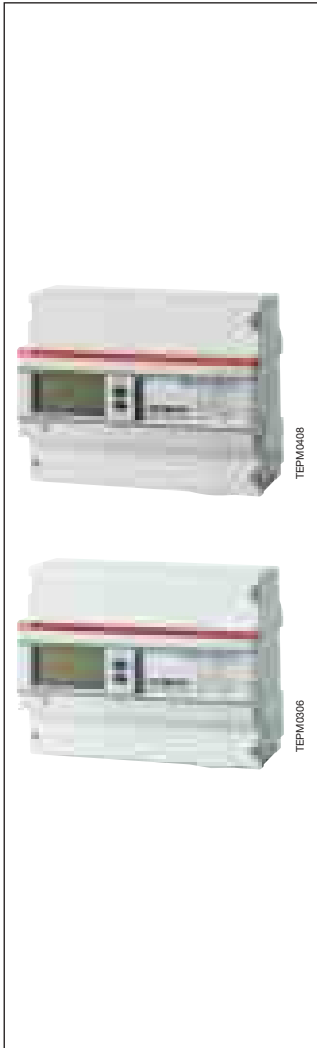
#### - Indirect connection (through C.T.)



### Technical features

	Direct measuring/connection	Connection trough A.T.
<b>Voltage</b>	3x230/400 V (-20% to +15%)	3x230/400 V (-20% to +15%)
<b>Current</b>	65 A	10 A
<b>Frequency</b>	50/60 Hz	50/60 Hz
<b>Selection of insertion currents through C.T.</b>		5/5, 75/5, 100/5, 150/5, 200/5, 250/5, 300/5, 400/5, 500/5, 600/5, 700/5, 750/5, 800/5, 900/5 A
<b>Starting current</b>	25 mA	5 mA
<b>Pulsive output max. voltage</b>	5...40 V	...40 V
<b>Pulsive output max. current</b>	100 mA	100 mA
<b>Accuracy</b>	2 ±2% class	2 ±2% class
<b>Display</b>	7-digit LCD	7-digit LCD
<b>Protection degree</b>	IP 20	IP 20
<b>Operating temperature</b>	-25 + 55 °C	25 + 55 °C
<b>Standards</b>	IEC 61036	IEC 61036





**DELTA METER electronic three-phase energy meters PLUS**

DELTA METER PLUS meters are designed to offer extremely easy and simple application. Suitable for mounting on DIN rail, lightweight and small, they are ideal for the installation on switchboards, feeder

panels and tin boxes. The range includes devices for measuring active energy, reactive energy and the combination of active and reactive energy. All DELTA METER meters are standardized according to the international Standards IEC 1036 (for active energy) and IEC 1268 (for reactive energy), accuracy class 1 and 2 according to the type.

Order details		Bbn	Price	Price	Weight	Pack
Type code	Order code	7392696	1 piece	group	1 piece	unit
		EAN			kg	pc.

**Active energy meter for direct connection up to 80 A, class 2**

3 x 100-500 V AC (3F)	<b>DBB 22 00 0</b>	2CMA180802R1000	<b>808026</b>		0.320	1
3 x 100-500/57-288 V AC (3F+N)	<b>DBB 23 00 0</b>	2CMA180800R1000	<b>808002</b>		0.320	1
3 x 100-500/57-288 V AC (3F+N) + reset	<b>DBB 23 00 0-105</b>	2CMA139101R1000	<b>376181</b>		0.320	1
3 x 100-500/57-288 V AC (3F+N) + act/react	<b>DDB 13 00 0</b>	2CMA180810R1000	<b>808101</b>		0.320	1

**Active energy meter for direct connection through C.T. /5 A, class 2**

3 x 100-500 V AC (3F)	<b>DAB 12 00 0</b>	2CMA180807R1000	<b>808071</b>		0.320	1
3 x 100-500/57-288 V AC (3F+N)	<b>DAB 13 00 0</b>	2CMA180806R1000	<b>808064</b>		0.320	1
3 x 100-500/57-288 V AC (3F+N) + reset	<b>DAB 13 00 0-105</b>	2CMA139102R1000	<b>376143</b>		0.320	1
3 x 100-500/57-288 V AC (3F+N) + act/react	<b>DCB 13 00 0</b>	2CMA180808R1000	<b>808088</b>		0.320	1

**Auxiliary elements/accessories**

Long cover	<b>DELTA/CPL</b>	2CMA132633R1000	<b>326339</b>		0.320	1
DIN rail	<b>DELTA/DIN</b>	2CMA132540R1000	<b>325400</b>		0.320	1
Surface panel	<b>DELTA/FRQ</b>	2CMA132635R1000	<b>325417</b>		0.320	1

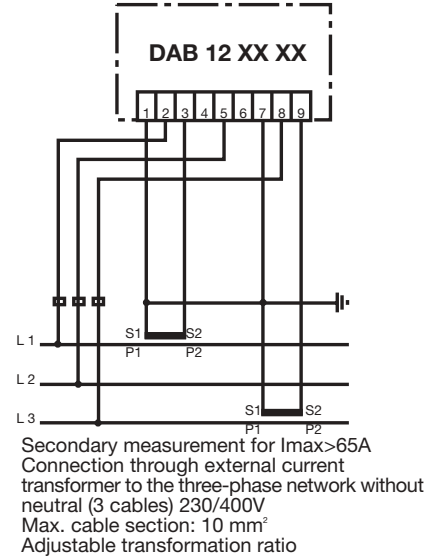
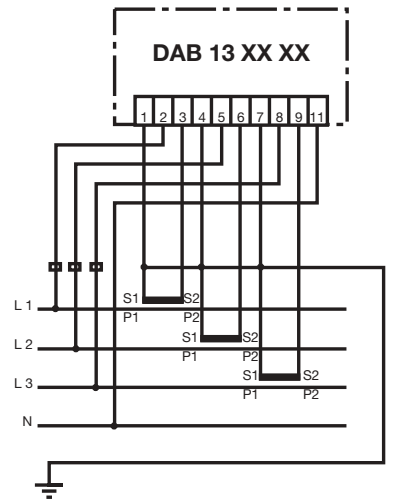
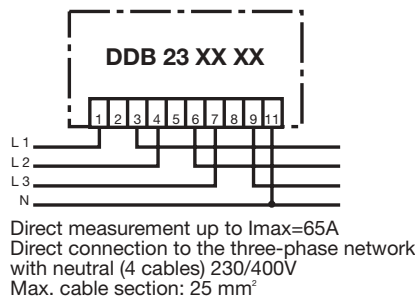
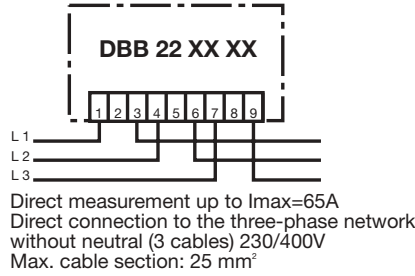
9

**Technical features**

<b>Voltage</b>	[V]	up to 500 V (3F and 3F+N)
<b>Current</b>	[A]	≤80 (direct connection); >80 (indirect connection through C.T.)
<b>Frequency</b>	[Hz]	50/60
<b>Starting current</b>	[mA]	4
<b>Pulse output frequency</b>	[imp/kWh]	100 (direct connection); 1000 (in direct connection through C.T other frequencies available on request)
<b>Impulse amplitude</b>	[ms]	100, basic version
<b>Frequency of blinking of LED and LCD segments</b>	[imp/kWh]	5000, basic version
<b>Pulse output</b>		
-max. current	[mA]	100
-max. voltage	[V a.c./d.c.]	40
-max. cable section	[mm <sup>2</sup> ]	2.5
<b>Accuracy</b>		Class 2
<b>Display</b>		LCD (liquid crystal) with 7 digits, h=7mm
<b>Terminal holder</b>		10 mm <sup>2</sup> (insertion through C.T.); 25 mm <sup>2</sup> (direct insertion)
<b>Protection degree</b>		IP51 (IP20 on the terminal holder without cover)
<b>Operating temperature</b>	[°C]	-25 +70
<b>Power consumption</b>	[W]	1.5
<b>Modules</b>	[No]	7
<b>Standards</b>		IEC 1036 for active energy meters; IEC 1268 for reactive energy meters; DIN 4 for pulse output

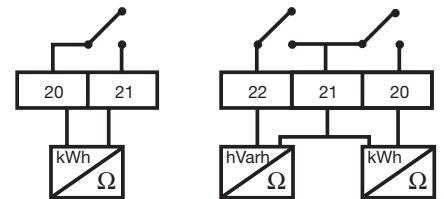


**Wiring diagrams**



**Notes**

For connections through current transformer, C.T. must have 5 A or 1 A secondary and be connected according to correct polarities: P1->P2, S1->S2



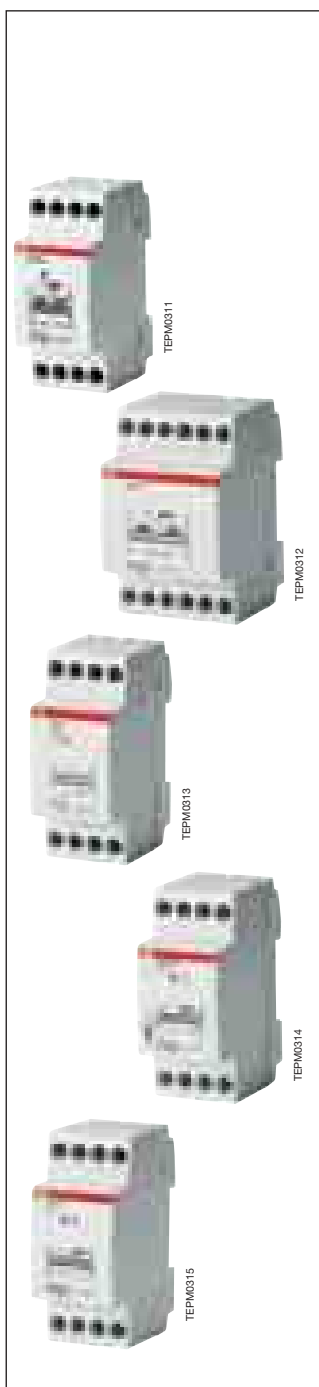
2-pole balanced or 3-pole unbalanced output for sending to a personal computer information from energy meter, encoded as numerical signal. Some types enable to connect an external voltage to control teleset

**Index**

**Selection tables**

TM/TS bell transformers .....	10/2
Bells and buzzers .....	10/4
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M9100 modular housing for CBK pushbuttons .....	10/7





### TM/TS bell transformers

These transformers with secondary in extremely low safety voltage for feeding bells (discontinuous use) are available in 4 series:

- failure-proof (TM series)
- non-inherently short-circuit proof (TS8 series)
- non-inherently short-circuit proof with switch 0-1 (TS8/SW series)
- non-inherently short-circuit proof (TS16/TS24 series).

Secondary rated voltage	Rated power (discontinuous)	Order details	Bbn	Price	Price group	Weight	Pack
V	VA	Type code	Order code	1 piece		1 piece	unit
			Order code	1 piece		kg	pc.

#### TM series failsafe transformers

Secondary rated voltage	Rated power (discontinuous)	Order details	Bbn	Price	Price group	Weight	Pack
V	VA	Type code	Order code	1 piece		kg	pc.
4-8-12	3.33-6.66-10	<b>TM10/12</b>	2CSM101021R0801	<b>367109</b>		0.300	6
12-24	5-10	<b>TM10/24</b>	2CSM101041R0801	<b>367208</b>		0.300	6
4-8-12	5-10	<b>TM15/12</b>	2CSM151021R0801	<b>367307</b>		0.300	6
12-24	7.5-15	<b>TM15/24</b>	2CSM151041R0801	<b>367406</b>		0.300	6
4-8-12	10-20-30	<b>TM30/12</b>	2CSM301021R0801	<b>367505</b>		0.450	4
12-24	15-30	<b>TM30/24</b>	2CSM301041R0801	<b>367604</b>		0.450	4
4-8-12	13-27-40	<b>TM40/12</b>	2CSM401021R0801	<b>367703</b>		0.450	4
12-24	20-40	<b>TM40/24</b>	2CSM401041R0801	<b>367802</b>		0.450	4

#### TS8 series non-inherently short-circuit proof transformers

Secondary rated voltage	Rated power (discontinuous)	Order details	Bbn	Price	Price group	Weight	Pack
V	VA	Type code	Order code	1 piece		kg	pc.
8	8	<b>TS 8/8</b>	2CSM081301R0811	<b>36800 7</b>		0.355	6
12	8	<b>TS 8/12</b>	2CSM081401R0811	<b>36810 6</b>		0.355	6
24	8	<b>TS 8/24</b>	2CSM081501R0811	<b>36820 5</b>		0.355	6

#### TS8 series non-inherently short-circuit proof transformers with switch 0-1

Secondary rated voltage	Rated power (discontinuous)	Order details	Bbn	Price	Price group	Weight	Pack
V	VA	Type code	Order code	1 piece		kg	pc.
8	8	<b>TS 8/8 sw</b>	2CSM081302R0811	<b>36830 4</b>		0.277	6
12	8	<b>TS 8/12 sw</b>	2CSM081402R0811	<b>36840 3</b>		0.277	6
4-6-8	8	<b>TS 8/4-6-8 sw</b>	2CSM081012R0811	<b>36860 1</b>		0.280	6
4-8-12	8	<b>TS 8/4-8-12 sw</b>	2CSM081022R0811	<b>36870 0</b>		0.280	6

#### TS16 series non-inherently short-circuit proof transformers

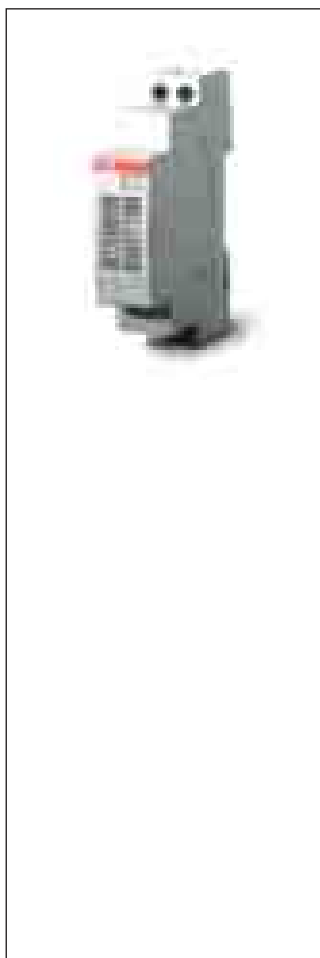
Secondary rated voltage	Rated power (discontinuous)	Order details	Bbn	Price	Price group	Weight	Pack
V	VA	Type code	Order code	1 piece		kg	pc.
8	16	<b>TS 16/8</b>	2CSM061301R0811	<b>36880 9</b>		0.355	6
12	16	<b>TS 16/12</b>	2CSM061401R0811	<b>36890 8</b>		0.355	6
24	16	<b>TS 16/24</b>	2CSM061501R0811	<b>36900 4</b>		0.330	6
4-6-8	16	<b>TS 16/4-6-8</b>	2CSM061011R0811	<b>36910 3</b>		0.333	6
4-8-12	16	<b>TS 16/4-8-12</b>	2CSM061021R0811	<b>36920 2</b>		0.333	6
4-8-12	24	<b>TS 24/4-8-12</b>	2CSM041021R0811	<b>36930 1</b>		0.465	4
8-12-24	24	<b>TS 24/8-12-24</b>	2CSM041031R0811	<b>36940 0</b>		0.465	4

### Technical features

Primary rated voltage $U_n$	[V]	a.c. 230
Secondary rated voltage $U_n$	[V]	4, 6, 8, 12, 24
Rated frequency	[Hz]	50/60
Rated power	[VA]	8, 10, 15, 16, 24, 30, 40 (discontinuous use)
Modules	[n°]	2, 3
Standards		IEC/EN 61558-2-8

**Wiring diagram and marking information**

<p><b>TM10/12</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TM10/24</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS8/8</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS8/8 SW</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS16/8</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS24/4-8-12</b></p> <p>~ 50Hz 230V 5</p> <p><math>t_a</math> 40°C/B</p>	
<p><b>TM15/12</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TM15/24</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS8/12</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS8/12 SW</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS16/12</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS24/8-12-24</b></p> <p>~ 50Hz 230V 5</p> <p><math>t_a</math> 40°C/B</p>	
<p><b>TM30/12</b></p> <p>~ 50Hz 230V 5</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TM30/24</b></p> <p>~ 50Hz 230V 5</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS8/24</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS8/4-6-8 SW</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS16/24</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>		
<p><b>TM40/12</b></p> <p>~ 50Hz 230V 5</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TM40/24</b></p> <p>~ 50Hz 230V 5</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS8/4-8-12 SW</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>	<p><b>TS16/4-6-8</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>			
				<p><b>TS16/4-8-12</b></p> <p>~ 50Hz 230V 4</p> <p><math>t_a</math> 40°C/B</p>		



### Bells and buzzers

Characterized by discontinuous use through one or more pushbuttons, bells and buzzers are suitable for public and tertiary acoustic signalling.

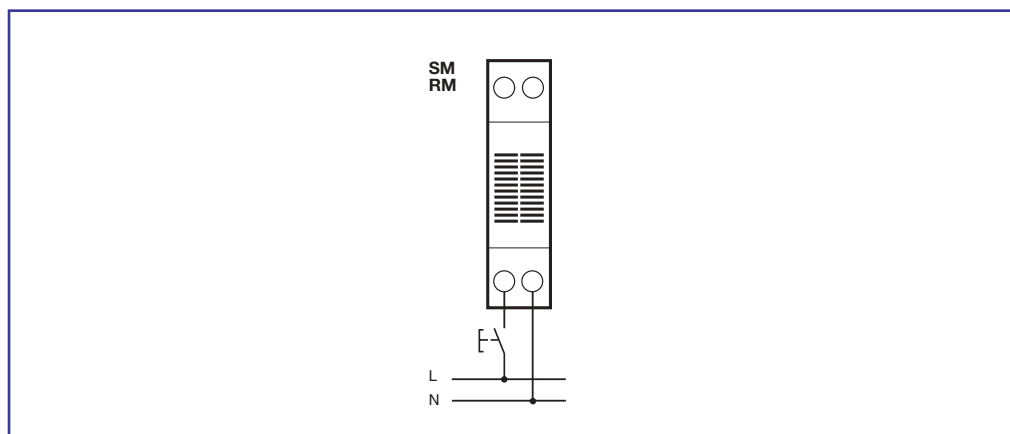
Rated voltage V AC	Order details Type code	Order code	Bbn 8012542 EAN	Price 1 piece	Price group	Weight 1 piece kg	Pack unit pc.
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#### SM-1 electro-mechanical modular bells in 1 module (intermittent use)

12	<b>SM1-12</b>	2CSM111000R0821	<b>886204</b>			0.076	12
230	<b>SM1-230</b>	2CSM131000R0821	<b>886303</b>			0.076	12

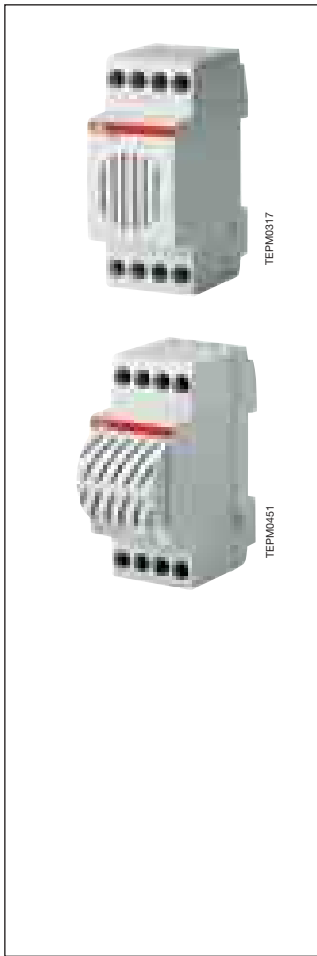
#### SM-2 electro-mechanical modular bells in 1 module (continuous use)

12	<b>SM2-12</b>	2CSM112000R0821	<b>886600</b>			0.076	12
24	<b>SM2-24</b>	2CSM122000R0821	<b>886709</b>			0.076	12
230	<b>SM2-230</b>	2CSM132000R0821	<b>886808</b>			0.076	12



### Technical features

Rated voltage $U_n$	[V]	12, 230
Rated frequency	[Hz]	50
Power consumption	[W]	3.6 (12 V) ; 5.5 (230 V); 6 (24 V)
Modules	[n°]	1, 2
Approvals		IMQ (for TSR)



**RM-1 modular buzzers in 1 module (intermittent use)**

12	<b>RM1-12</b>	2CSM211000R0821	<b>886419</b>	0.076	12
230	<b>RM1-230</b>	2CSM231000R0821	<b>886518</b>	0.076	12

**RM-2 modular buzzers in 1 module (continuous use)**

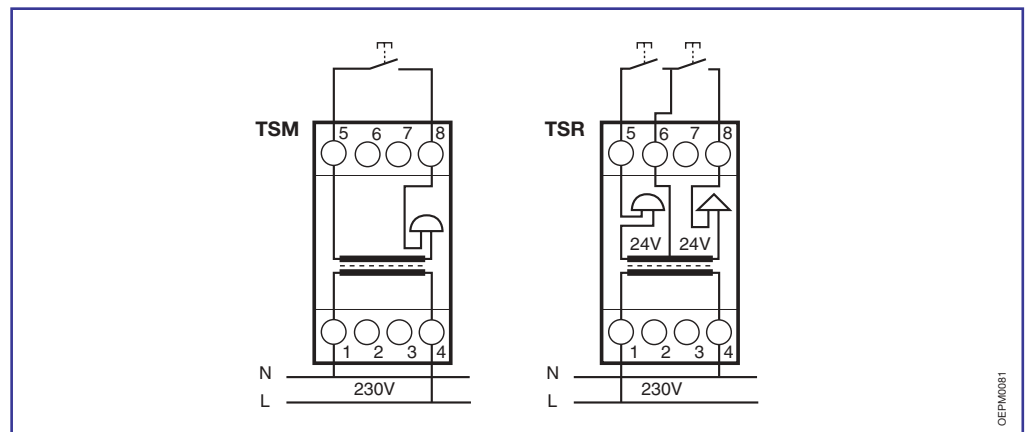
12	<b>RM2-12</b>	2CSM212000R0821	<b>886907</b>	0.076	12
24	<b>RM2-24</b>	2CSM222000R0821	<b>887003</b>	0.076	12
230	<b>RM2-230</b>	2CSM232000R0821	<b>887102</b>	0.076	12

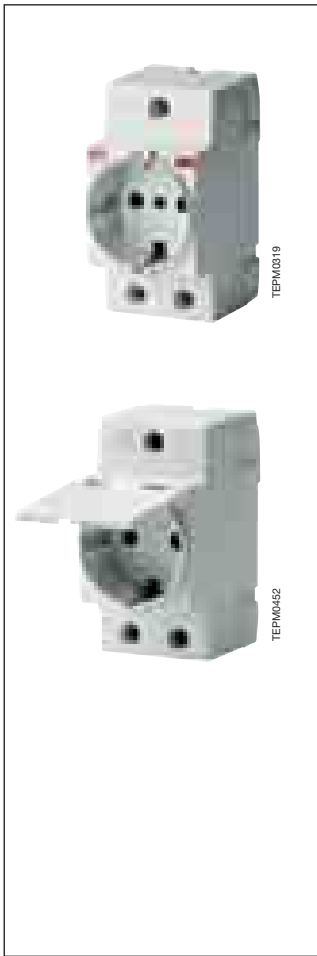
**TSM modular electronic bell + 10 VA transformer (two-tones), 2 modules**

12	<b>TSM</b>	2CSM100000R0841	<b>007005</b>	0.300	6
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**TSR bell + buzzer + transformer, 2 modules**

24	<b>TSR</b>	2CSM100000R0831	<b>369608</b>	0.300	1
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### Modular sockets

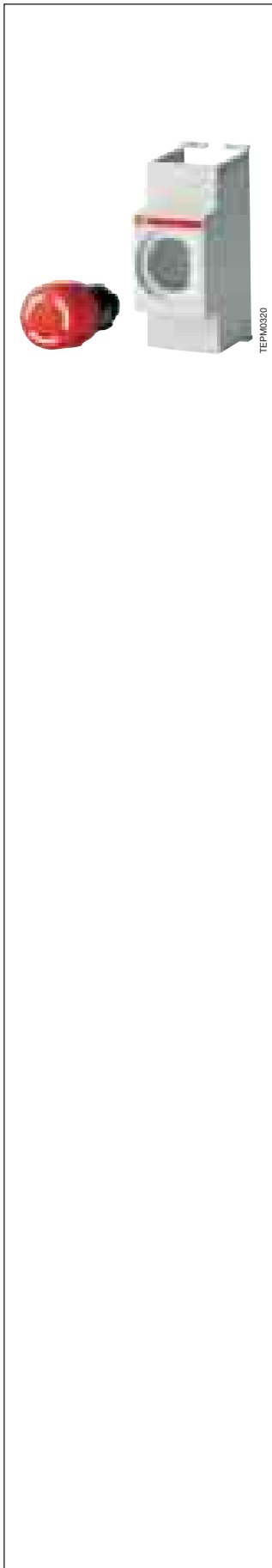
Available in the versions M1173 Italian type, M1174 French type, E1175 Schuko type, these sockets allow the connection of mobile devices, tools or electric and electronic non-modular equipments directly inside civil and industrial switchboards.

Rated current	Standard	Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
A		Type code	Order code	EAN			kg	pc.
10/16	Italian	<b>M1173</b>	2CSM110000R0701	<b>004103</b>			0.200	4
10	French	<b>M1174</b>	2CSM110000R0711	<b>006602</b>			0.200	4
10/16	Schuko	<b>E1175</b>	2CSM110000R0721	<b>334705</b>			0.200	4
10/16	Schuko*	<b>E1175-C</b>	2CSM111000R0721	<b>342502</b>			0.200	4

\*With cover

### Technical features

Rated voltage $U_n$	[V]	a.c. up to 250
Rated current $I_n$	[A]	10...16
Rated frequency	[Hz]	50/60
Power consumption	[W]	0.6
Modules	[n°]	2.5
Standards		DIN VDE 0620; IEC 884-1; NF C61-303



**M9100 modular housing for CBK pushbuttons**

Through an appropriate kit, this housing makes control and signalling units ø 22 CBK series for industrial use (pushbuttons, indicators, selectors, etc.) uniform to modular devices according to DIN rail.

**Kit for modular housing (2 modules)**

Order details		Bbn 8012542	Price 1 piece	Price group	Weight 1 piece	Pack unit
Type code	Order code	EAN			kg	pc.
<b>M9100</b>	2CSM100000R2001	<b>058403</b>			0.050	5



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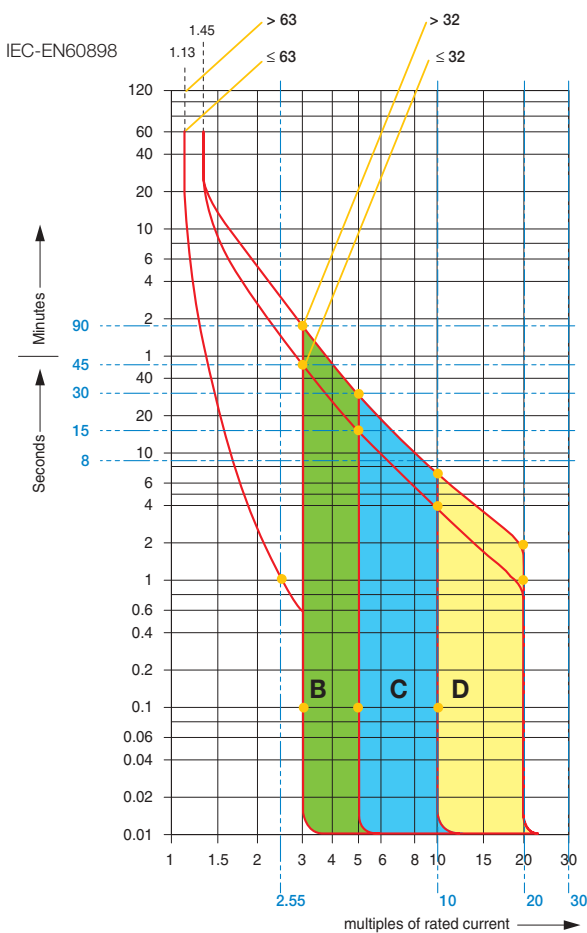
**Tripping characteristics**

Acc. to	Tripping characteristic and rated current	Thermal release ②		Tripping time	Electromagnetic release ①		Tripping time
		Current: conventional non-tripping c.	conventional tripping c.		Currents: hold current surges	trip at least at	
IEC/EN 60898	<b>B</b> 6 to 63 A	$1.13 \cdot I_n$	$1.45 \cdot I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	$3 \cdot I_n$	$5 \cdot I_n$	$> 0.1 \text{ s}$ $< 0.1 \text{ s}$
	<b>C</b> 0.5 to 63 A	$1.13 \cdot I_n$	$1.45 \cdot I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	$5 \cdot I_n$	$10 \cdot I_n$	$> 0.1 \text{ s}$ $< 0.1 \text{ s}$
	<b>D</b> 0.5 to 63 A	$1.13 \cdot I_n$	$1.45 \cdot I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	$10 \cdot I_n$	$20 \cdot I_n$	$> 0.1 \text{ s}$ $< 0.1 \text{ s}$
DIN VDE 0660/9.82	<b>K</b> 0.5 to 63 A	$1.05 \cdot I_n$	$1.2 \cdot I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	not applicable		
IEC/EN 60947-2 DIN VDE 0660 8/69 Part 101		$1.05 \cdot I_n$	$1.2 \cdot I_n$	$> 2 \text{ h}$ $< 1 \text{ h}$ ③ $< 2 \text{ min.}$ ③ $> 2 \text{ s (T1)}$	$10 \cdot I_n$	$14 \cdot I_n$	$> 0.2 \text{ s}$ $< 0.2 \text{ s}$
DIN VDE 0660/9.82	<b>Z</b> 0.5 to 63 A	$1.05 \cdot I_n$	$1.2 \cdot I_n$	$> 1 \text{ h}$ $< 1 \text{ h}$	not applicable		
IEC/EN 60947-2 DIN VDE 0660 8/69 Part 101		$1.05 \cdot I_n$	$1.2 \cdot I_n$	$> 2 \text{ h}$ $< 1 \text{ h}$ ③ $< 2 \text{ min.}$ ③ $> 2 \text{ s (T1)}$	$2 \cdot I_n$	$3 \cdot I_n$	$> 0.2 \text{ s}$ $< 0.2 \text{ s}$

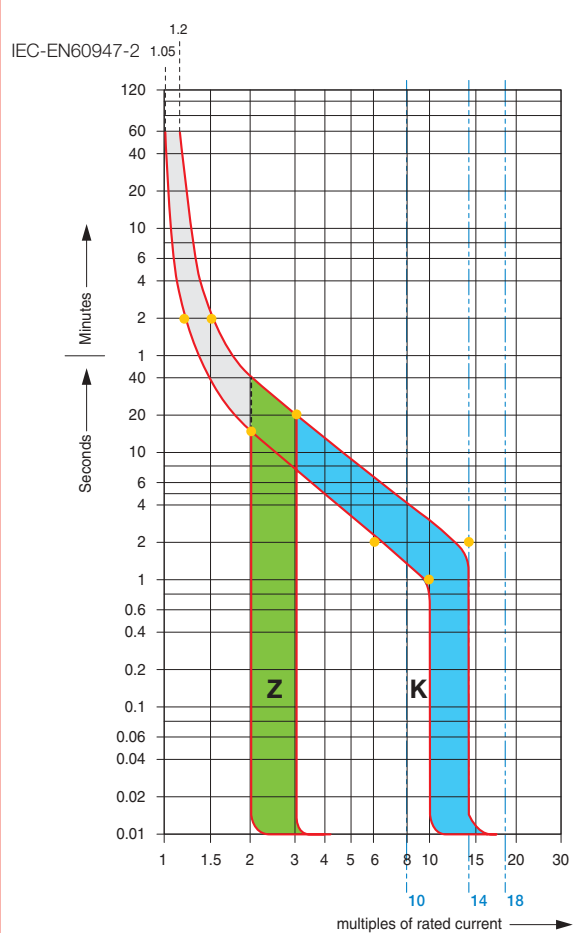
① The indicated tripping values of electromagnetic tripping devices apply to a frequency range of 16 2/3...60 Hz. In the case of diverging frequencies or direct current, see paragraph "Variation of tripping threshold of MCBs, according to network frequency" (page 6/7)

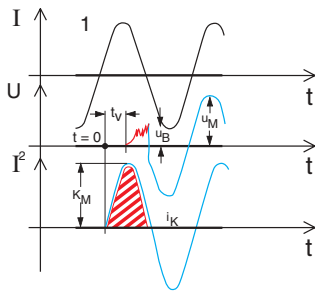
② The thermal releases are calibrated to a nominal reference ambient temperature; for Z and K, the value is 20 °C, for B and C = 30 °C. In the case of higher ambient temperatures, the current values fall by ca. 6 % for each 10 K temperature rise.  
③ As from operating temperature (after  $I_1 > 1 \text{ h}$  or, as applicable, 2 h).

**Characteristics B, C, D**



**Characteristics K, Z**

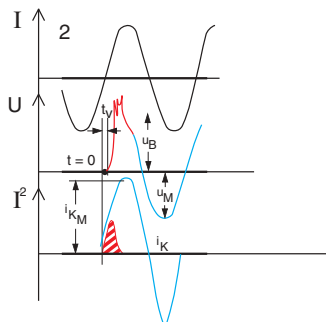




Non-current limiting circuit-breaker

Oscilloscope of short-circuit breaks on two circuit-breakers:

- 1** = traditional non-current limiting circuit-breaker
- 2** = current limiting circuit-breaker
- u<sub>B</sub>** = arc voltage (red)
- u<sub>M</sub>** = rest voltage (blue)



Current limiting circuit-breaker

**Short-circuit current**

- red** = effective short-circuit current squared
- blue** = estimated short-circuit current squared (shunted circuit-breaker)
- i<sub>kM</sub>** = maximum values of symmetrical component of short-circuit current squared
- shaded in red** = specific let-through energy in two cases

**Limitation of specific let-through energy**

Tripping of an installation circuit by circuit-breaker when there is a short-circuit requires a certain amount of time depending on the characteristics of the circuit-breaker and the entity of the short-circuit current. During this period of time, some or all of the short-circuit current flows into the installation; the parameter I<sup>2</sup>t defines the “specific let-through energy”, ie. the specific energy that the breaker allows through when there is a short-circuit current I<sub>cc</sub> during the tripping time t.

In this way, we can determine the capacity of a circuit-breaker to limit, ie. break high currents up to the rated breaking power of the device, by reducing the peak value of the above-mentioned currents to a value which is considerably lower than the estimated current.

This can be achieved using mechanisms which open very rapidly and have the following advantages:

- they limit the thermal and dynamic effects both on the circuit-breaker and on the protected circuit;
- they reduce the dimensions of the current-limiting circuit-breaker without reducing breaking capacity;
- they considerably reduce ionized gases and sparklers emitted during the short-circuit and therefore they avoid the danger of ignition and fires.

I<sub>rms</sub> = perspective symmetrical short-circuit current

**Max. withstanding specific let-through energy of cables**

Section mm <sup>2</sup>	PVC	EPR	HEPR
50	33,062,500	39,062,500	51,122,500
35	16,200,625	19,140,625	25,050,025
25	8,265,625	9,765,625	12,780,625
16	3,385,600	4,000,000	5,234,944
10	1,322,500	1,562,500	2,044,900
6	476,100	562,500	736,164
4	211,600	250,000	327,184
2.5	82,656	97,656	127,806
1.5	29,756	35,156	46,010

The selection of the cables depends both from the breakers' specific let-through energy and from carrying capacity and voltage drop of the line.

Data of the previous table are referred to the following cables:

PVC	EPR	HEPR
FM9	H07RN-F	N07G9-K
FM9OZ1		FTG10OM1
N07V-K		RG7OR
FROR		FG7OM1
		FG7OR

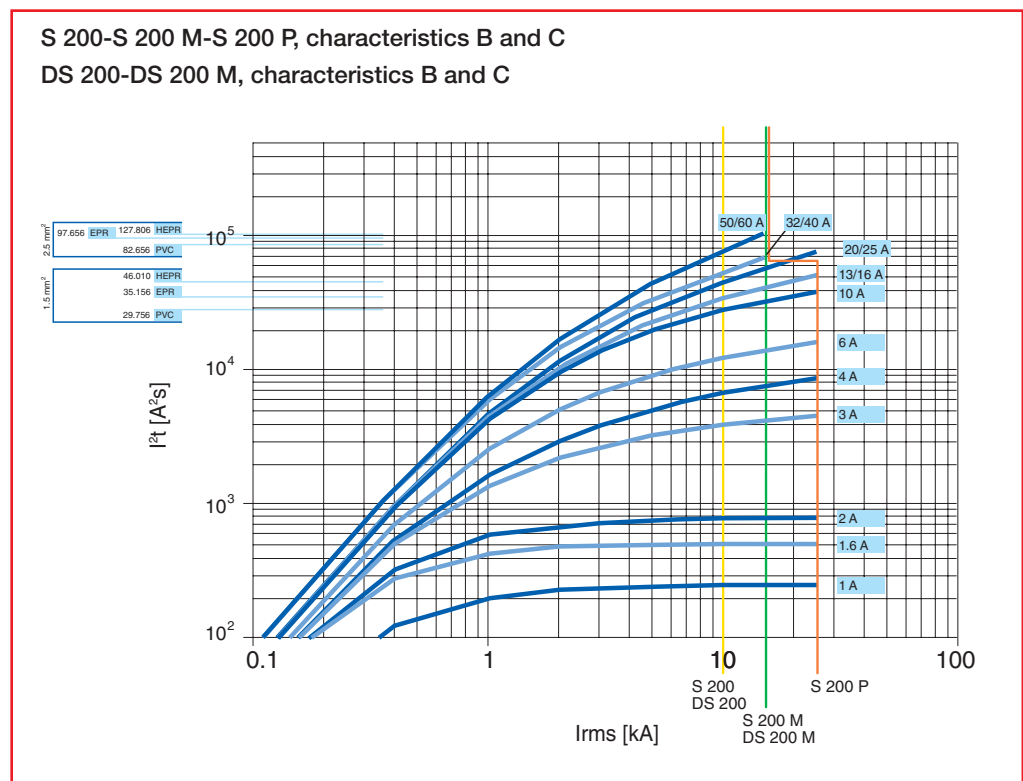
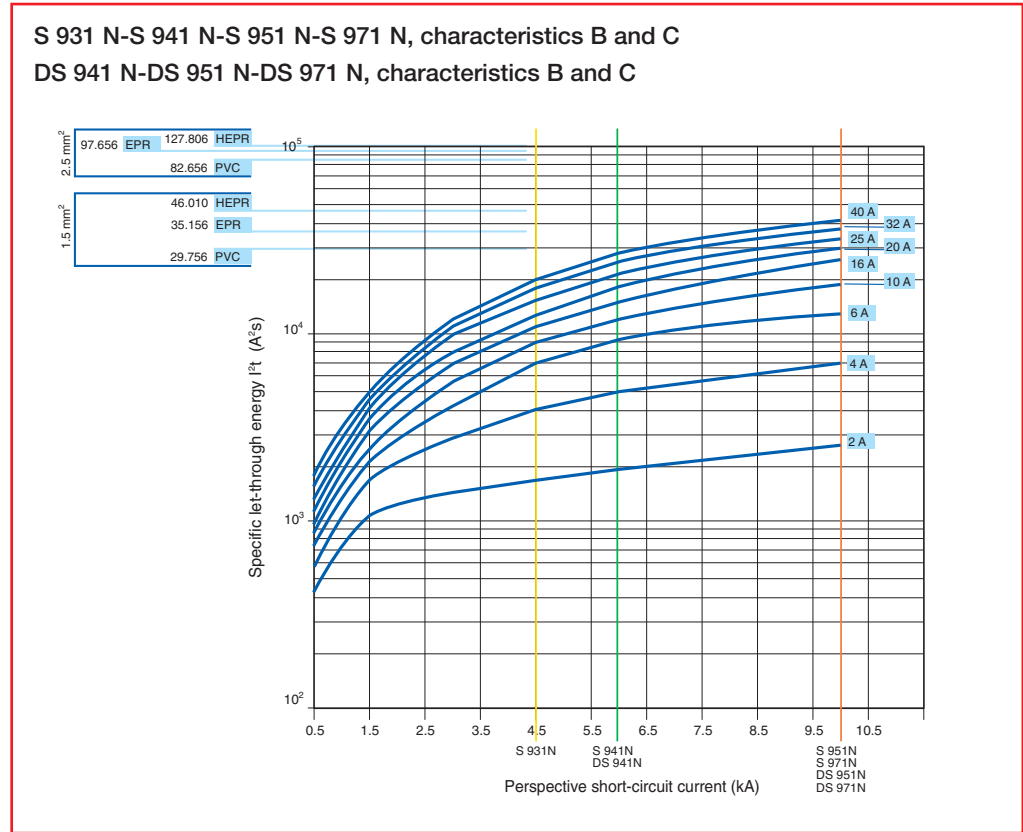
**Designation**

<b>Cable's reference to the standards</b>	harmonized	<b>H</b>
	national cable recognized by CENELC	<b>A</b>
<b>Rated voltage U<sub>0</sub>/U</b>	100/100 ≤ U <sub>0</sub> /U < 300/300	<b>01</b>
	300/300 V	<b>03</b>
	300/500 V	<b>05</b>
	450/750 V	<b>07</b>
	750/1000 V	<b>1</b>
<b>Insulating materials and non-metallic sheath</b>	ethylene-vinylacetate	<b>G</b>
	mineral	<b>M</b>
	polyvinyl chloride	<b>V</b>
<b>Conductor's shape</b>	flexible conductor of a cable for fixed installation	<b>K</b>

Some cables on the market are identified with different names according with the designation UNEL 35011.

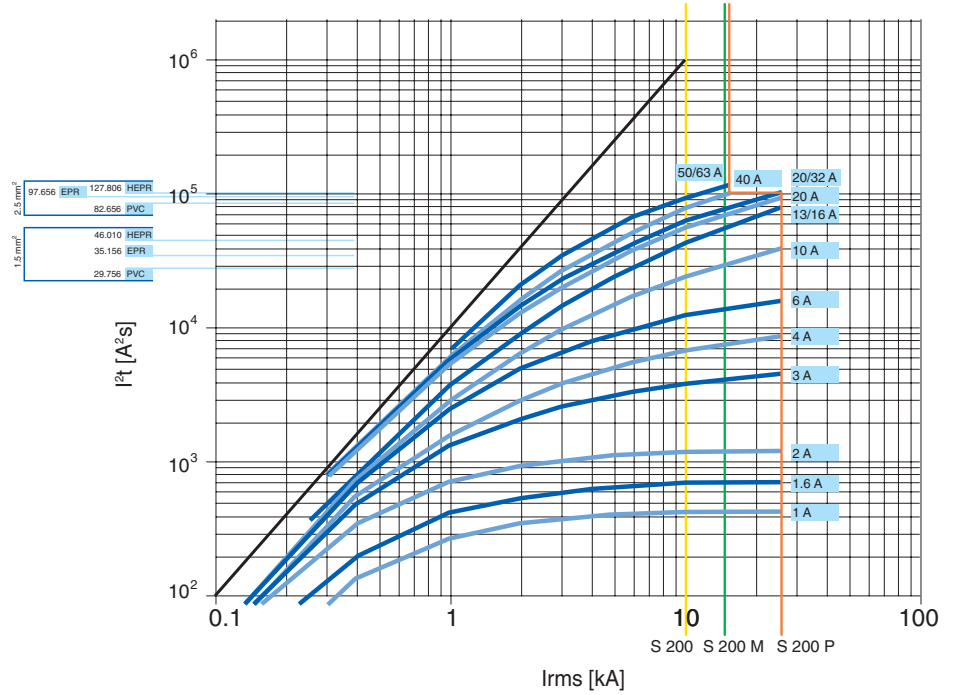
**$I^2t$  diagrams - Specific let-through energy value  $I^2t$**

The  $I^2t$  curves give the values of the specific let-through energy expressed in  $A^2s$  (A=amps; s=seconds) in relation to the perspective short-circuit current ( $I_{rms}$ ) in kA.

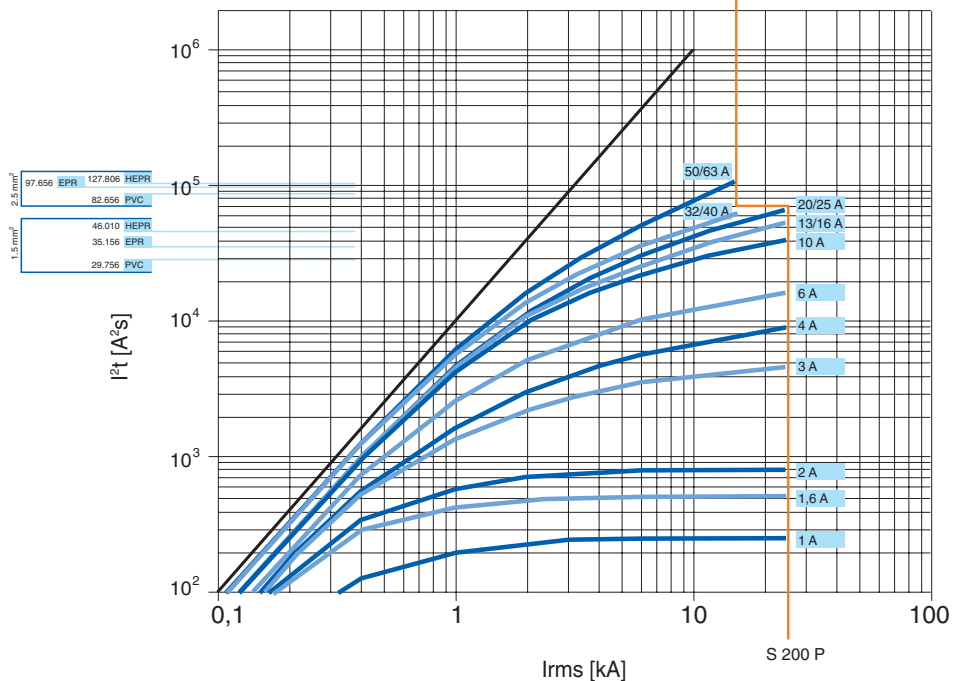


For further information about the selection of the cable, please look at the table in page 11/3

S 200-S 200 M-S 200 P, characteristics D-K

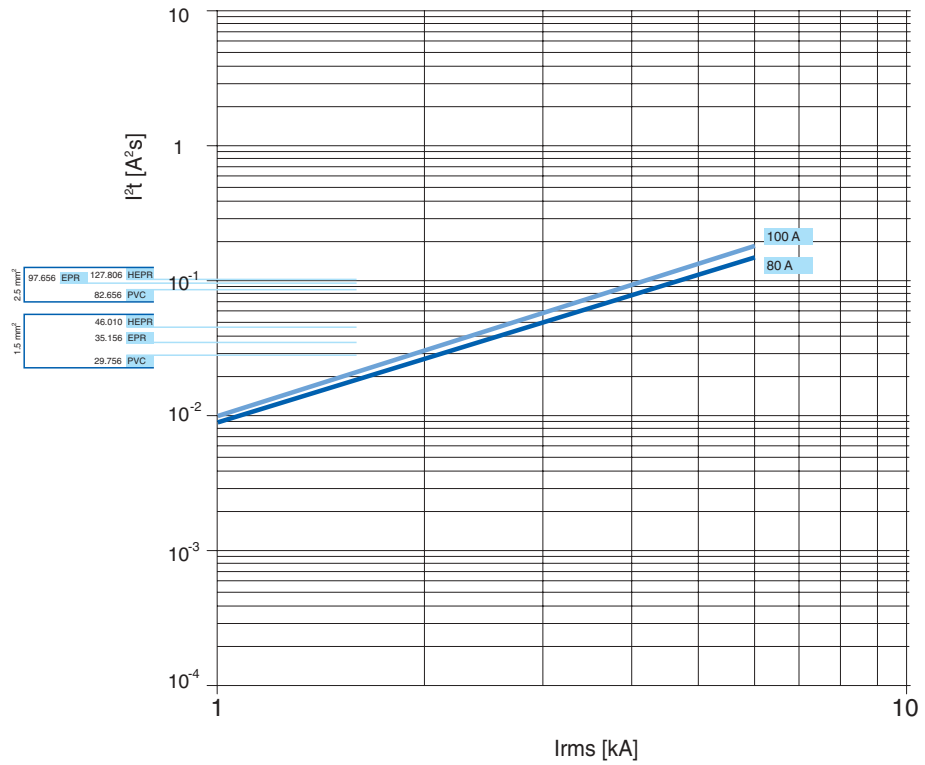


S 200 P, characteristic Z

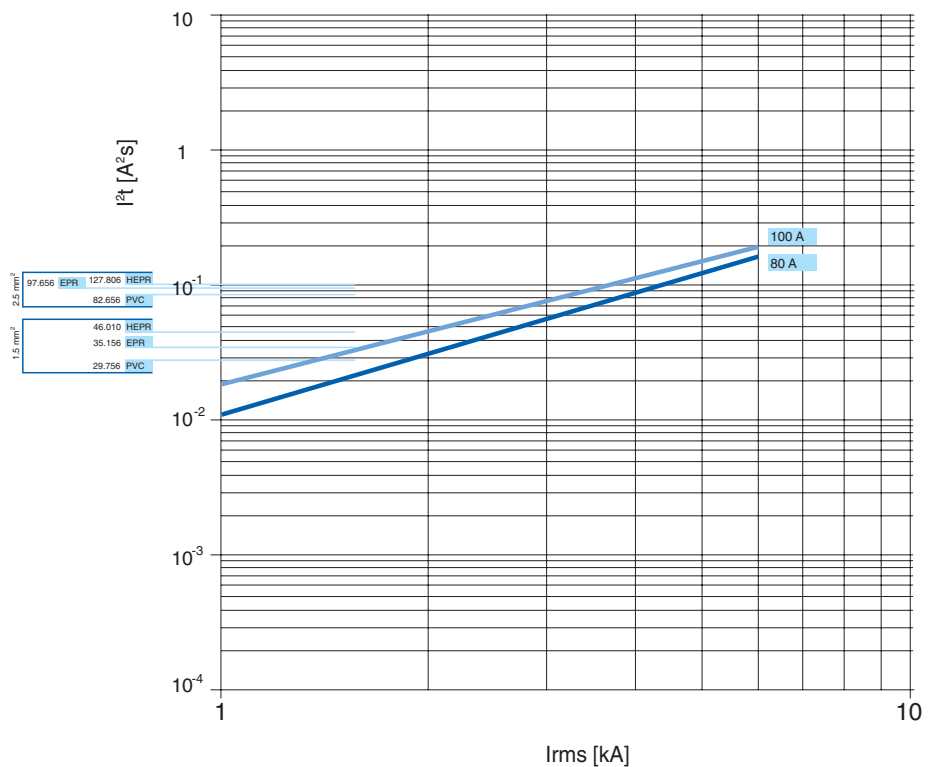


For further information about the selection of the cable, please look at the table in page 11/3

S 280 80-100 A, characteristic B

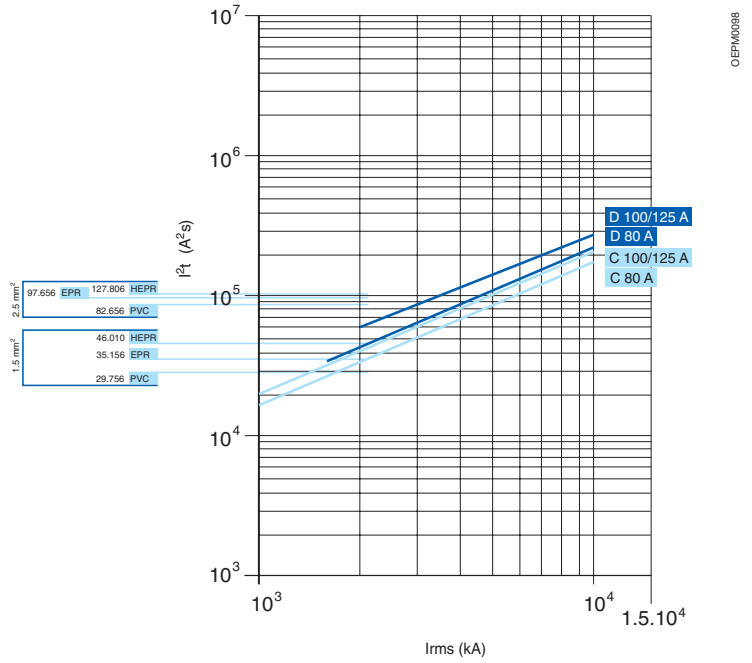


S 280 80-100 A, characteristic C

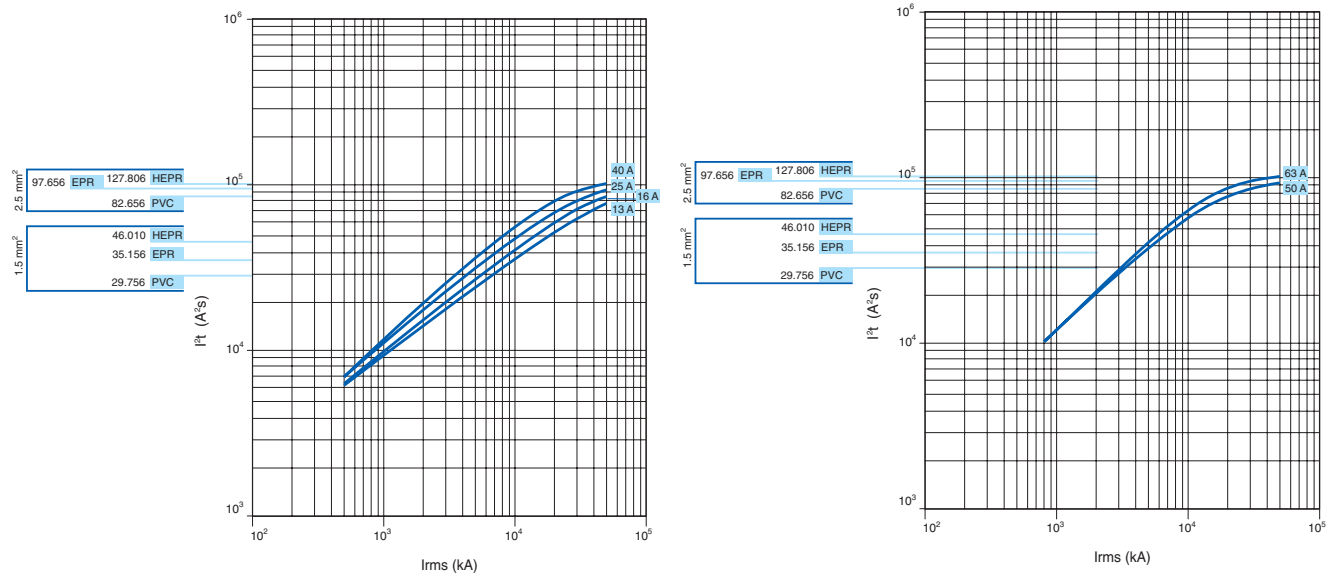


For further information about the selection of the cable, please look at the table in page 11/3

S 290 characteristics C, D



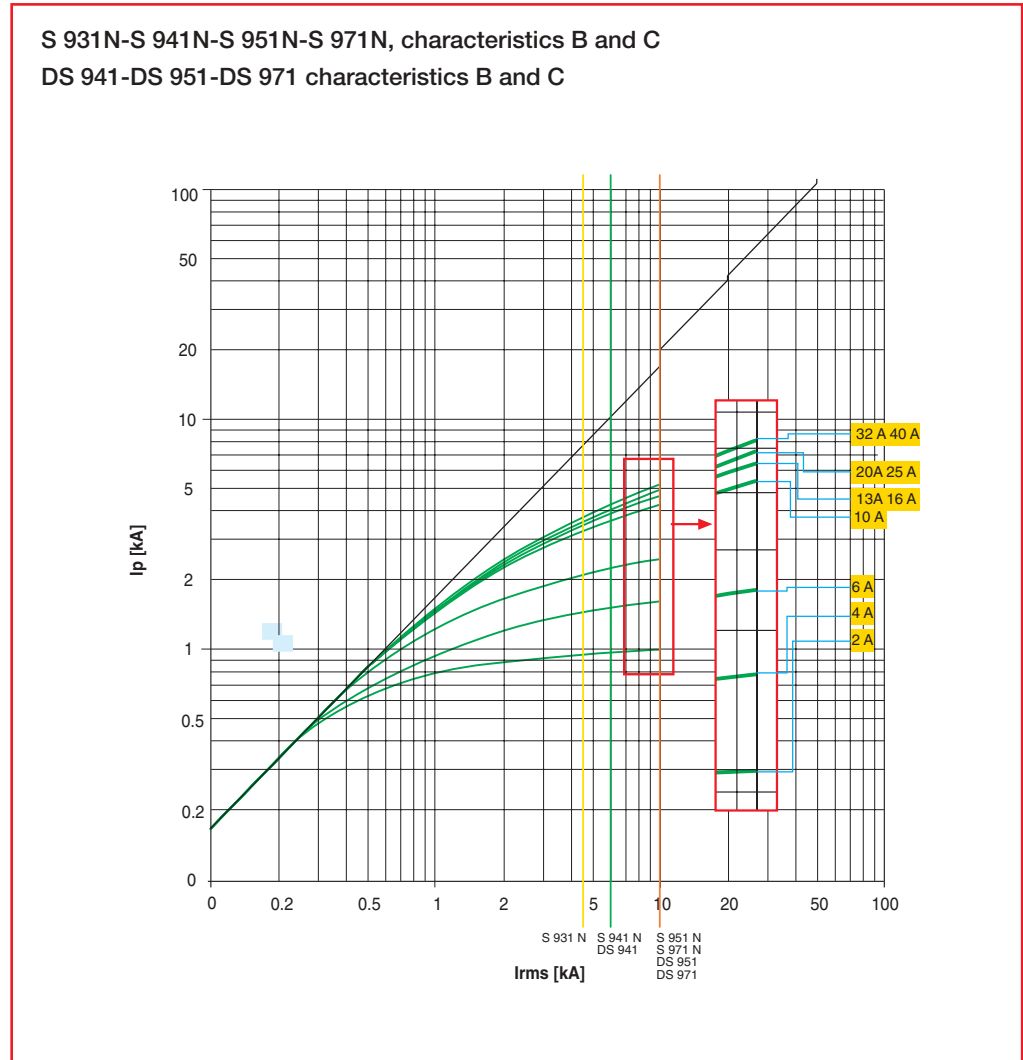
S 500 characteristics B, C and D



For further information about the selection of the cable, please look at the table in page 11/3

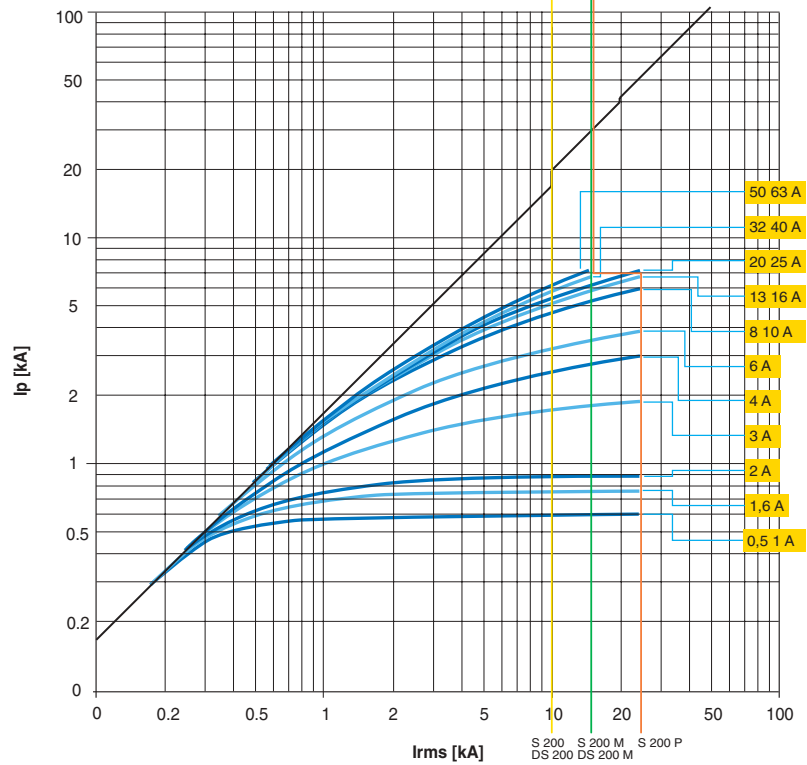
**Limitation curves - Peak current values**

The  $I_p$  curves give the values of the peak current, expressed in kA, in relation to the perspective symmetrical short-circuit current (kA).

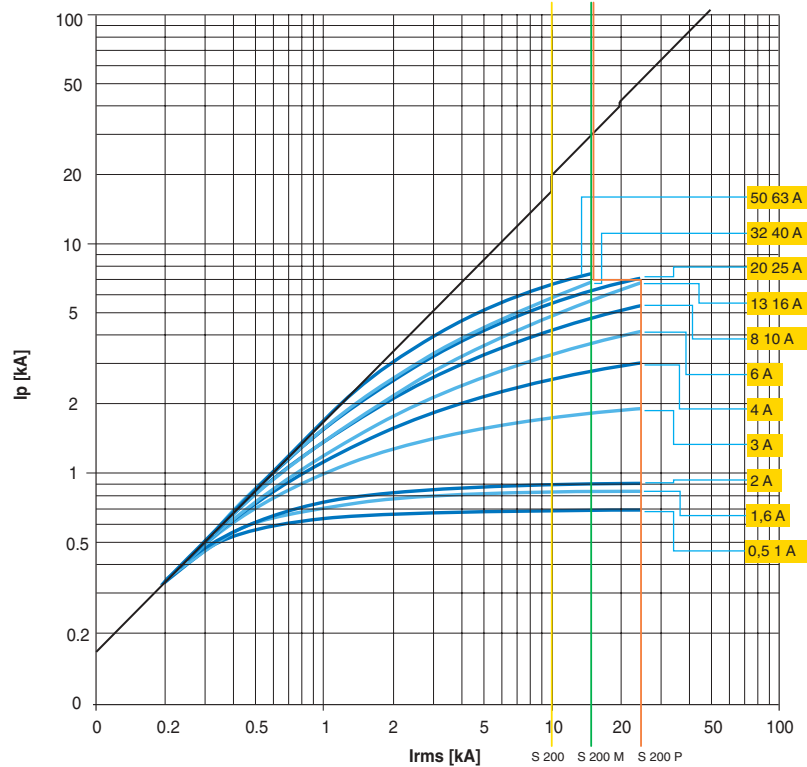




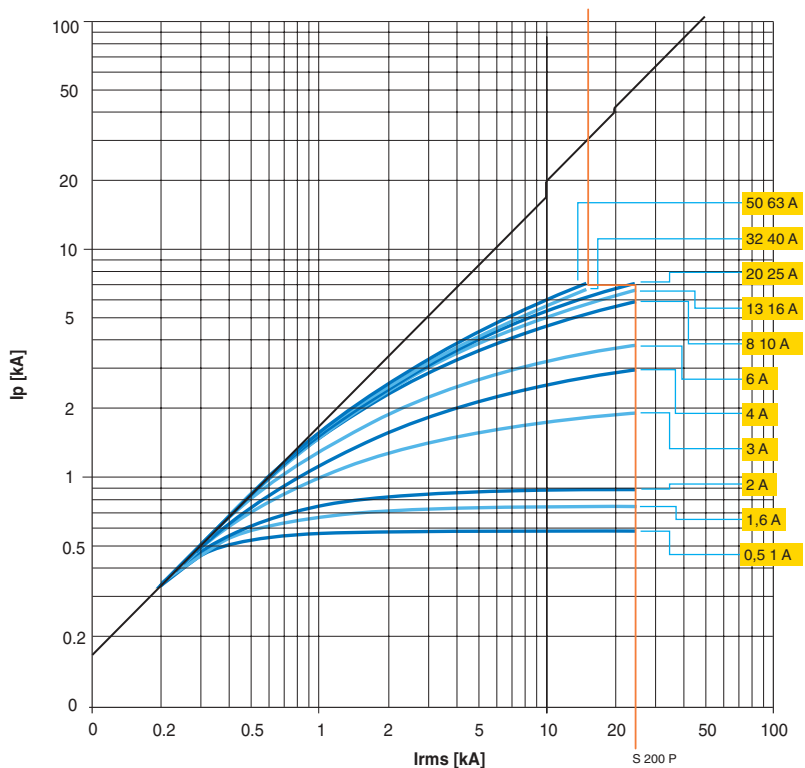
S 200-S 200 P, characteristics B-C  
DS 200-DS 200 M, characteristics B-C



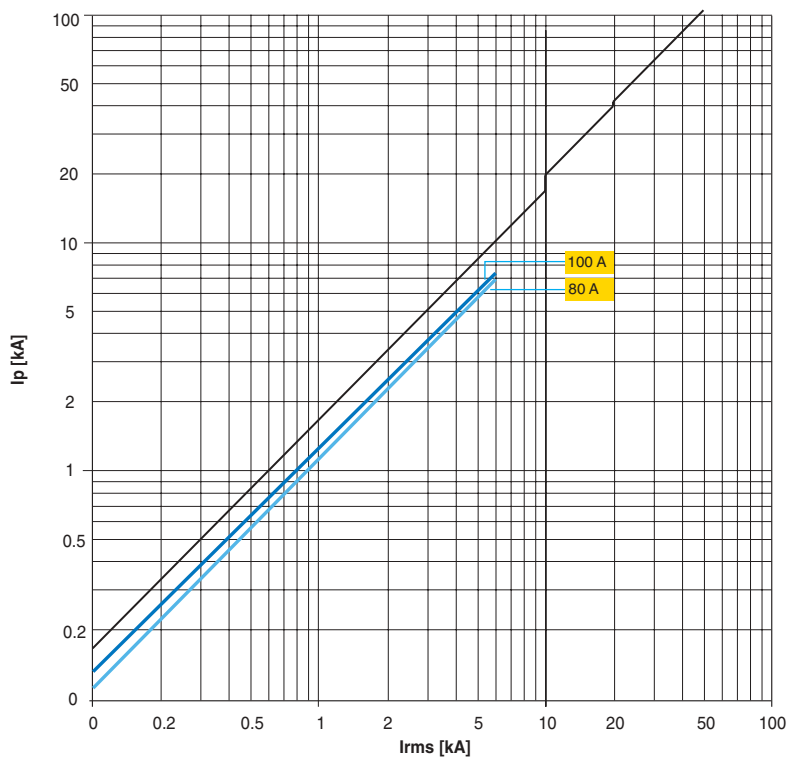
S 200-S 200 P, characteristics K-D



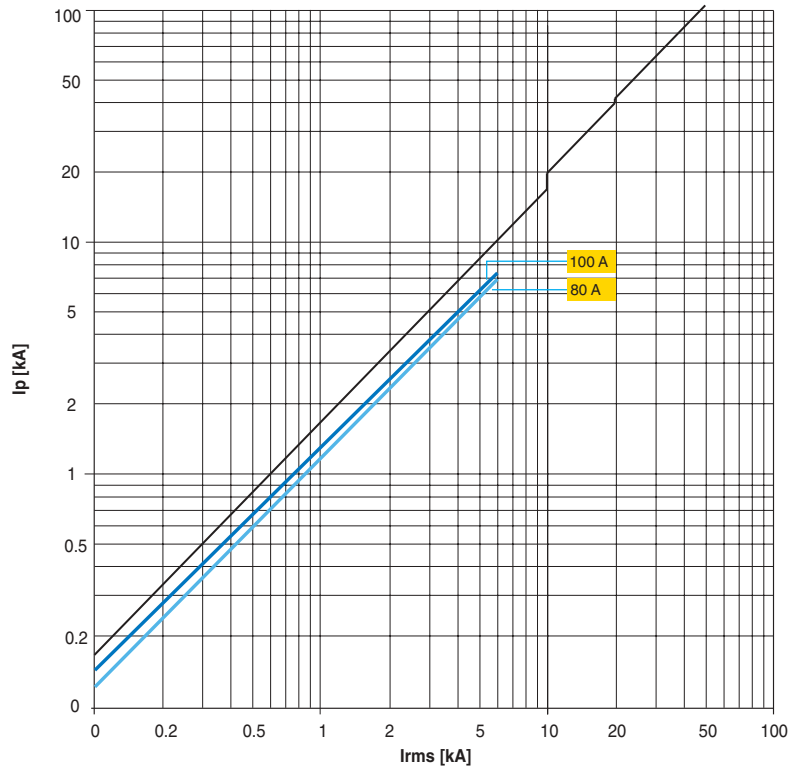
S 200 P, characteristic Z



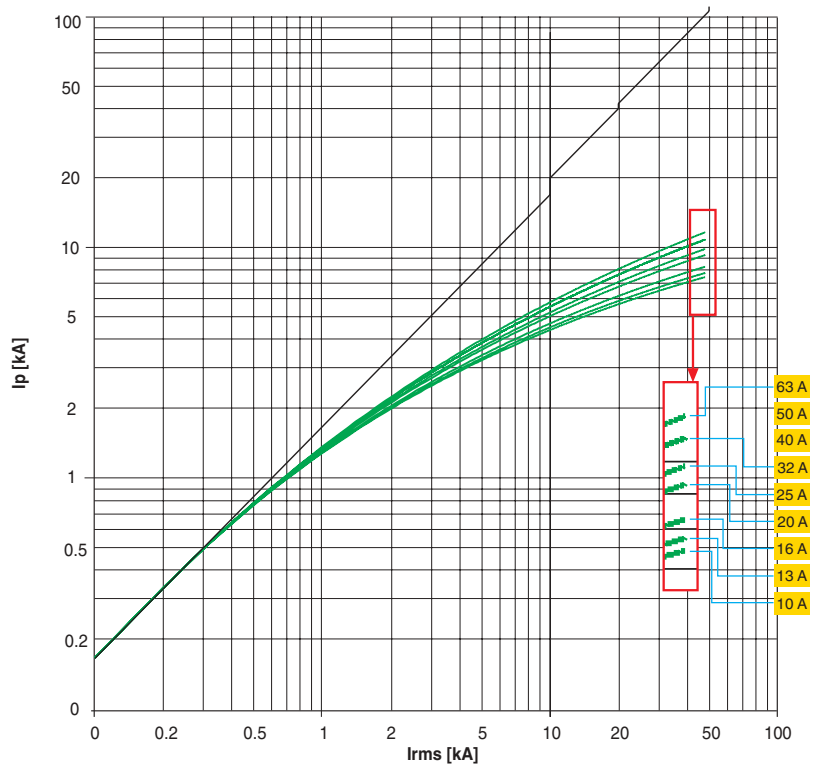
S 280 80-100 A, characteristic B



S 280 80-100 A, characteristic C



S 500, characteristics B-C-D (3P, 4P 400 V)



### Back-up protection

The tables given provide the value (in kA, referring to the breaking capacity according to the IEC 60947-2 Standard) for which the back-up protection among the combination of selected circuit-breakers is verified. The tables cover the possible combinations between ABB SACE Tmax series of moulded-case circuit-breakers and those between the above-mentioned circuit-breakers and the ABB series of modular circuit-breakers.

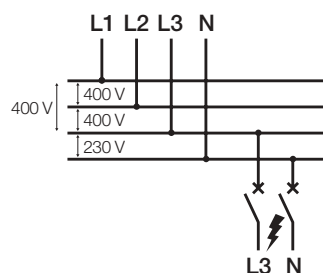
The values indicated in the tables refer to the voltage:

- Vn of 230/240 V AC for coordination with modular S9 circuit-breakers
- Vn of 400/415 V AC for all the other coordinations.

### Selective protection

The tables given provide the value (in kA, referring to the breaking capacity according to the IEC 60947-2 Standard) for which the selective protection is verified among the combination of selected circuit-breakers. The tables cover the possible combinations between ABB SACE Tmax series of moulded-case circuit-breakers, and the ABB series of modular circuit-breakers. The values in the table represent the maximum value obtainable of discrimination between supply side circuit-breaker and load side circuit-breaker referring to the voltage:

- Vn of 230/240 V AC for the S9 circuit-breakers and Vn of 400/415 V AC for the supply side circuit-breakers in the coordination between MCB with the modular S9 circuit-breakers (see picture).
- Vn of 400/415 V AC for all the other coordinations.



### General prescriptions

- Function I of the electronic releases of the supply side circuit-breakers must be excluded ( $I_3$  in OFF);
- The magnetic trip of thermomagnetic (TM) or magnetic only (M) circuit-breakers placed on the supply side must be  $10 \times I_n$  and regulated to the maximum threshold;
- It is of prime importance to check that the settings made by the user for the electronic and thermomagnetic relays of circuit-breakers placed both on the load and supply side do not create intersections on the time-current curves.

### Note

The following tables give the breaking capacities at 415 V AC for circuit-breakers SACE Tmax.

#### Tmax @ 415 V AC

Version	Icu [kA]
B	16
C	25
N	36
S	50
H	70
L (T2)	85
L (T4, T5)	120
V	200

### Caption

MCB = miniature circuit-breakers (S9, S2, S500)

MCCB = moulded-case circuit-breakers (Tmax)

- MA (Tmax)

EL = electronic release

- PR221DS - PR222DS (Tmax)

For moulded-case or air circuit-breakers:

TM = thermomagnetic release

- TMD (Tmax)

- TMA (Tmax)

M = magnetic only release

- MF (Tmax)

For miniature circuit-breakers:

B = trip characteristic ( $I_m=3...5I_n$ )

C = trip characteristic ( $I_m=5...10I_n$ )

D = trip characteristic ( $I_m=10...20I_n$ )

K = trip characteristic ( $I_m=8...14I_n$ )

Z = trip characteristic ( $I_m=2...3I_n$ )

For solutions not shown in these tables, please consult the website:

<http://bol.it.abb.com> or contact ABB SACE

**MCB -MCB @240 V (Two-pole circuit-breakers)**

Load s.	Char.	In [A]	Icu [kA]	Supply s.						
				S200	S200M	S200P	S200P	S 280	S 290	S 500
				B-C	B-C	B-C	B-C	B-C	C	B-C
				20	25	40	25	20	25	100
				0.5..63	0.5..63	0.5..25	32..63	80,100	80..125	6..63
<b>S931 N</b>	C	4,5	2..40	20	25	40	25	15	15	100
<b>S941 N</b>	B,C	6	2..40	20	25	40	25	15	15	100
<b>S951 N</b>	B,C	10	2..40	20	25	40	25	15	15	100
<b>S971 N</b>	B,C	10	2..40	20	25	40	25	15	15	100
<b>S200</b>	B,C,K,Z	20	0.5..63		25	40	25			100
<b>S200M</b>	B,C,D	25	0.5..63			40				100
<b>S200P</b>	B,C,	40	0.5..25							100
	D,K,Z	25	32..63							100
<b>S280</b>	B,C	20	80,100							
<b>S290</b>	C,D	25	80..125							
<b>S500</b>	B,C,D	100	6..63							

**MCCB @415 V -MCB @240 V**

Load s.	Char.	In [A]	Icu [kA]	Supply s.*									
				T1	T1	T1	T2	T3	T2	T3	T2	T2	
				Version B	C	N	N	N	S	S	H	L	
				16	25	36	36	36	50	50	70	85	
<b>S931 N</b>	C	2..25	4.5	16	16	16	20	10	20	10	20	20	
		32,40	4.5	10	10	10	16	10	16	10	16	16	
<b>S941 N</b>	B,C	2..25	6	16	16	16	20	10	20	10	20	20	
		32,40	6	10	10	10	16	10	16	10	16	16	
<b>S951 N</b>	B,C	2..25	10	16	16	16	25	16	25	16	25	25	
		32,40	10	16	16	16	16	16	16	16	16	16	
<b>S971 N</b>	B,C	2..25	10	16	16	16	25	16	15	16	25	25	
		32,40	10	16	16	16	16	16	16	16	16	16	

\*Supply side circuit-breaker 4P (load side circuit branched between one phase and the neutral)

**MCB -MCB @415 V**

Load s.	Char.	In [A]	Icu [kA]	Supply s.						
				S200	S200M	S200P	S200P	S 280	S 290	S 500
				B-C	B-C	B-C	B-C	B-C	C	B-C
				10	15	25	15	6	20	50
				0.5..63	0.5..63	0.5..25	32..63	80,100	80..125	6..63
<b>S200</b>	B,C,K,Z	10	0.5..63		15	25	15		15	50
<b>S200M</b>	B,C,D	15	0.5..63			25				50
<b>S200P</b>	B,C,	25	0.5..25							50
	D,K,Z	15	32..63							
<b>S280</b>	B,C	6	80,100							
<b>S290</b>	C,D	20 (15)*	80..125							
<b>S500</b>	B,C,D	50	6..63							

**MCCB -MCB @415 V**

Load s.	Char.	In [A]	Icu [kA]	Supply s.													
				T1	T1	T1	T2	T3	T4	T2	T3	T4	T2	T4	T2	T4	T4
				Version B	C	N	N	N	N	S	S	S	H	H	L	L	V
				16	25	36	36	36	36	50	50	50	70	70	85	120	200
<b>S200</b>	B,C,K,Z	0.5..10	10	16	25	30	36	36	36	36	40	40	40	40	40	40	40
		13..63	10	16	25	30	36	16	36	36	16	40	40	40	40	40	40
<b>S200M</b>	B,C,D	0.5..10	15	16	25	30	36	36	36	50	40	40	70	40	85	40	40
		13..63	15	16	25	30	36	25	36	50	60	40	60	40	60	40	40
<b>S200P</b>	B,C,	0.5..10	25			30	36	36	36	50	40	40	70	40	85	40	40
	D,K,Z	13..25	25			36	30	36	50	30	40	60	40	60	40	40	40
		32..63	15	16	25	30	36	25	36	50	25	40	60	40	60	40	40
<b>S280</b>	B,C	80,100	6	16	16	16	36	16	30	36	16	30	36	30	36	30	30
<b>S290</b>	C,D	80..125	20 (15)*	16	25	30	36	30	30	50	30	30	70	30	85	30	30
<b>S500</b>	B,C,D	6..63	50										70	70	85	120	200

\*Only for D characteristic

MCB -S9 @230/240 V

Load s.*	Char.	l <sub>cu</sub> [kA]	Supply s.**		S290				S500						
			C		D		B								
			25		50		63								
		ln [A]	80	100	125	80	100	16	20	25	32	40	50	63	
<b>S931N</b>	B-C	4.5	2	T	T	T	T	T	0.1	0.15	0.2	0.3	0.4	0.5	0.6
			4	T	T	T	T	T		0.06	0.15	0.25	0.3	0.4	0.5
			6	T	T	T	T	T			0.075	0.2	0.25	0.3	0.4
			10	4	T	T	T	T				0.15	0.2	0.25	0.3
			16	2.5	3.5	3.5	4	T							0.3
			20	1.5	2.5	2.5	3	T							0.3
			25	0.5	0.5	1.5	2	4							0.3
			32	0.5	0.5	0.5	1.5	3.5							
			40	0.5	0.5	0.5	1.5	3.5							
			<b>S941N</b>	B-C	6	2	T	T	T	T	T	0.1	0.15	0.2	0.3
4	5	T				T	T	T			0.15	0.25	0.3	0.4	0.5
6	4.5	5				T	5.5	T				0.2	0.25	0.3	0.4
10	4	4.5				5	5	5				0.15	0.2	0.25	0.3
16	2.5	3.5				3.5	4	4.5							0.3
20	1.5	2.5				2.5	3	4.5							0.3
25	0.5	0.5				1.5	2	4							0.3
32	0.5	0.5				0.5	1.5	3.5							
40	0.5	0.5				0.5	1.5	3.5							
<b>S951N</b>	B-C	10				2	6	8	9	7	8	0.1	0.15	0.2	0.3
			4	5	6	7.5	6	7			0.15	0.25	0.3	0.4	0.5
			6	4.5	5	6	5.5	6				0.2	0.25	0.3	0.4
			10	4	4.5	5	5	5				0.15	0.2	0.25	0.3
			16	2.5	3.5	3.5	4	4.5							0.3
			20	1.5	2.5	2.5	3	4.5							0.3
			25	0.5	0.5	1.5	2	4							0.3
			32	0.5	0.5	0.5	1.5	3.5							
			40	0.5	0.5	0.5	1.5	3.5							
			<b>S971N</b>	B-C	10	2	6	8	9	7	8	0.1	0.15	0.2	0.3
4	5	6				7.5	6	7			0.15	0.25	0.3	0.4	0.5
6	4.5	5				6	5.5	6				0.2	0.25	0.3	0.4
10	4	4.5				5	5	5				0.15	0.2	0.25	0.3
16	2.5	3.5				3.5	4	4.5							0.3
20	1.5	2.5				2.5	3	4.5							0.3
25	0.5	0.5				1.5	2	4							0.3
32	0.5	0.5				0.5	1.5	3.5							
40	0.5	0.5				0.5	1.5	3.5							

\*Load side circuit-breaker 1P+N (230/240 V)

\*\*For networks with 230/240 V AC ->two-pole circuit-breaker (phase +neutral)

for networks at 400/415 V AC ->four-pole circuit-breaker (load side circuit branched between one phase and the neutral)

S500										S500									
C										D									
50										50									
10	13	16	20	25	32	40	50	63		10	13	16	20	25	32	40	50	63	
0.1	0.2	0.34	0.53	0.58	0.62	0.7	0.85	1		0.24	0.5	1	2	3	T	T	T	T	
	0.15	0.26	0.4	0.53	0.58	0.62	0.7	0.85		0.2	0.32	0.5	1	2	3.5	T	T	T	
	0.1	0.2	0.26	0.4	0.53	0.58	0.62	0.7		0.15	0.24	0.35	0.5	1	2	4	T	T	
		0.15	0.2	0.34	0.48	0.53	0.58	0.62			0.2	0.32	0.35	0.5	0.5	2	T	T	
			0.15	0.26	0.4	0.48	0.53	0.58				0.24	0.3	0.5	0.5	1.5	3.5	T	
				0.2	0.34	0.4	0.48	0.53						0.35	0.5	1	2.5	3.5	
					0.26	0.34	0.4	0.48							0.5	0.5	1.5	2	
					0.26	0.34	0.4	0.48								0.5	1	1.5	
					0.26	0.34	0.4	0.48									0.5	1	
0.1	0.2	0.34	0.53	0.58	0.62	0.7	0.85	1		0.24	0.5	1	2	3	5	T	T	T	
	0.15	0.26	0.4	0.53	0.58	0.62	0.7	0.85		0.2	0.32	0.5	1	2	3.5	5	T	T	
	0.1	0.2	0.26	0.4	0.53	0.58	0.62	0.7		0.15	0.24	0.35	0.5	1	2	4	5.5	T	
		0.15	0.2	0.34	0.48	0.53	0.58	0.62			0.2	0.32	0.35	0.5	0.5	2	4.5	T	
			0.15	0.26	0.4	0.48	0.53	0.58				0.24	0.3	0.5	0.5	1.5	3.5	5.5	
				0.2	0.34	0.4	0.48	0.53						0.35	0.5	1	2.5	3.5	
					0.26	0.34	0.4	0.48							0.5	0.5	1.5	2	
					0.26	0.34	0.4	0.48								0.5	1	1.5	
					0.26	0.34	0.4	0.48									0.5	1	
0.1	0.2	0.34	0.53	0.58	0.62	0.7	0.85	1		0.24	0.5	1	2	3	5	6	7	9	
	0.15	0.26	0.4	0.53	0.58	0.62	0.7	0.85		0.2	0.32	0.5	1	2	3.5	5	6	8	
	0.1	0.2	0.26	0.4	0.53	0.58	0.62	0.7		0.15	0.24	0.35	0.5	1	2	4	5.5	7	
		0.15	0.2	0.34	0.48	0.53	0.58	0.62			0.2	0.32	0.35	0.5	0.5	2	4.5	6	
			0.15	0.26	0.4	0.48	0.53	0.58				0.24	0.3	0.5	0.5	1.5	3.5	5.5	
				0.2	0.34	0.4	0.48	0.53						0.35	0.5	1	2.5	3.5	
					0.26	0.34	0.4	0.48							0.5	0.5	1.5	2	
					0.26	0.34	0.4	0.48								0.5	1	1.5	
					0.26	0.34	0.4	0.48									0.5	1	
0.1	0.2	0.34	0.53	0.58	0.62	0.7	0.85	1		0.24	0.5	1	2	3	5	6	7	9	
	0.15	0.26	0.4	0.53	0.58	0.62	0.7	0.85		0.2	0.32	0.5	1	2	3.5	5	6	8	
	0.1	0.2	0.26	0.4	0.53	0.58	0.62	0.7		0.15	0.24	0.35	0.5	1	2	4	5.5	7	
		0.15	0.2	0.34	0.48	0.53	0.58	0.62			0.2	0.32	0.35	0.5	0.5	2	4.5	6	
			0.15	0.26	0.4	0.48	0.53	0.58				0.24	0.3	0.5	0.5	1.5	3.5	5.5	
				0.2	0.34	0.4	0.48	0.53						0.35	0.5	1	2.5	3.5	
					0.26	0.34	0.4	0.48							0.5	0.5	1.5	2	
					0.26	0.34	0.4	0.48								0.5	1	1.5	
					0.26	0.34	0.4	0.48									0.5	1	

Fuse

	Im	Icu [kA]	In [A]	25	32	40	50	63	80	100	125
<b>S931N</b>	C	4.5	2	1.5	2.5	T	T	T	T	T	T
		4.5	4	1	2	T	T	T	T	T	T
		4.5	6	1	1.5	4	T	T	T	T	T
		4.5	10	-	1.2	3.5	4	T	T	T	T
		4.5	16	-	1	3	3.5	T	T	T	T
		4.5	20	-	1	3	3.5	T	T	T	T
		4.5	25	-	1	2	3	T	T	T	T
		4.5	32	-	1	2	3	T	T	T	T
		4.5	40	-	-	1.5	2.5	4	T	T	T
<b>S941N</b>	B-C	6	2	1.5	2.5	T	T	T	T	T	T
		6	4	1	2	4.5	T	T	T	T	T
		6	6	1	1.5	4	4.5	T	T	T	T
		6	10	-	1.2	3.5	4	T	T	T	T
		6	16	-	1	3	3.5	5	T	T	T
		6	20	-	1	3	3.5	5	T	T	T
		6	25	-	1	2	3	4.5	T	T	T
		6	32	-	1	2	3	4.5	5	T	T
		6	40	-	-	1.5	2.5	4	5	T	T
<b>S951N</b>	B-C	10	2	1.5	2.5	5	T	T	T	T	T
		10	4	1	2	4.5	5	T	T	T	T
		10	6	1	1.5	4	4.5	7	T	T	T
		10	10	-	1.2	3.5	4	6	T	T	T
		10	16	-	1	3	3.5	5	T	T	T
		10	20	-	1	3	3.5	5	8	T	T
		10	25	-	1	2	3	4.5	6.5	T	T
		10	32	-	1	2	3	4.5	5	8	T
		10	40	-	-	1.5	2.5	4	5	6.5	T
<b>S971N</b>	B-C	10	2	1.5	2.5	5	7	T	T	T	T
		10	4	1	2	4.5	5	8	T	T	T
		10	6	1	1.5	4	4.5	7	T	T	T
		10	10	-	1.2	3.5	4	6	T	T	T
		10	16	-	1	3	3.5	5	9	T	T
		10	20	-	1	3	3.5	5	8	T	T
		10	25	-	1	2	3	4.5	6.5	9	T
		10	32	-	1	2	3	4.5	5	8	T
		10	40	-	-	1.5	2.5	4	5	6.5	9



MCB S 700

		Im		E	E	E	E	E	E	E	E
			Icu [kA]	30	30	30	30	30	30	30	30
			In [A]	20	25	35	40	50	63	80	100
<b>S931N</b>	C	4.5	2	T	T	T	T	T	T	T	T
	C	4.5	4	T	T	T	T	T	T	T	T
	C	4.5	6	T	T	T	T	T	T	T	T
	C	4.5	10	T	T	T	T	T	T	T	T
	C	4.5	16	-	T	T	T	T	T	T	T
	C	4.5	20	-	-	T	T	T	T	T	T
	C	4.5	25	-	-	T	T	T	T	T	T
	C	4.5	32	-	-	-	-	T	T	T	T
	C	4.5	40	-	-	-	-	-	T	T	T
<b>S941N</b>	B-C	6	2	T	T	T	T	T	T	T	T
	B-C	6	4	T	T	T	T	T	T	T	T
	B-C	6	6	T	T	T	T	T	T	T	T
	B-C	6	10	T	T	T	T	T	T	T	T
	B-C	6	16	-	T	T	T	T	T	T	T
	B-C	6	20	-	-	T	T	T	T	T	T
	B-C	6	25	-	-	T	T	T	T	T	T
	B-C	6	32	-	-	-	-	T	T	T	T
	B-C	6	40	-	-	-	-	-	T	T	T
<b>S951N</b>	B-C	10	2	T	T	T	T	T	T	T	T
	B-C	10	4	T	T	T	T	T	T	T	T
	B-C	10	6	T	T	T	T	T	T	T	T
	B-C	10	10	T	T	T	T	T	T	T	T
	B-C	10	16	-	T	T	T	T	T	T	T
	B-C	10	20	-	-	T	T	T	T	T	T
	B-C	10	25	-	-	T	T	T	T	T	T
	B-C	10	32	-	-	-	-	T	T	T	T
	B-C	10	40	-	-	-	-	-	T	T	T
<b>S971N</b>	B-C	10	2	T	T	T	T	T	T	T	T
	B-C	10	4	T	T	T	T	T	T	T	T
	B-C	10	6	T	T	T	T	T	T	T	T
	B-C	10	10	T	T	T	T	T	T	T	T
	B-C	10	16	-	T	T	T	T	T	T	T
	B-C	10	20	-	-	T	T	T	T	T	T
	B-C	10	25	-	-	T	T	T	T	T	T
	B-C	10	32	-	-	-	-	T	T	T	T
	B-C	10	40	-	-	-	-	-	T	T	T

MCCB @415 V 4p -S9 @240 V

Load s.	Supply s.			T1												T2						
	Char.	Icu [kA]	In [A]	Version												N, S, H, L						
				Release												TMD,MA						
				lu [A]												160						
B,C,N												TMD										
160												160										
				16	20	25	32	40	50	63	80	100	125	160**	160	16	20	25	32	40	50	
S931N	C	4.5	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			10			3	3	3	T	T	T	T	T	T	T	3*	3	3	3	T		
			16					3	T	T	T	T	T	T	T				3*	3	T	
			20						3	T	T	T	T	T	T				3*		3	
			25								T	T	T	T	T	T						3*
			32									T	T	T	T	T						3*
			40										T	T	T	T						
S941N	B-C	6	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			6	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			10			3	3	3	4.5	T	T	T	T	T	T	3*	3	3	3	4.5		
			16					3	4.5	5	T	T	T	T	T				3*	3	4.5	
			20						3	5	6	T	T	T	T				3*		3	
			25								5	6	T	T	T	T						3*
			32									6	T	T	T	T						3*
			40										T	T	T	T						
S951N	B-C	10	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			6	6	6	6	6	6	6	6	T	T	T	T	T	T	T	T	T	T	T	
			10			3	3	3	4.5	7.5	8.5	T	T	T	T	3*	3	3	3	4.5		
			16					3	4.5	5	7.5	T	T	T	T				3*	3	4.5	
			20						3	5	6	T	T	T	T				3*		3	
			25								5	6	T	T	T	T						3*
			32									6	7.5	T	T	T						3*
			40										7.5	T	T	T						
S971N	B-C	10	4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			6	6	6	6	6	6	6	12	T	T	T	T	T	T	T	T	T	T	T	
			10			3	3	3	4.5	7.5	8.5	T	T	T	T	3*	3	3	3	4.5		
			16					3	4.5	5	7.5	T	T	T	T				3*	3	4.5	
			20						3	5	6	T	T	T	T				3*		3	
			25								5	6	T	T	T	T						3*
			32									6	7.5	T	T	T						3*
			40										7.5	T	T	T						

Supply side circuit-breaker 4P (load side circuit branched between one phase and the neutral)

Load side circuit-breaker 1P+N (230/240 V)

\*Value valid only for magnetic only supply side circuit-breaker

\*\*Neutral 50%

T2								T3														
TMD, MA				N,S,H,L				EL				N,S										
160				160				160				250										
63	80	100	125**	125	160**	160	10	25	63	100	160	63	80	100	125**	125	160**	160	200**	200	250**	250
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T			T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T			T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T			T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T				T	T	T	T	T	T	T	T	T	T	T	T	T
	T*	T		T	T	T				T	T	T	T*	T		T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
5	T	T	T	T	T	T			T	T	T	5	T	T	T	T	T	T	T	T	T	T
5	T	T	T	T	T	T			T	T	T	5	T	T	T	T	T	T	T	T	T	T
5	T	T	T	T	T	T			T	T	T	5	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T				T	T		T	T	T	T	T	T	T	T	T	T
	T*	T		T	T	T				T	T		T*	T		T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
7.5	8.5	T	T	T	T	T		T	T	T	T	7.5	8.5	T	T	T	T	T	T	T	T	T
5	7.5	T	7.5	T	T	T			T	T	T	5	7.5	T	7.5	T	T	T	T	T	T	T
5	6	T	6	T	T	T			T	T	T	5	6	T	6	T	T	T	T	T	T	T
5	6	T	6	T	T	T			T	T	T		5	6	T	6	T	T	T	T	T	T
	6	7.5	6	T	T	T				T	T		6	7.5	6	T	T	T	T	T	T	T
	6*	7.5		T	T	T					T		6*	7.5		T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
7.5	8.5	T	T	T	T	T		T	T	T	T	7.5	8.5	T	T	T	T	T	T	T	T	T
5	7.5	T	7.5	T	T	T			T	T	T	5	7.5	T	7.5	T	T	T	T	T	T	T
5	6	T	6	T	T	T			T	T	T	5	6	T	6	T	T	T	T	T	T	T
5	6	T	6	T	T	T			T	T	T	5	6	T	6	T	T	T	T	T	T	T
	6	7.5	6	T	T	T				T	T		6	7.5	6	T	T	T	T	T	T	T
	6*	7.5		T	T	T					T		6*	7.5		T	T	T	T	T	T	T

MCB - S 200 @ 400/415 V

Load s.	Supply s.		S 290		S 500						
	Char.	Icu [kA]	D		D						
			15		32	40	50	63			
		In [A]	80	100							
S 200	C	10	≤ 2	T	T	T	T	T	T		
			3	T	T	3	6	T	T		
			4	T	T	2	3	6	T		
			6	T	T	1.5	2	3	5.5		
	B-C	10	8	T	T	1.5	2	3	5.5		
			10	5	8	1	1.5	2	3		
			13	4.5	7		1.5	2	3		
			16	4.5	7			2	3		
			20	3.5	5				2.5		
			25	3.5	5						
			32		4.5						
			40								
			50								
			63								
			D	10	≤ 2	T	T	T	T	T	T
					3	T	T	3	6	T	T
	4	T			T	2	3	6	T		
	6	T			T	1.5	2	3	5.5		
	8	T			T	1.5	2	3	5.5		
	10	5			8	1	1.5	2	3		
	13	3			5			1.5	2		
	16	3			5			1.5	2		
	20	3			5				2		
	25				4						
	32										
	40										
	50										
	63										
	K	10			≤ 2	T	T	T	T	T	T
					3	T	T	3	6	T	T
			4	T	T	2	3	6	T		
			6	T	T	1.5	2	3	5.5		
			8	T	T	1.5	2	3	5.5		
			10	5	8		1.5	2	3		
			16	3	5				2		
			20	3	5						
			25		4						
			32								
			40								
			50								
63											
Z			10	≤ 2	T	T	T	T	T	T	
				3	T	T	3	6	T	T	
				4	T	T	2	3	6	T	
	6	T		T	1.5	2	3	5.5			
	8	T		T	1.5	2	3	5.5			
	10	5		8	1	1.5	2	3			
	16	4.5		7	1	1.5	2	3			
	20	3.5		5		1.5	2	2.5			
	25	3.5		5			2	2.5			
	32	3		4.5				2			
	40	3		4.5							
	50			3							
	63										

MCB - S 200 M @ 400/415 V

Supply s.		S 290			S 500						
Load s.	Char.	Icu [kA]	D		D						
			15		50						
			In [A]	80	100	32	40	50	63		
S 200 M	C	15	≤ 2	T	T	T	T	T	T		
			3	T	T	3	6	T	T		
			4	T	T	2	3	6	T		
			6	10.5	T	1.5	2	3	5.5		
	B-C	15	8	10.5	T	1.5	2	3	5.5		
			10	5	8	1	1.5	2	3		
			13	4.5	7		1.5	2	3		
			16	4.5	7			2	3		
			20	3.5	5				2.5		
			25	3.5	5						
			32		4.5						
			40								
			50								
			63								
			D	15	≤ 2	T	T	T	T	T	T
					3	T	T	3	6	T	T
	4	T			T	2	3	6	T		
	6	10.5			T	1.5	2	3	5.5		
	8	10.5			T	1.5	2	3	5.5		
	10	5			8	1	1.5	2	3		
	16	3			5			1.5	2		
	20	3			5				2		
	25				4						
	32										
	40										
	50										
	63										
	K	15	≤ 2	T	T	T	T	T	T		
			3	T	T	3	6	T	T		
			4	T	T	2	3	6	T		
			6	10.5	T	1.5	2	3	5.5		
			8	10.5	T	1.5	2	3	5.5		
			10	5	8		1.5	2	3		
16			3	5				2			
20			3	5							
25				4							
32											
40											
50											
63											

MCB - S 200 P @400/415 V

		Supply s.			S 290				S 500					
Char.		D			D				D					
Icu [kA]		15			50									
load s.		In [A]	80	100	32	40	50	63						
S 200 P	C	25	≤ 2	T	T	T	T	T	T					
			3	T	T	3	6	15	15					
			4	T	T	2	3	6	15					
			6	10.5	T	1.5	2	3	5.5					
	B-C	25	8	10.5	T	1.5	2	3	5.5					
			10	5	8	1	1.5	2	3					
			13	4.5	7		1.5	2	3					
			16	4.5	7			2	3					
			20	3.5	5				2.5					
			25	3.5	5									
			15	32		4.5								
				40										
				50										
				63										
	D	25	≤ 2	T	T	T	T	T	T					
			3	T	T	3	6	15	15					
			4	T	T	2	3	6	15					
			6	10.5	T	1.5	2	3	5.5					
			8	10.5	T	1.5	2	3	5.5					
			10	5	8	1	1.5	2	3					
			13	3	5			1.5	2					
			16	3	5			1.5	2					
			20	3	5				2					
			25		4									
			15	32										
				40										
				50										
63														
K	25	≤ 2	T	T	T	T	T	T						
		3	T	T	3	6	15	15						
		4	T	T	2	3	6	15						
		6	10.5	T	1.5	2	3	5.5						
		8	10.5	T	1.5	2	3	5.5						
		10	5	8		1.5	2	3						
		13	3	5			1.5	2						
		16	3	5				2						
		20	3	5										
		25		4										
		15	32											
			40											
			50											
63														
Z	25	≤ 2	T	T	T	T	T	T						
		3	T	T	3	6	15	15						
		4	T	T	2	3	6	15						
		6	10.5	T	1.5	2	3	5.5						
		8	10.5	T	1.5	2	3	5.5						
		10	5	8	1	1.5	2	3						
		16	4.5	7	1	1.5	2	3						
		20	3.5	5		1.5	2	2.5						
		25	3.5	5			2	2.5						
		15	32	3	4.5				2					
			40	3	4.5									
			50		3									
			63											

**MCB S 700 - fuse gL/gG**

Short circuit selectivity: In the case of a short circuit, selectivity exists up to the values indicated.  
short circuit discrimination in kA

	I <sub>n</sub> A	to main circuit breaker S 700									to fuse gL/gG (DIN VDE 0636; IEC 269/3)									
		16	20	25	35	40	50	63	80	100	16	20	25	35	50	63	80	100	125	160
<b>S 200</b> <b>B, C, D</b> Current values smaller than 6 A and 8 A, apply only to C and D characteristics	2	15	15	15	15	15	15	15	15	15	1	1.2	4	15	15	15	15	15	15	15
	3	10	10	10	10	10	10	10	8	8	0.3	0.7	1.2	4.6	6	6	6	6	6	6
	4	10	10	10	10	10	10	10	8	8	0.3	0.6	0.9	2.8	6	6	6	6	6	6
	6	10	10	10	10	10	10	10	8	8	0.2	0.5	0.8	2	3.3	5.5	6	6	6	6
	8	10	10	10	10	10	10	10	8	8	0.2	0.4	0.7	1.7	2.8	4.5	6	6	6	6
	10	10	10	10	10	10	10	10	8	8	0.2	0.4	0.7	1.5	2.5	3.5	5	6	6	6
	13	10	10	10	10	10	10	10	8	8			0.7	1.5	2.5	3.5	5	6	6	6
	16	10	10	10	10	10	10	10	8	8				1.3	2	2.9	4.1	6	6	6
	20		10	10	10	10	10	10	8	8					1.8	2.6	3.5	5	6	6
	25			10	10	10	10	10	8	8					1.8	2.6	3.5	5	6	6
	32				10	10	10	10	8	8						2.2	3	4	6	6
40			**		10	10	10	8	8						2.5	4	6	6	6	
50/63						10	10	8	8								3.5	5	6	
<b>S 200 M</b> <b>B, C</b> Current values smaller than 6 A and 8 A, apply only to C characteristics	2	15	15	15	15	15	15	15	15	1	1.2	4	15	15	15	15	15	15	15	
	3	15	15	15	15	15	15	15	10	10	0.3	0.7	1.2	4.6	6	6	6	6	6	
	4	15	15	15	15	15	15	15	10	10	0.3	0.6	0.9	2.8	6	6	6	6	6	
	6	15	15	15	15	15	15	15	10	10	0.2	0.5	0.8	2	3.3	5.5	6	6	6	
	8	15	15	15	15	15	15	15	10	10	0.2	0.4	0.7	1.7	2.8	4.5	6	6	6	
	10	15	15	15	15	15	15	15	10	10	0.2	0.4	0.7	1.5	2.5	3.5	5	6	6	
	13	15	15	15	15	15	15	15	10	10			0.7	1.5	2.5	3.5	5	6	6	
	16	15	15	15	15	15	15	15	10	10				1.3	2	2.9	4.1	6	6	
	20		15	15	15	15	15	15	10	10					1.8	2.6	3.5	5	6	
	25			15	15	15	15	15	10	10					1.8	2.6	3.5	5	6	
	32				15	15	15	15	10	10						2.2	3	4	6	
40			**		15	15	15	10	10						2.5	4	6	6		
50/63						15	15	10	10								3.5	5	6	
<b>S 200</b> <b>K</b> Selectivity values apply to I <sub>cu</sub> according to IEC 947-2	2	15	15	15	15	15	15	15	15	0.3	1.2	4	15	15	15	15	15	15	15	
	3	10	10	10	10	10	10	10	10	0.3	0.7	1.2	4.6	6	6	6	6	6	6	
	4	10	10	10	10	10	10	10	10	0.3	0.6	0.9	2.8	6	6	6	6	6	6	
	6	10	10	10	10	10	10	10	10			0.7	1.7	3	5.9	6	6	6	6	
	8	10	10	10	10	10	10	10	10				1.3	2.2	3.6	6	6	6	6	
	10	10	10	10	10	10	10	10	10					1.7	2.5	4	6	6	6	
	16	10	10	10	10	10	10	10	10						2.2	3.1	4.6	6	6	
	20		10	10	10	10	10	10	10							3.1	4.6	6	6	
	25			10	10	10	15	10	10							2.6	3.5	6	6	
	32				10	10	10	10	10								3.5	6	6	
	40			**		10	10	10	10									5.5	6	
50/63						10	10	10										6		
<b>S 200</b> <b>Z</b> Selectivity values apply to I <sub>cu</sub> according to IEC 947-2	2	15	15	15	15	15	15	15	15	0.5	2	15	15	15	15	15	15	15	15	
	3	10	10	10	10	10	10	10	10	0.3	0.7	1.2	6	6	6	6	6	6	6	
	4	10	10	10	10	10	10	10	10	0.3	0.6	1.3	7	6	6	6	6	6	6	
	6	10	10	10	10	10	10	10	10	0.2	0.5	0.9	2.7	6	6	6	6	6	6	
	8	10	10	10	10	10	10	10	10	0.2	0.5	0.6	1.7	3.8	6	6	6	6	6	
	10	10	10	10	10	10	10	10	10		0.4	0.6	1.3	2.4	4	6	6	6	6	
	16	10	10	10	10	10	10	10	10			0.5	1.1	1.7	3	4.5	6	6	6	
	20		10	10	10	10	10	10	10				0.9	1.5	2.3	3.5	5.2	6	6	
	25			10	10	10	15	10	10					1.4	2	3	4	6	6	
	32				10	10	10	10	10					1.4	2	3	4	6	6	
	40			**		10	10	10	10							2	3	4	6	
50/63						10	10	10							2.2	3.5	5.8	6		

\*\* Limited or no selectivity at all possible in the overload range (thermal tripping)

MCB - S 500 @ 400/415 V

		Supply s.		S 290	
Char.		D			
Icu [kA]		15			
Load s.		In [A]	80	100	
<b>S 500</b>	B-C-D	50	6	6	10
			10	6	10
			13	6	10
			16	6	10
			20	6	7.5
			25	4.5	6
			32		6
			40		
			50		
			63		
	K	50	≤ 5.8	T	T
			5.3..8	10	T
			7.3..11	7.5	T
		30	10..15	4.5	10
			14..20	4.5	6
			18..26		4.5
			23..32		
			29..37		
			34..41		
			38..45		



Tmax T1 - S 200 @ 400/415 V

Load s.	Supply s.			T1												
	Char.	Icu [kA]	Version	B-C-N												
			Release	TM												
			Iu [A]	160												
<b>S 200</b>	C	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T		
			3	T	T	T	T	T	T	T	T	T	T	T		
			4	T	T	T	T	T	T	T	T	T	T	T		
			6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T	
	B-C	10	8		5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T	
			10			3	3	3	4.5	7.5	8.5	T	T	T		
			13				3	3	4.5	7.5	7.5	T	T	T		
			16					3	4.5	5	7.5	T	T	T		
			20						3	5	6	T	T	T		
			25							5	6	T	T	T		
			32								6	T	T	T		
			40									7.5	T	T		
			50										7.5	T		
			63											T		
			D	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T
					3	T	T	T	T	T	T	T	T	T	T	T
	4	T			T	T	T	T	T	T	T	T	T	T		
	6	5.5			5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T		
	8				5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T		
	10					3	3	3	3	5	8.5	T	T	T		
	13							2	2	3	5	8	T	T		
	16								2	2	3	5	8	T	T	
	20									2	3	4.5	6.5	T	T	
	25										2.5	4	6	9.5	T	
	32											4	6	9.5	T	
	40												5	8	T	
	50													5	9.5	
	63														T	
	K	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T		
			3	T	T	T	T	T	T	T	T	T	T	T		
			4	T	T	T	T	T	T	T	T	T	T	T		
			6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T		
			8		5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T		
			10			3	3	3	3	6	8.5	T	T	T		
			16					3	3	4.5	7.5	T	T	T		
			20						3	3.5	5.5	6.5	T	T		
			25								3.5	5.5	6	9.5	T	
			32									4.5	6	9.5	T	
			40										5	8	T	
			50											6	9.5	
			63												9.5	
			Z	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T
	3	T			T	T	T	T	T	T	T	T	T	T		
	4	T			T	T	T	T	T	T	T	T	T	T		
	6	5.5			5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T		
	8				5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T		
	10					3	3	3	4.5	8	8.5	T	T	T		
	16							3	4.5	5	7.5	T	T	T		
20								3	5	6	T	T	T			
25										5	6	T	T	T		
32											6	7.5	T	T		
40												7.5	T	T		
50													7.5	T		
63														T		

Tmax T1 - S 200 M @ 400/415 V

		Supply s.			T1											
		Version			B-C-N											
		Release			TM											
		Iu [A]			160											
Load s.	Char.	Icu [kA]	In [A]	16	20	25	32	40	50	63	80	100	125	160		
S 200 M	C	15	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	
			3	T	T	T	T	T	T	T	T	T	T	T	T	
			4	T	T	T	T	T	T	T	T	T	T	T	T	T
			6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	T
	B-C	15	8		5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	
			10			3	3	3	4.5	7.5	8.5	T	T	T	T	
			13				3	3	4.5	7.5	7.5	12	T	T	T	
			16					3	4.5	5	7.5	12	T	T	T	
			20						3	5	6	10	T	T	T	
			25							5	6	10	T	T	T	
			32								6	7.5	12	T	T	
			40									7.5	12	T	T	
			50										7.5	10.5	T	T
			63											10.5	T	T
			D	15	≤ 2	T	T	T	T	T	T	T	T	T	T	T
	3	T			T	T	T	T	T	T	T	T	T	T	T	
	4	T			T	T	T	T	T	T	T	T	T	T	T	
	6	5.5			5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	
	8				5.5	5.5	5.5	5.5	5.5	5.5	10.5	12	T	T	T	
	10					3	3	3	3	5	8.5	T	T	T	T	
	16							2	2	3	5	8	13.5	T	T	
	20								2	3	4.5	6.5	11	T	T	
	25									2.5	4	6	9.5	T	T	
	32										4	6	9.5	T	T	
	40											5	8	T	T	
	50										5	9.5	T	T		
	63											9.5	T	T		
	K	15	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	
			3	T	T	T	T	T	T	T	T	T	T	T	T	
			4	T	T	T	T	T	T	T	T	T	T	T	T	
			6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	
			8		5.5	5.5	5.5	5.5	5.5	5.5	10.5	12	T	T	T	
			10			3	3	3	3	6	8.5	T	T	T	T	
16							3	3	4.5	7.5	10	13.5	T	T		
20								3	3.5	5.5	6.5	11	T	T		
25									3.5	5.5	6	9.5	T	T		
32										4.5	6	9.5	T	T		
40											5	8	T	T		
50										6	9.5	T	T			
63											9.5	T	T			

Tmax T1 - S 200 P @ 400/415 V

Load s.	Supply s.			T1													
	Char.	Icu [kA]	Version	B-C-N													
			Release	TM													
		Iu [A]	160														
S 200 P	C	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T		
			3	15	15	15	15	15	15	15	15	15	17*	T	T		
			4	15	15	15	15	15	15	15	15	15	17*	T	T		
			6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17*	T	T	
	B-C	25	8		5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17*	T	T		
			10			3	3	3	3	4.5	7.5	8.5	17*	T	T		
			13				3	3	3	4.5	7.5	7.5	12	20*	T		
			16					3	4.5	5	7.5	12	20*	T			
			20						3	4.5	5	6	10	15	T		
			25							3	5	6	10	15	T		
											5	6	10	15	T		
				15	32								6	7.5	12	T	
					40									7.5	12	T	
					50										7.5	10.5	
			63											10.5			
	D	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T		
			3	15	15	15	15	15	15	15	15	15	17*	T	T		
			4	15	15	15	15	15	15	15	15	15	17*	T	T		
			6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17*	T	T		
			8		5.5	5.5	5.5	5.5	5.5	5.5	10.5	12	17*	T	T		
			10			3	3	3	3	3	5	8.5	17*	T	T		
			13						2	2	3	5	8	13.5	T		
			16							2	2	3	5	8	13.5	T	
			20								2	3	4.5	6.5	11	T	
			25									2.5	4	6	9.5	T	
		15	32										4	6	9.5	T	
			40											5	8	T	
			50												5	9.5	
			63													9.5	
			K	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T
					3	15	15	15	15	15	15	15	15	15	17*	T	T
					4	15	15	15	15	15	15	15	15	15	17*	T	T
					6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17*	T	T
8						5.5	5.5	5.5	5.5	5.5	5.5	10.5	12	17*	T	T	
10							3	3	3	3	3	6	8.5	17*	T	T	
13								3	3	5	7.5	10	13.5	T			
16									3	3	4.5	7.5	10	13.5	T		
20										3	3.5	5.5	6.5	11	T		
25											3.5	5.5	6	9.5	T		
15	32											4.5	6	9.5	T		
	40												5	8	T		
	50													6	9.5		
Z	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T			
		3	15	15	15	15	15	15	15	15	15	17*	T	T			
		4	15	15	15	15	15	15	15	15	15	17*	T	T			
		6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17*	T	T			
		8		5.5	5.5	5.5	5.5	5.5	5.5	10.5	12	17*	T	T			
		10			3	3	3	3	4.5	8	8.5	17*	T	T			
		16						3	4.5	5	7.5	12	20*	T			
		20							3	5	6	10	15	T			
		25								5	6	10	15	T			
		15	32									6	7.5	12	T		
	40											7.5	12	T			
	50												7.5	10.5			
			63											10.5			

\* Select the lowest value between with is indicated and the breaking capacity of the supply side circuit-breaker.

Tmax T1 - S 500 @ 400/415 V

Load s.	Char.	Supply s.			T1												
		Icu [kA]	In [A]	B, C, N													
				16	20	25	32	40	50	63	80	100	125	160			
S 500	B-C-D	50	6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	20*	25*	T		
			10			4.5	4.5	4.5	4.5	4.5	8	10	20*	25*	T		
			13				4.5	4.5	4.5	4.5	7.5	10	15	25*	T		
			16					4.5	4.5	4.5	7.5	10	15	25*	T		
			20						4.5	4.5	7.5	10	15	25*	T		
			25								6	10	15	20*	T		
			32									7.5	10	20*	T		
			40										10	20*	T		
			50											15	T		
			63												T		
			K	50	30	≤ 5.8	36	36	T	T	T	T	T	T	T	T	T
						5.3...8	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T
						7.3...11			4.5	4.5	4.5	4.5	8	T	T	T	T
						10...15				4.5	4.5	4.5	7.5	10	15	T	T
14...20								4.5	4.5	7.5	10	15	T	T			
18...26									4.5	7.5	10	15	T	T			
23...32										6	10	15	20*	T			
29...37											7.5	10	20*	T			
34...41												10	20*	T			
38...45													15	T			

Tmax T2 - S 200 @ 400/415 V

		Supply s.										T2											
		Version										N-S-H-L											
		Release										TM-M					EL						
		Iu [A]										160											
Load s.	Char.	Icu [kA]	In [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160			
S 200	C	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
			3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	B-C	10	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	
			8			5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	T
			10			3*	3	3	3	3	4.5	7.5	8.5	T	T	T			T	T	T	T	T
			13			3*		3	3	4.5	7.5	7.5	T	T	T			T	T	T	T	T	T
			16					3*	3	4.5	5	7.5	T	T	T			T	T	T	T	T	T
			20						3*	3	5	6	T	T	T			T	T	T	T	T	T
			25							3*	5	6	T	T	T			T	T	T	T	T	T
			32								3*	6	7.5	T	T			T	T	T	T	T	T
			40									5.5*	7.5	T	T					T	T	T	T
			50									3*	5*	7.5	T					T	T	T	T
	63										5*	T							T	T	T		
	D	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	T
			8			5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	T
			10			3*	3	3	3	3	3	5	8.5	T	T	T			T	T	T	T	T
			13					2*	2	2	3	5	8	T	T			T	T	T	T	T	T
			16					2*	2	2	3	5	8	T	T			T	T	T	T	T	T
			20					2*		2	3	4.5	6.5	T	T			T	T	T	T	T	T
			25							2*	2.5	4	6	9.5	T			T	T	T	T	T	T
			32									4	6	9.5	T			T	T	T	T	T	T
			40									3*	5	8	T					T	T	T	T
			50									2*	3*	5	9.5					9.5	9.5		
	63										3*	9.5							9.5				
	K	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
			3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	T
			8			5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	T
10					3*	3	3	3	3	3	6	8.5	T	T	T			T	T	T	T	T	
16							2*	3	3	4.5	7.5	T	T	T			T	T	T	T	T	T	
20							2*		3	3.5	5.5	6.5	T	T			T	T	T	T	T	T	
25									2*	3.5	5.5	6	9.5	T			T	T	T	T	T	T	
32											4.5	6	9.5	T			T	T	T	T	T	T	
40											3*	5	8	T					T	T	T	T	
50											2*	3*	6	9.5					9.5	9.5			
63												3*	9.5							9.5			
Z	10	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
		3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	T	
		8			5.5	5.5	5.5	5.5	5.5	5.5	T	T	T	T	T			T	T	T	T	T	
		10			3*	3	3	3	3	4.5	8	8.5	T	T	T			T	T	T	T	T	
		16					3*	3	4.5	5	7.5	T	T	T			T	T	T	T	T	T	
		20					3*		3	5	6	T	T	T			T	T	T	T	T	T	
		25							3*	5	6	T	T	T			T	T	T	T	T	T	
		32								3*	6	7.5	T	T			T	T	T	T	T	T	
		40									5.5*	7.5	T	T					T	T	T	T	
		50									4*	5*	7.5	T					T	T	T	T	
		63										5*	T							T	T	T	T

\* Value valid with supply side magnetic only circuit-breaker.

Tmax T2 - S 200 M @ 400/415 V

		Supply s.			T2																
		Version			N-S-H-L																
		Release			TM-M										EL						
		Iu [A]			160																
Load s.	Char.	Icu [kA]	In [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160	
S 200 M	C	15	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	B-C	15	6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	T	T	T	T	T
			8			5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	T	T	T	T	T	
			10			3*	3	3	3	4.5	7.5	8.5	T	T	T	T	T	T	T	T	
			13			3*		3	3	4.5	7.5	7.5	12	T	T	T	T	T	T	T	
			16					3*	3	4.5	5	7.5	12	T	T	T	T	T	T	T	
			20						3*	3	5	6	10	T	T	T	T	T	T	T	
			25							3*	5	6	10	T	T	T	T	T	T	T	
			32								3*	6	7.5	12	T	T	T	T	T	T	
			40									5.5*	7.5	12	T	T	T	T	T	T	
			50										3*	5*	7.5	10.5	10.5	10.5	10.5	10.5	10.5
	63											5*	10.5	10.5	10.5	10.5	10.5	10.5	10.5		
	D	15	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	T	T	T	T	T	
			8			5.5	5.5	5.5	5.5	5.5	10.5	12	T	T	T	T	T	T	T	T	
			10			3*	3	3	3	3	5	8.5	T	T	T	T	T	T	T	T	
			16					2*	2	2	3	5	8	13.5	T	T	T	T	T	T	
			20						2*	2	3	4.5	6.5	11	T	T	T	T	T	T	
			25							2*	2.5	4	6	9.5	T	T	T	T	T	T	
			32									4	6	9.5	T	T	T	T	T	T	
	40									3*	5	8	T	T	T	T	T	T			
	50										2*	3*	5	9.5	9.5	9.5	9.5	9.5	9.5		
	63											3*	9.5	9.5	9.5	9.5	9.5	9.5	9.5		
	K	15	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			3	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			4	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	T	T	T	T	T	T	T	T	T	
			8			5.5	5.5	5.5	5.5	5.5	10.5	12	T	T	T	T	T	T	T	T	
			10			3*	3	3	3	3	6	8.5	T	T	T	T	T	T	T	T	
16							2*	3	3	4.5	7.5	10	13.5	T	T	T	T	T	T		
20								2*	3	3.5	5.5	6.5	11	T	T	T	T	T	T		
25									2*	3.5	5.5	6	9.5	T	T	T	T	T	T		
32											4.5	6	9.5	T	T	T	T	T	T		
40									3*	5	8	T	T	T	T	T	T				
50										2*	3*	6	9.5	9.5	9.5	9.5	9.5	9.5			
63											3*	9.5	9.5	9.5	9.5	9.5	9.5	9.5			

\* Value valid with supply side magnetic only circuit-breaker.

Tmax T2 - S 200 P @ 400/415 V

Load s.	Supply s.		T2																
	Char.	Icu [kA]	Version																
			N-S-H-L																
			Release										EL						
In [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160		
S 200 P	C	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			3	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T	T
			4	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T	T
			6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17	T	T	T	T	T	T
			8			5.5	5.5	5.5	5.5	5.5	10.5	15	17	T	T	T	T	T	T
			10				3*	3	3	3	4.5	7.5	8.5	17	T	T	T	T	T
		13					3*	3	3	4.5	7.5	7.5	12	20	T	T	T	T	
		16						3*	3	4.5	5	7.5	12	20	T	T	T	T	
		20							3*	3	5	6	10	15	T	T	T	T	
		25								3*	5	6	10	15	T	T	T	T	
		32									3*	6	7.5	12	T	T	T	T	
		40										5.5*	7.5	12	T	T	T	T	
	50										3*	5*	7.5	10.5		10.5	10.5		
	63											5*	10.5			10.5	10.5		
	D	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			3	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T	
			4	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T	
			6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17	T	T	T	T	T	
			8			5.5	5.5	5.5	5.5	5.5	10.5	12	17	T	T	T	T	T	
			10				3*	3	3	3	3	5	8.5	17	T	T	T	T	
		13					2*	2	2	3	5	8	13.5	T	T	T	T		
		16						2*	2	2	3	5	8	13.5	T	T	T		
		20							2*	2	3	4.5	6.5	11	T	T	T		
		25								2*	2.5	4	6	9.5	T	T	T		
32											4	6	9.5	T	T	T			
40											3*	5	8	T	T	T			
50										2*	3*	5	9.5		9.5	9.5			
63											3*	9.5			9.5	9.5			
K	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		3	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T		
		4	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T		
		6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17	T	T	T	T	T		
		8			5.5	5.5	5.5	5.5	5.5	10.5	12	17	T	T	T	T	T		
		10				3*	3	3	3	3	6	8.5	17	T	T	T	T		
	13					2*	3	3	5	7.5	10	13.5	T	T	T	T			
	16						2*	3	3	4.5	7.5	10	13.5	T	T	T			
	20							2*	3	3.5	5.5	6.5	11	T	T	T			
	25								2*	3.5	5.5	6	9.5	T	T	T			
	32										4.5	6	9.5	T	T	T			
	40										3*	5	8	T	T	T			
50										2*	3*	6	9.5		9.5	9.5			
63											3*	9.5			9.5	9.5			
Z	25	≤ 2	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		3	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T		
		4	15	15	15	15	15	15	15	15	15	17	T	T	T	T	T		
		6	5.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	17	T	T	T	T	T		
		8			5.5	5.5	5.5	5.5	5.5	10.5	15	17	T	T	T	T	T		
		10				3*	3	3	3	4.5	8	8.5	17	T	T	T	T		
	13					3*	3	3	4.5	5	7.5	12	20	T	T	T			
	16						3*	3	4.5	5	6	10	15	T	T	T			
	20							3*	5	6	10	15	T	T	T				
	25								3*	5	6	10	15	T	T	T			
	32									3*	6	7.5	12	T	T	T			
	40										5.5*	7.5	12	T	T	T			
50										4*	5*	7.5	10.5		10.5	10.5			
63											5*	10.5			10.5	10.5			

\* Value valid with supply side magnetic only circuit-breaker.

Tmax T2 - S 290 @ 400/415 V

Load s.	Supply s.			T2		
	Version			N, S, H, L		
	Release			TM, M		EL
		$I_u$ [A]	160			
	Char.	$I_{cu}$ [kA]	$I_n$ [A]	160		160
<b>S 290</b>	C-D-K	20 (15)*	80			4
	C-D-K		100			4
	C		125			4

\*Only for D characteristic

Tmax T2 - S 500 @ 400/415 V

Load s.	Supply s.			T2																
	Version			N, S, H, L																
	Release			TM, M												EL				
		$I_u$ [A]	160																	
	Char.	$I_{cu}$ [kA]	$I_n$ [A]	12.5	16	20	25	32	40	50	63	80	100	125	160	10	25	63	100	160
<b>S 500</b>	B-C-D	50	6	4.5	5.5	5.5	5.5	5.5	5.5	5.5	10.5	15	20	25	36	36	36	36	36	36
			10			4.5*	4.5	4.5	4.5	4.5	8	10	20	25	36	36	36	36	36	36
			13			4.5*		4.5	4.5	4.5	7.5	10	15	25	36	36	36	36	36	36
			16				4.5*	4.5	4.5	4.5	7.5	10	15	25	36	36	36	36	36	36
			20					4.5*		4.5	7.5	10	15	25	36	36	36	36	36	36
			25						4.5*	6	10	15	20	36	36	36	36	36	36	
			32							4.5*	7.5	10	20	36	36	36	36	36	36	
			40								5*	10	20	36	36	36	36	36	36	
			50									5*	7.5*	15	36	36	36	36	36	36
			63											5*	36	36	36	36	36	36
<b>S 500</b>	K	50	$\leq 5.8$	36	36	36	36	36	36	36	36	36	36	36	50**	50**	50**	50**	50**	50**
			5.3...8	4.5*	5.5	5.5	5.5	5.5	5.5	5.5	10.5	36	36	36	50**	50**	50**	50**	50**	50**
			7.3...11			4.5*	4.5	4.5	4.5	4.5	8	36	36	36	50**	50**	50**	50**	50**	50**
			10...15			4.5*		4.5	4.5	4.5	7.5	10	15	T	T	T	T	T	T	T
			14...20				4.5*	4.5	4.5	4.5	7.5	10	15	T	T	T	T	T	T	T
			18...26					4.5*		4.5	7.5	10	15	T	T	T	T	T	T	T
			23...32						4.5*	6	10	15	20	T	T	T	T	T	T	
			29...37							4.5*	7.5	10	20	T	T	T	T	T	T	
			34...41								5*	10	20	T	T	T	T	T	T	
			38...45									5*	7.5*	15	T	T	T	T	T	T

\* Value valid with magnetic only breaker upstream.

\*\* Consider the lower value between the breaking capacity of the upstream circuit-breaker and the value indicated.



Tmax T3 - S 200 @ 400/415 V

Load s.	Supply s.		T3										
	Char.	Icu [kA]	Version	N-S									
			Release	TM-M									
S 200	Iu [A]	In [A]	250										
			63	80	100	125	160	200	250				
C	10	≤ 2	T	T	T	T	T	T	T	T			
		3	T	T	T	T	T	T	T	T			
		4	T	T	T	T	T	T	T	T			
		6	T	T	T	T	T	T	T	T			
	B-C	10	8	T	T	T	T	T	T	T	T		
			10	7.5	8.5	T	T	T	T	T	T		
			13	7.5	7.5	T	T	T	T	T	T		
			16	5	7.5	T	T	T	T	T	T		
			20	5	6	T	T	T	T	T	T		
			25	5	6	T	T	T	T	T	T		
			32		6	7.5	T	T	T	T	T		
			40			7.5	T	T	T	T	T		
			50			5*	7.5	T	T	T	T		
			63			5*	6*	T	T	T	T		
			D	10	≤ 2	T	T	T	T	T	T	T	T
					3	T	T	T	T	T	T	T	T
	4	T			T	T	T	T	T	T	T		
	6	T			T	T	T	T	T	T	T		
	8	T			T	T	T	T	T	T	T		
	10	5			8.5	T	T	T	T	T	T		
13	3	5			8	T	T	T	T	T			
16	3	5			8	T	T	T	T	T			
20	3	4.5			6.5	T	T	T	T	T			
25	2.5	4			6	9.5	T	T	T	T			
32		4			6	9.5	T	T	T	T			
40					5	8	T	T	T	T			
50					3*	5	9.5	T	T	T			
63					3*	5*	9.5	T	T	T			
K	10	≤ 2	T	T	T	T	T	T	T	T			
		3	T	T	T	T	T	T	T	T			
		4	T	T	T	T	T	T	T	T			
		6	T	T	T	T	T	T	T	T			
		8	T	T	T	T	T	T	T	T			
		10	6	8.5	T	T	T	T	T	T			
		16	4.5	7.5	T	T	T	T	T	T			
		20	3.5	5.5	6.5	T	T	T	T	T			
		25	3.5	5.5	6	9.5	T	T	T	T			
		32		4.5	6	9.5	T	T	T	T			
		40			5	8	T	T	T	T			
		50			3*	6	9.5	T	T	T			
		63			3*	5.5*	9.5	T	T	T			
		Z	10	≤ 2	T	T	T	T	T	T	T	T	
3	T			T	T	T	T	T	T	T			
4	T			T	T	T	T	T	T	T			
6	T			T	T	T	T	T	T	T			
8	T			T	T	T	T	T	T	T			
10	8			8.5	T	T	T	T	T	T			
16	5			7.5	T	T	T	T	T	T			
20	5			6	T	T	T	T	T	T			
25	5			6	T	T	T	T	T	T			
32				6	7.5	T	T	T	T	T			
40					7.5	T	T	T	T	T			
50					5*	7.5	T	T	T	T			
63					5*	6*	T	T	T	T			

\* Value valid with supply side magnetic only circuit-breaker.

Tmax T3 - S 200 M @ 400/415 V

		Supply s.				T3					
		Version				N-S					
		Release				TM-M					
		I <sub>u</sub> [A]				250					
Load s.	Char.	I <sub>cu</sub> [kA]	I <sub>n</sub> [A]	63	80	100	125	160	200	250	
S 200 M	C	15	≤ 2	T	T	T	T	T	T	T	
			3	T	T	T	T	T	T	T	
			4	T	T	T	T	T	T	T	
	B-C	15	6	10.5	T	T	T	T	T	T	T
			8	10.5	T	T	T	T	T	T	T
			10	7.5	8.5	T	T	T	T	T	T
			13	7.5	7.5	12	T	T	T	T	T
			16	5	7.5	12	T	T	T	T	T
			20	5	6	10	T	T	T	T	T
			25	5	6	10	T	T	T	T	T
			32		6	7.5	12	T	T	T	T
			40			7.5	12	T	T	T	T
			50			5*	7.5	10.5	T	T	T
			63			5*	6*	10.5	T	T	T
			D	15	≤ 2	T	T	T	T	T	T
	3	T			T	T	T	T	T	T	T
	4	T			T	T	T	T	T	T	T
	6	10.5			T	T	T	T	T	T	T
	8	10.5			12	T	T	T	T	T	T
	10	5			8.5	T	T	T	T	T	T
	16	3			5	8	13.5	T	T	T	T
	20	3			4.5	6.5	11	T	T	T	T
	25	2.5			4	6	9.5	T	T	T	T
	32				4	6	9.5	T	T	T	T
	40					5	8	T	T	T	T
	50					3*	5	9.5	T	T	T
	63			3*	5*	9.5	T	T	T		
	K	15	≤ 2	T	T	T	T	T	T	T	T
			3	T	T	T	T	T	T	T	T
			4	T	T	T	T	T	T	T	T
			6	10.5	T	T	T	T	T	T	T
			8	10.5	12	T	T	T	T	T	T
			10	6	8.5	T	T	T	T	T	T
			16	4.5	7.5	10	13.5	T	T	T	T
			20	3.5	5.5	6.5	11	T	T	T	T
			25	3.5	5.5	6	9.5	T	T	T	T
32				4.5	6	9.5	T	T	T	T	
40					5	8	T	T	T	T	
50					3*	6	9.5	T	T	T	
63			3*	5.5*	9.5	T	T	T			

\* Value valid with supply side magnetic only circuit-breaker.

Tmax T3 - S 200 P @ 400/415 V

load s.	Supply s.			T3								
	Char.	Icu [kA]	Version	N-S								
			Release	TM-M								
			Iu [A]	250								
		In [A]	63	80	100	125	160	200	250			
S 200 P	C	25	≤ 2	T	T	T	T	T	T	T		
			3	15	15	17	T	T	T	T		
			4	15	15	17	T	T	T	T		
	B-C	25	6	10.5	15	17	T	T	T	T		
			8	10.5	15	17	T	T	T	T		
			10	7.5	8.5	17	T	T	T	T		
			13	7.5	7.5	12	20	T	T	T		
			16	5	7.5	12	20	T	T	T		
			20	5	6	10	15	T	T	T		
			25	5	6	10	15	T	T	T		
			15	32		6	7.5	12	T	T	T	
				40			7.5	12	T	T	T	
	50				5*	7.5	10.5	T	T			
	D	25	≤ 2	T	T	T	T	T	T	T		
			3	15	15	T	T	T	T	T		
			4	15	15	T	T	T	T	T		
			6	10.5	15	T	T	T	T	T		
			8	10.5	12	T	T	T	T	T		
			10	5	8.5	T	T	T	T	T		
			13	3	5	8	13.5	T	T	T		
			16	3	5	8	13.5	T	T	T		
			20	3	4.5	6.5	11	T	T	T		
			25	2.5	4	6	9.5	T	T	T		
			15	32		4	6	9.5	T	T	T	
				40			5	8	T	T	T	
				50			3*	5	9.5	T	T	
			K	25	≤ 2	T	T	T	T	T	T	T
					3	15	15	17	T	T	T	T
	4	15			15	17	T	T	T	T		
	6	10.5			15	17	T	T	T	T		
	8	10.5			12	17	T	T	T	T		
	10	6			8.5	17	T	T	T	T		
	13	5			7.5	10	13.5	T	T	T		
	16	4.5			7.5	10	13.5	T	T	T		
	20	3.5			5.5	6.5	11	T	T	T		
	15	32		3.5	5.5	6	9.5	T	T			
		40			4.5	6	9.5	T	T			
		50				5	8	T	T			
	Z	25	≤ 2	T	T	T	T	T	T	T		
			3	15	15	17	T	T	T	T		
			4	15	15	17	T	T	T	T		
			6	10.5	15	17	T	T	T	T		
8			10.5	15	17	T	T	T	T			
10			8	8.5	17	T	T	T	T			
16			5	7.5	12	20	T	T	T			
20			5	6	10	15	T	T	T			
25			5	6	10	15	T	T	T			
15	32			6	7.5	12	T	T				
	40				7.5	12	T	T				
	50				5*	7.5	10.5	T				
63					5*	6*	10.5	T				

\* Value valid with supply side magnetic only circuit-breaker.

Tmax T3 - S 290 @ 400/415 V

		Supply s.			T3		
		Version			N, S		
		Release			TM, M		
		I <sub>n</sub> [A]			250		
Load s.	Char.	I <sub>cu</sub> [kA]	I <sub>n</sub> [A]	160	200	250	
S 290	C-D-K	20 (15)**	80	4*	10	15	
			100	4*	7.5*	15	
	C		125		7.5*		

\* Value valid with supply side magnetic only circuit-breaker.

\*\* Only for D characteristic

Tmax T3 - S 500 @ 400/415 V

		Supply s.			T3						
		Version			N, S						
		Release			TM, M						
		I <sub>n</sub> [A]			250						
load s.	Char.	I <sub>cu</sub> [kA]	I <sub>n</sub> [A]	63	80	100	125	160	200	250	
S 500	B-C-D	50	6	10.5	15	20	25	36	36	36	
			10	8	10	20	25	36	36	36	
			13	7.5	10	15	25	36	36	36	
			16	7.5	10	15	25	36	36	36	
			20	7.5	10	15	25	36	36	36	
			25	6	10	15	20	36	36	36	
			32		7.5	10	20	36	36	36	
			40			10	20	36	36	36	
			50			7.5*	15	36	36	36	
			63			5*	6*	36	36	36	
S 500	K	50	≤ 5.8	36	36	36	36	T	T	T	
			5.3...8	10.5	36	36	36	T	T	T	
			7.3...11	8	36	36	36	T	T	T	
			10...15	7.5	10	15	T	T	T	T	
			14...20	7.5	10	15	T	T	T	T	
		30	18...26	7.5	10	15	T	T	T	T	
			23...32	6	10	15	20	T	T	T	
			29...37		7.5	10	20	T	T	T	
			34...41			10	20	T	T	T	
			38...45			7.5*	15	T	T	T	

\* Value valid with supply side magnetic only circuit-breaker.

**Internal resistance and power loss of the miniature circuit-breakers**

Internal resistance per pole in mΩ, power loss per pole in W

Type	Rated current $I_n$ A	Device series B, C, D ①		K		Z	
		mΩ	W	mΩ	W	mΩ	W
<b>S 200 and S 200 M</b>	0.5	5500	1.4	6340	1.6	10100	2.5
	1	1440	1.4	1550	1.6	2270	2.3
	1.6	630	1.6	695	1.8	1100	2.8
	2	460	1.8	460	1.9	619	2.5
	3	150	1.3	165	1.5	202	1.8
	4	110	1.8	120	2.0	149	2.4
	6	55	2.0	52	1.9	104	3.7
	8	15	1.0	38	2.5	53.9	3.45
	10	13.3	1.3	12.6	1.26	17.5	1.7
	13	13.3	2.3	12.6	1.26	–	–
	16	7.0	1.8	7.7	2.0	10.9	2.8
	20	6.25	2.5	6.7	2.7	6.0	2.4
	25	5.0	3.2	4.6	2.9	4.1	2.6
	32	3.6	3.7	3.5	3.6	2.8	2.9
	40	3.0	4.8	2.8	4.5	2.5	4.1
50	1.3	3.25	1.25	2.9	1.8	4.4	
63	1.2	4.8	0.7	5.2	1.3	5.2	

① Current intensities 0.5 – 4 apply exclusively to C-type trip characteristics.

**Maximum permissible earth-fault loop impedance  $Z_S$  at  $U_0 = 230 V\sim$  ②  
to ensure compliance with the operation conditions pursuant to IEC 60364-4.**

**Operating time < 0.4 s; at 400 V~ < 0.2 s and at > 400 V~ < 0.1 s**

**The instantaneous release of the MCB ensures an operating time of  $\leq 0.1$  s (TN system).**

Determined according to DIN VDE 0100-520 sheet 2:2002-11 (source impedance = 300 mΩ, c = 0.95 and conductor temperature 70 °C = factor 0.8). The internal resistance of the MCB is already included.

**S 200 and S 200 M**

Rated current $I_n$ A	<b>B</b>	<b>C</b>	<b>D</b>	<b>K</b>	<b>Z</b>
	max. $Z_S$ Ω	max. $Z_S$ Ω	max. $Z_S$ Ω	max. $Z_S$ Ω	max. $Z_S$ Ω
0.5	–	46	33.0	33.0	153.3
1	–	23	16.5	16.5	76.7
1.6	–	14.4	10.3	10.3	47.9
2	–	11.5	8.2	8.2	38.3
3	–	7.7	5.5	5.5	25.6
4	–	5.8	4.1	4.1	19.2
6	7.7	3.8	2.7	2.7	12.8
8	–	2.8	2.1	2.1	9.5
10	4.6	2.2	1.6	1.6	7.7
13	3.5	1.7	1.2	1.2	–
16	2.9	1.4	1.0	1.0	4.8
20	2.3	1.2	0.8	0.8	3.8
25	1.8	0.9	0.7	0.7	3.1
32	1.4	0.7	0.5	0.5	2.4
40	1.1	0.6	0.4	0.4	1.9
50	0.9	0.5	0.3	0.3	1.5
63	0.7	0.4	0.3	0.3	1.2

②  $U_0$  = rated voltage against earthed conductor; for  $U_0 = 240 V\sim$  is  $Z_S \cdot 1.04$ ; for  $U_0 = 127 V\sim$  is  $Z_S \cdot 0.55$

**Take into account the voltage drop:**

e.g. in the case of a 1.5 mm<sup>2</sup> conductor, protected by a B 16 circuit-breaker, the maximum cable length is 82 m.

If the voltage drop is below 3%, this would result in a maximum cable length (2-strand) of 17 m.

For more details on this topic, get your own copy of the technical information leaflet "Maximum cable lengths".

**Maximum cable lengths in the case of different voltages and cross sections on request.**

**MCBs internal resistance, power loss  
and max. permissible earth-fault loop impedance**

**Internal resistance and power loss of the miniature circuit-breakers**

Internal resistance per pole in mΩ, power loss per pole in W

Type	Rated current $I_n$ A	Device series B, C, D ①		K		Z	
		mΩ	W	mΩ	W	mΩ	W
<b>S 200 P</b>	0.2	–	–	42500	1.7	–	–
	0.3	–	–	20000	1.8	–	–
	0.5	5500	1.4	6340	1.6	10100	2.5
	0.75	–	–	2500	1.4	–	–
	1	1440	1.4	1400	1.4	2270	2.3
	1.6	630	1.6	625	1.6	1100	2.8
	2	460	1.8	460	1.8	619	2.5
	3	211	1.9	211	1.9	211	1.9
	4	150	2.4	163	2.6	163	2.6
	6	61	2.2	67	2.4	104	3.7
	8	45	2.9	45	2.9	55	3.5
	10	14	1.4	19	1.9	21	2.1
	13	13.3	2.3	–	–	–	–
	16	9.7	2.5	8.2	2.1	10.9	2.8
	20	7.3	2.9	7.3	2.9	7.3	2.9
25	5.6	3.5	5.6	3.5	5.6	3.5	
32	4.1	4.2	4.1	4.2	4.1	4.2	
40	4.0	6.4	4.0	6.4	4.0	6.4	
50	1.2	3.0	1.2	3.0	1.8	4.4	
63	1.4	5.6	1.3	5.2	1.3	5.2	

① Current intensities 0.5 – 4 apply exclusively to C-type trip characteristics.

**Maximum permissible earth-fault loop impedance ZS at  $U_0 = 230 V\sim$  ②  
to ensure compliance with the operation conditions pursuant to IEC 60364-4.  
Operating time < 0.4 s; at 400 V~ < 0.2 s and at > 400 V~ < 0.1 s  
The instantaneous release of the MCB ensures an operating time of ≤ 0.1 s (TN system).**

Determined according to DIN VDE 0100-520 sheet 2:2002-11(source impedance = 300 mΩ, c = 0.95 and conductor temperature 70 °C = factor 0.8). The internal resistance of the MCB is already included.

**S 200 P**

Rated current $I_n$ A	<b>B</b> max. $Z_s$ Ω	<b>C</b> max. $Z_s$ Ω	<b>D</b> max. $Z_s$ Ω	<b>K</b> max. $Z_s$ Ω	<b>Z</b> max. $Z_s$ Ω
0.2	–	–	–	40	–
0.3	–	–	–	34.8	–
0.5	–	46	27.4	26.5	143
0.75	–	–	–	19.4	–
1	–	23	15	15	74.4
1.6	–	14.4	9.6	9.6	47.9
2	–	11.5	7.8	7.8	38.3
3	–	7.7	11.8	5.3	25.3
4	–	5.8	8.8	4.1	19.1
6	7.6	3.8	5.9	2.7	12.7
8	–	2.8	5.7	2.0	9.5
10	4.6	2.3	3.5	1.6	7.6
13	3.5	1.7	2.7	–	–
16	2.9	1.4	2.2	1.0	4.7
20	2.3	1.1	1.7	0.8	3.8
25	1.8	0.9	1.4	0.6	3.0
32	1.4	0.7	1.1	0.5	2.4
40	1.1	0.6	0.9	0.4	1.9
50	0.9	0.5	0.7	0.3	1.5
63	0.7	0.4	0.6	0.25	1.1

②  $U_0$  = rated voltage against earthed conductor; for  $U_0 = 240 V\sim$  is  $Z_s \cdot 1.04$ ; for  $U_0 = 127 V\sim$  is  $Z_s \cdot 0.55$

Take into account the voltage drop (see the previous page)

**Derating of load capability of MCBs**

Derating of MCBs load capability takes in consideration 3 factors:

- ambient temperature
- continuity (duration) of the load
- influence of adjacent devices

The 3 rules to obtain the effective value of  $I_n$  are the following:

**1. Deviating ambient temperature:**

The rated value of the current of a miniature circuit-breaker refers to a temperature of 20 °C for circuit-breakers with characteristics K and Z and 30 °C for characteristics B, C and D.

The following tables contain the derating of load capability of S 200/M/P MCBs\* with temperature from -40 °C to 70 °C for the curves B, C, D and K, Z.

**Max. operating current depending on the ambient temperature of a circuit-breaker in load circuit of characteristics type B, C and D**

B, C and D	Ambient temperature T (°C)											
	- 40	- 30	- 20	- 10	0	10	20	30	40	50	60	70
In (A)												
0.5	0.67	0.65	0.62	0.60	0.58	0.55	0.53	0.50	0.47	0.44	0.41	0.37
1.0	1.33	1.29	1.25	1.20	1.15	1.11	1.05	1.00	0.94	0.88	0.82	0.75
1.6	2.13	2.07	2.00	1.92	1.85	1.77	1.69	1.60	1.51	1.41	1.31	1.19
2.0	2.67	2.58	2.49	2.40	2.31	2.21	2.11	2.00	1.89	1.76	1.63	1.49
3.0	4.0	3.9	3.7	3.6	3.5	3.3	3.2	3.0	2.8	2.6	2.4	2.2
4.0	5.3	5.2	5.0	4.8	4.6	4.4	4.2	4.0	3.8	3.5	3.3	3.0
6.0	8.0	7.7	7.5	7.2	6.9	6.6	6.3	6.0	5.7	5.3	4.9	4.5
8.0	10.7	10.3	10.0	9.6	9.2	8.8	8.4	8.0	7.5	7.1	6.5	6.0
10.0	13.3	12.9	12.5	12.0	11.5	11.1	10.5	10.0	9.4	8.8	8.2	7.5
13.0	17.3	16.8	16.2	15.6	15.0	14.4	13.7	13.0	12.3	11.5	10.6	9.7
16.0	21.3	20.7	20.0	19.2	18.5	17.7	16.9	16.0	15.1	14.1	13.1	11.9
20.0	26.7	25.8	24.9	24.0	23.1	22.1	21.1	20.0	18.9	17.6	16.3	14.9
25.0	33.3	32.3	31.2	30.0	28.9	27.6	26.4	25.0	23.6	22.0	20.4	18.6
32.0	42.7	41.3	39.9	38.5	37.0	35.4	33.7	32.0	30.2	28.2	26.1	23.9
40.0	53.3	51.6	49.9	48.1	46.2	44.2	42.2	40.0	37.7	35.3	32.7	29.8
50.0	66.7	64.5	62.4	60.1	57.7	55.3	52.7	50.0	47.1	44.1	40.8	37.3
63.0	84.0	81.3	78.6	75.7	72.7	69.6	66.4	63.0	59.4	55.6	51.4	47.0
80.0	112.6	107.2	102.1	97.2	92.6	88.2	84.0	80.0	76.0	72.2	68.6	65.2
100.0	140.7	134.0	127.6	121.6	115.8	110.3	105.0	100.0	95.0	90.3	85.7	81.5
125.0	175.9	167.5	159.5	151.9	144.7	137.8	131.3	125.0	118.8	112.8	107.2	101.8

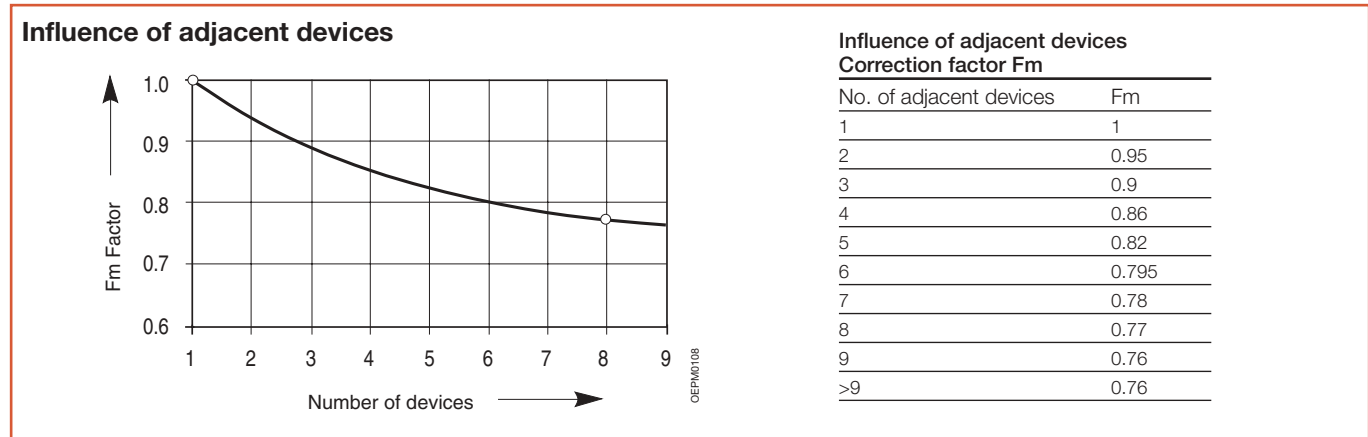
**Max. operating current depending on the ambient temperature of a circuit-breaker in load circuit of characteristics type K and Z**

K and Z	Ambient temperature T (°C)											
	- 40	- 30	- 20	- 10	0	10	20	30	40	50	60	70
In (A)												
0.5	0.66	0.64	0.61	0.59	0.56	0.53	0.50	0.47	0.43	0.40	0.35	0.31
1.0	1.32	1.27	1.22	1.17	1.12	1.06	1.00	0.94	0.87	0.79	0.71	0.61
1.6	2.12	2.04	1.96	1.88	1.79	1.70	1.60	1.50	1.39	1.26	1.13	0.98
2.0	2.65	2.55	2.45	2.35	2.24	2.12	2.00	1.87	1.73	1.58	1.41	1.22
3.0	4.0	3.8	3.7	3.5	3.4	3.2	3.0	2.8	2.6	2.4	2.1	1.8
4.0	5.3	5.1	4.9	4.7	4.5	4.2	4.0	3.7	3.5	3.2	2.8	2.4
6.0	7.9	7.6	7.3	7.0	6.7	6.4	6.0	5.6	5.2	4.7	4.2	3.7
8.0	10.8	10.2	9.8	9.4	8.9	8.5	8.0	7.5	6.9	6.3	5.7	4.9
10.0	13.2	12.7	12.2	11.7	11.2	10.6	10.0	9.4	8.7	7.9	7.1	6.1
13.0	17.2	16.6	15.9	15.2	14.5	13.8	13.0	12.2	11.3	10.3	9.2	8.0
16.0	21.2	20.4	19.6	18.8	17.9	17.0	16.0	15.0	13.9	12.6	11.3	9.8
20.0	26.5	25.5	24.5	23.5	22.4	21.2	20.0	18.7	17.3	15.8	14.1	12.2
25.0	33.1	31.9	30.6	29.3	28.0	26.5	25.0	23.4	21.7	19.8	17.7	15.3
32.0	42.3	40.8	39.2	37.5	35.8	33.9	32.0	29.9	27.7	25.3	22.6	19.6
40.0	52.9	51.0	49.0	46.9	44.7	42.4	40.0	37.4	34.6	31.6	28.3	24.5
50.0	66.1	63.7	61.2	58.6	55.9	53.0	50.0	46.8	43.3	39.5	35.4	30.6
63.0	83.3	80.3	77.2	73.9	70.4	66.8	63.0	58.9	54.6	49.8	44.5	38.6

\* the same tables contain derating of FS 201 and DS 200 RCBOs with temperature from -25 °C to 55 °C for the curves B, C and K.

2. Multiply the rated current (equivalent) referring to the new temperature by another factor 0.9 only for loads that last for more than an hour.

3. Multiply the rated current (equivalent) referring to the new temperature by another factor only in case of presence of several devices installed alongside each other; see table.



Example: S 202 C 16 with T=35 °C

Type of use	Values to use	Formula	Calculation	Result
Load less than an hour	In (amb. t°) -see tables-			In=15.43 A
Load more than an hour	In (amb. t°) -see tables-, 0.9	In (amb. t°)x0.9	15.43x0.9	In=13.9 A
Load over an hour with 8 adj.devices	In (amb. t°) -see tables-, 0.9, Fm (0.77)	In (amb. t°)x0.9x0.77	15.43x0.9x0.77	In=10.7 A

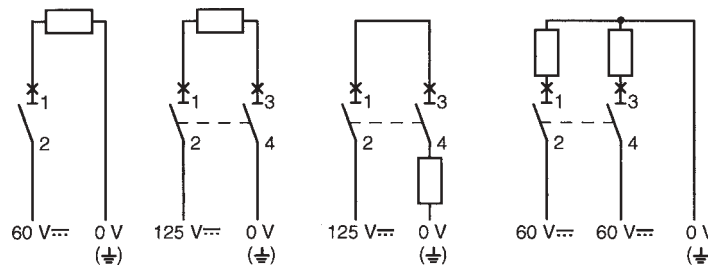


### Use of S 200/S 200 M/S 200 P miniature circuit-breakers in direct current circuits 60 VDC/125 VDC

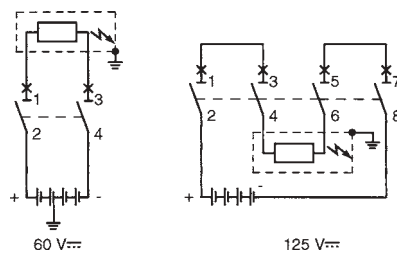
In DC systems up to 60 VDC or, as the case may be, series connection up to 125 VDC, customary S 200/S 200 M series MCBs can be used. Polarity does not need to be taken into consideration, the outgoing circuit may be implemented from above or below the device.

For higher direct voltage up to 440 VDC devices of the S 280 UC series must be used.

Example for max. permissible voltages between conductors depending on the number of poles and type of connection.



Examples for different voltages between a conductor and earth where voltages between conductors are identical:



### Performance in altitude of MCBs

Up to the height of 2000 m, MCBs do not undergo any alterations in their rated performances. Over this height the properties of the atmosphere change in terms of composition, dielectric capacity, cooling capacity and pressure, therefore the performances of the MCBs undergo derating, which can basically be measured in terms of variations in significant parameters, such as the maximum operating voltage and the rated current.

#### S 200/M/P

Altitude[m]	2000	3000	4000
Rated service voltage $U_e[V]$	440	380	380
Rated current $I_n$	$I_n$	$0.96 \times I_n$	$0.93 \times I_n$

### Variation of tripping thresholds of MCBs according to network frequency

The circuit-breakers are calibrated for a current with a frequency range between 50 and 60 Hz.

For other frequency values, the electro-magnetic tripping current varies according to the multiplication factor H.

	D.C.	100 Hz	200Hz	400Hz
H	1.5	1.1	1.2	1.5

For the thermal trip, on the other hand, there is no variation because it is independent of the network frequency.

#### Example:

S 202 C10 supplied at 50-60 Hz, the electro-magnetic tripping current is:  $50 A \leq I_m \leq 100 A$ ;  
S 202 C10 supplied at 400 Hz, the electro-magnetic tripping current is:  $75 A \leq I_m \leq 150 A$ .

### Lighting circuit protection

#### Selection of circuit-breakers for the protection of lighting circuit and calculation of their rated current

To select the correct circuit-breaker for use in the protection of lighting circuits you need to know the type of load based on which you will work out the breaker's rated current. The protection circuit utilization current can be calculated simply starting with the rated power and the lighting voltage, or it may be supplied directly by the device manufacturer.

Considering the utilization current, it is important to select the version of the breaker with a rated current just above the value calculated, defining the cable cross-section accordingly.

The tables below show the rated current values of the circuit-breakers to be used according to the type and power of the device connected.

**Table 1 High pressure discharge lamps**

230 V and 400 VAC three-phase with or without power factor correcting capacitors, star or delta connection

Mercury vapour fluorescent lamp	Pw [W]	<700	<1000	<2000
	I [A]	6	10	16
Mercury vapour metal halogen lamp	Pw [W]	<375	<1000	<2000
	I [A]	6	10	16
High pressure sodium discharge lamp	Pw [W]	<400		<1000
	I [A]	6		16

**Table 2 Fluorescent lamps**

230 VAC single-phase/three-phase with neutral (400 V), with star connection.

The tables indicate the rated current of the circuit-breakers according to the lamp power and type of power supply.

#### Example of calculation

- Starter dissipated power: 25% of lamp power
- Reference temperature: 30 and 40 °C according to circuit-breaker
- Power factor: lamp without capacitors  $\cos\phi=0.6$   
lamp with capacitors  $\cos\phi=0.86$

#### Method of calculation

- $IB = (PL * n^{\circ}L * KST * KC) / (Un * \cos\phi)$  where:
  - $Un$  = rated voltage 230 V
  - $\cos\phi$  = power factor
  - $PL$  = lamp power
  - $n^{\circ}L$  = number of lamps per phase
  - $KST$  = 1.25
  - $KC$  = 1 for star connection and 1.732 for delta connection

Type of lamp	Tube diss. pwr. [W]	Number of lamps per phase													
Single without capacitors	18	4	9	14	29	49	78	98	122	157	196	245	309	392	490
	36	2	4	7	14	24	39	49	61	78	98	122	154	196	245
	58	1	3	4	9	15	24	30	38	48	60	76	95	121	152
Single with capacitors	18	7	14	21	42	70	112	140	175	225	281	351	443	562	703
	36	3	7	10	21	35	56	70	87	112	140	175	221	281	351
	58	2	4	6	13	21	34	43	54	69	87	109	137	174	218
Double with capacitors	2x18=36	3	7	10	21	35	56	70	87	112	140	175	221	281	351
	2x36=72	1	3	5	10	17	28	35	43	56	70	87	110	140	175
	2x58=116	1	2	3	6	10	17	21	27	34	43	54	68	87	109
In [A] - 2P and 4P circuit-breakers		1	2	3	6	10	16	20	25	32	40	50	63	80	100

Fluorescent lamps. 230 VAC three-phase – Delta connection

Type of lamp	Tube diss. pwr. [W]	Number of lamps per phase													
Single without capacitors	18	2	5	8	16	28	45	56	70	90	113	141	178	226	283
	36	1	2	4	8	14	22	28	35	45	56	70	89	113	141
	58	0	1	2	5	8	14	17	21	28	35	43	55	70	87
Single with capacitors	18	4	8	12	24	40	64	81	101	127	162	203	255	324	406
	36	2	4	6	12	20	32	40	50	64	81	101	127	162	203
	58	1	2	3	7	12	20	25	31	40	50	63	79	100	126
Double with capacitors	2x18=36	2	4	6	12	20	32	40	50	64	81	101	127	162	203
	2x36=72	1	2	3	6	10	16	20	25	32	40	50	63	81	101
	2x58=116	0	1	1	3	6	10	12	15	20	25	31	39	50	63
In [A] - 3P circuit-break.		1	2	3	6	10	16	20	25	32	40	50	63	80	100

## Transformer protection

### Insertion current

When the LV/LV transformers are powered up, very strong currents occur, which must be considered when selecting the protective device. The peak value of the first current wave often reaches a value between 10 and 15 times the transformer's effective rated current.

For power ratings below 50 kVA, it may reach between 20 and 25 times the rated current. This transient current decreases very rapidly with a time constant T varying from several ms to 10, 20 ms.

### Main protection on the primary side

The tables below are the result of a set of tests on co-ordination between circuit-breakers and BT/BT transformers. The transformers used in the tests are normalized. The table, referring to a primary supply voltage of 230 or 400 V and to single-phase and three-phase transformers, indicate which circuit-breaker should be used according to the transformer power rating.

The transformers considered have the primary winding outside the secondary winding.

The circuit-breakers suggested allow:

- transformer protection in the event of maximum short-circuit;
- prevention of unwanted tripping when the primary winding is powered up using
  1. modular circuit-breakers with a high magnetic threshold, curve D or K
  2. circuit-breakers with magnetic only releaser;
- guaranteed circuit-breaker electrical life.

### Protection on the secondary side

Due to the transformer's high insertion current, the circuit-breaker on the primary winding may not guarantee thermal protection for the transformer and its feeder line on the primary side.

This is typical of modular circuit-breakers which must have a higher rated current than the transformers. In such cases, in the event of a single-phase short-circuit at the transformer's primary terminals (minimum I<sub>cc</sub> at end of line), check that the circuit-breaker's magnetic releaser is tripped. In the normal application in distribution panels, this condition is always satisfied provided that the length of the feeder lines is reduced.

The transformer can be provided with thermal protection by installing a circuit-breaker with a rated current less than or equal to that of the transformer secondary winding immediately downstream of the LV/LV transformer.

In lighting systems protection against overloads is not necessary if the number of light points is clearly defined (no overloads).

Moreover, the Standard in force for these systems recommends the omission of protection against overloads in circuits in which unwanted tripping may prove hazardous, e.g.: circuits which supply fire-fighting equipment.

#### Single-phase transformer (primary voltage 230 V)-1P and 1P+N MCBs

Pn [kVA]	In [A]	ucc (%)	Circuit-breaker on primary side (1) and (2)
0.1	0.4	13	S 2* D1 o K1
0.16	0.7	10.5	S 2* D2 o K2
0.25	1.1	9.5	S 2* D3 o K3
0.4	1.7	7.5	S 2* D4 o K4
0.63	2.7	7	S 2* D6 o K6
1	4.2	5.2	S 2* D10 o K10
1.6	6.8	4	S 2* D16 o K16
2	8.4	2.9	S 2* D16 o K16
2.5	10.5	3	S 2* D20 o K20
4	16.9	2.1	S 2* D40 o K40
5	21.1	4.5	S 2* D50 o K50
6.3	27	4.5	S 2* D63 o K63
8	34	5	S 290 D80
10	42	5.5	S 290 D100
12.5	53	5.5	S 290 D100

#### Single-phase transformer (primary voltage 400 V)-2P MCBs

Pn [kVA]	In [A]	ucc (%)	Circuit-breaker on primary side (1) and (2)
1	2.44	8	S 2* D6 o K6
1.6	3.9	8	S 2* D10 o K10
2.5	6.1	3	S 2* D16 o K16
4	9.8	2.1	S 2* D20 o K20
5	12.2	4.5	S 2* D32 o K32
6.3	15.4	4.5	S 2* D40 o K40
8	19.5	5	S 2* D50 o K50
10	24	5	S 2* D63 o K63
12.5	30	5	S 2* D63 o K63
16	39	5	S 290 D80
20	49	5	S 290 D100

#### Three-phase transformer (primary voltage 400 V)-3P, 3P+N and 4P MCBs

Pn [kVA]	In [A]	ucc (%)	Circuit-breaker on primary side (1) and (2)
5	7	4.5	S 2* D20 o K20
6.3	8.8	4.5	S 2* D20 o K20
8	11.6	4.5	S 2* D32 o K32
10	14	5.5	S 2* D32 o K32
12.5	17.6	5.5	S 2* D40 o K40
16	23	5.5	S 2* D63 o K63
20	28	5.5	S 2* D63 o K63
25	35	5.5	S 290 D80
31.5	44	5	S 290 D80
40	56	5	S 290 D80
50	70	4.5	S 290 D100

S 2\*.. = S 200, S 200 M, S 200 P

(1) With modular or magnetic only circuit-breakers, without thermal adjustment, thermal protection is required for the transformer's secondary winding.

(2) Breaking capacity selected according to estimated Icc at the point where the breaker is installed.

**Double tampoprinting of S 200 P**

**The breaking capacity**

For the modular circuit-breakers realized according to IEC/EN 60898 standard, the breaking capacity is expressed by the  $I_{cn}$  quantity, indicated in Ampere, contained within a rectangle on the front side of the device. The max value of rated short-circuit capacity ( $I_{cn}$ ) considered by this standard is 25000 A.

Always according to IEC/EN 60898 standard, the ratio between the service short-circuit capacity ( $I_{cs}$ ) and the rated short-circuit capacity ( $I_{cn}$ ) – K factor – shall have to be conforming to the enclosed table.

<b><math>I_{cn}</math></b>	<b>K</b>
< 6000 A	1
> 6000 A	
< 10000 A	0.75 <sup>(*)</sup>
>10000 A	0.5 <sup>(**)</sup>

(\*)  $I_{cs}$  minimum value: 6000 A

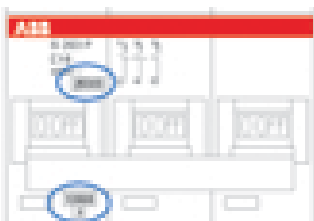
(\*\*)  $I_{cs}$  minimum value: 7500 A

**Limiting class**

The Manufacturer of the circuit-breaker has the right to declare the energy limiting class of the device. According to IEC/EN 60898 standard, the Manufacturer classifies the circuit-breaker with a limiting class which ranges from 1 to 3 according to the  $I^2t$  values let through by the circuit-breaker for rated current up to 16 A and rated currents exceeding 16 A up to 32 A included, according to the table below.

Short-circuit rated capacity (A)	Limited energy classes					
	1		2		3	
	$I^2t$ max (A <sup>2</sup> s)		$I^2t$ max (A <sup>2</sup> s)		$I^2t$ max (A <sup>2</sup> s)	
	B-C Type	B Type	C Type	B Type	C Type	
3000	No	31000	37000	15000	18000	
4500	limits	60000	75000	25000	30000	
6000	are	100000	120000	35000	42000	
10000	specified	240000	290000	70000	84000	

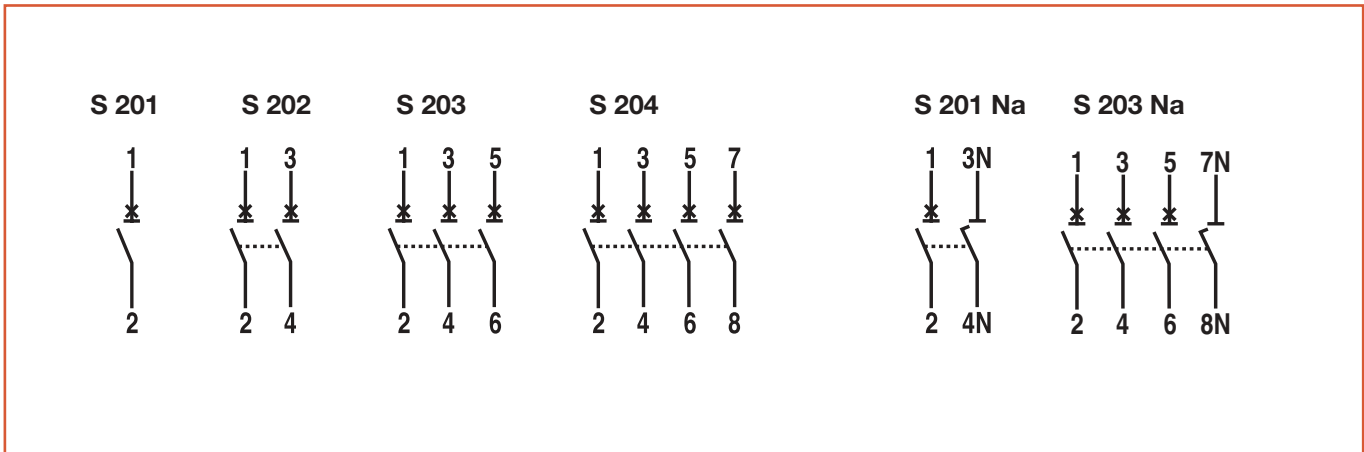
Short-circuit rated capacity (A)	Limited energy classes					
	1		2		3	
	$I^2t$ max (A <sup>2</sup> s)		$I^2t$ max (A <sup>2</sup> s)		$I^2t$ max (A <sup>2</sup> s)	
	B-C Type	B Type	C Type	B Type	C Type	
3000	No	40000	50000	18000	22000	
4500	limits	80000	100000	32000	39000	
6000	are	130000	160000	45000	55000	
10000	specified	310000	370000	90000	110000	



For instance, a circuit-breaker with rated current 16 A, B characteristic, with short-circuit rated capacity equal to 6 kA belongs to class 3 if it lets through max 35000 A<sup>2</sup>s of specific energy. The limiting class value (1, 2 or 3) is indicated on the front side of the device, within a square, in addition to the breaking capacity.

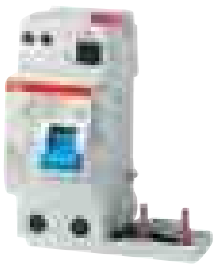
As regards the miniature circuit-breakers S200P series, two different breaking capacities are indicated on the front side of the device, contained in a rectangle.

The breaking capacity indicated above the operating toggle is the one of the device, according to IEC/EN 60898 standard, the breaking capacity indicated under the lever is regarding the limiting class which, according to the standard, can be expressed only for values up to 10000 A.

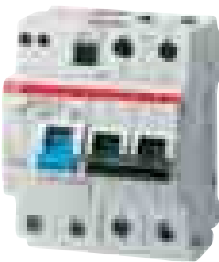




**RCCBs**



**RCD-blocks**



**RCBOs**

## Functions and classification criteria for RCDs

A residual current operated circuit-breaker is an amperometric protection device which is tripped when the system leaks a significant current to earth.

This device continuously calculates the vector sum of the single-phase or three-phase system line currents and while the sum is equal to zero allows electricity to be supplied. This supply is rapidly interrupted if the sum exceeds a value preset according to the sensitivity of the device.

Residual current operated circuit-breakers can be classed according to four parameters:

- type of construction
- detectable wave form
- tripping sensitivity
- tripping time.

Depending on the type of construction, RCDs may be classed as:

- RCBOs (magnetothermic with overcurrent protection)
- RCCBs (without overcurrent protection releaser incorporated)
- RCD blocks.

RCBOs combine, in a single device, the residual current function and the overcurrent protection function typical of MCBs. RCBOs are tripped by both current leakage to earth and overloads and short-circuits and they are self-protecting up to a maximum short-circuit current value indicated on the label.

RCCBs are only sensitive to current leakage to earth. They must be used in series with an MCB or fuse which protects them from the potentially damaging thermal and dynamic stresses of any overcurrents.

These devices are used in systems already equipped with MCBs which preferably limit the specific energy passing through, also acting as the main disconnecting switches upstream of any derived MCBs (e.g.: domestic consumer unit).

RCD blocks are residual current devices suitable for assembly with a standard MCB. IEC/EN 61009 app. G only allows assembly of RCBOs once on site, that is to say outside the factory, using adaptable RCD blocks and the appropriate MCBs. Any subsequent attempts to separate them must leave permanent visible damage. The residual current operated circuit-breaker obtained in this way maintains both the electrical characteristics of the MCB and those of the RCD block.

According to the wave form of the earth leakage currents they are sensitive to, the RCDs may be classed as:

- AC type (for alternating current only)
- A type (for alternating and/or pulsating current with DC components)
- B type (for alternating and/or pulsating current with DC components and continuous fault current).

AC type RCDs are suitable for all systems where users have sinusoidal earth current.

They are not sensitive to impulsive leakage currents up to a peak of 250 A (8/20 wave form) such as those which may occur due to overlapping voltage impulses on the mains (e.g.: insertion of fluorescent bulbs, X-ray equipment, data processing systems and SCR controls).

A type RCDs are not sensitive to impulsive currents up to a peak of 250 A (8/20 wave form).

They are particularly suitable for protecting systems in which the user equipment has electronic devices for rectifying the current or phase cutting adjustment of a physical quantity (speed temperature, light intensity, etc.) supplied directly by the mains without the insertion of transformers and insulated in class I (class II is, by definition, free of faults to earth). These devices may generate a pulsating fault current with DC components which the A type RCD can recognise.

B type RCDs are recommended for use with drives and inverters for supplying motors for pumps, lifts, textile machines, machine tools, etc., since they recognise a continuous fault current with a low level ripple.

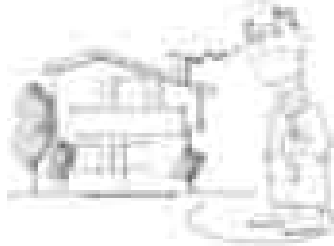
Type AC and type A RCDs comply with IEC/EN 61008/61009, whilst type B RCDs are not yet covered by any reference Standard for the household and similar use. Type B is covered only by IEC/EN 60947-2 for low voltage switchgear and control gear and by IEC/EN 60755 for residual current operated protective devices.

According to tripping sensitivity ( $I\Delta n$  value), RCDs may be divided into the following categories:

- low-sensitivity ( $I\Delta n > 0.03$  A), not suitable for protection against direct contacts; co-ordinated with the earth system according to the formula  $I\Delta n < 50/R$ , to provide protection against indirect contacts;
- high-sensitivity ( $I\Delta n$ : 0.01...0.03 A), or “physiologically sensitivity” for protection against indirect contacts, with simultaneous additional protection against direct contacts.
- against fire (up to 500 mA) according to IEC/EN 60364

### Residual current sensitivity and environment

#### Household and special environments

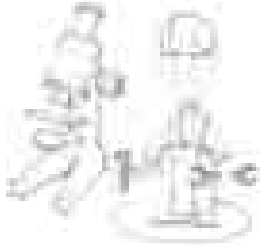


$$I\Delta n \leq 30 \text{ mA}$$

#### High-sensitivity or physiologically sensitive RCDs

IEC/EN 60364 make the use of these devices mandatory in all bathrooms, showers and private and public swimming pools and environments in which plugs and sockets may be installed without insulating or low safety voltage transformers.

#### Laboratories, service industry and small industry



$$I\Delta n \text{ from } 30 \text{ mA to } 500 \text{ mA}$$

#### Low-sensitivity RCDs

#### Large service industry and industrial complex



$$I\Delta n \text{ from } 500 \text{ mA to } 1000 \text{ mA}$$

According to their tripping time, RCDs can be classed as:

- instantaneous or rapid or general
- type S selective, or - incorrectly - delayed.

Selective RCDs (RCBOs - RCCBs or RCD-blocks) have a delayed tripping action and are installed upstream of other rapid residual current operated circuit-breakers to guarantee selectivity and limit the power out only to the portion of the system affected by a fault.



The tripping time is not adjustable. It is set according to a predetermined time – current characteristic with an intrinsic delay for small currents, tending to disappear as the current grows.

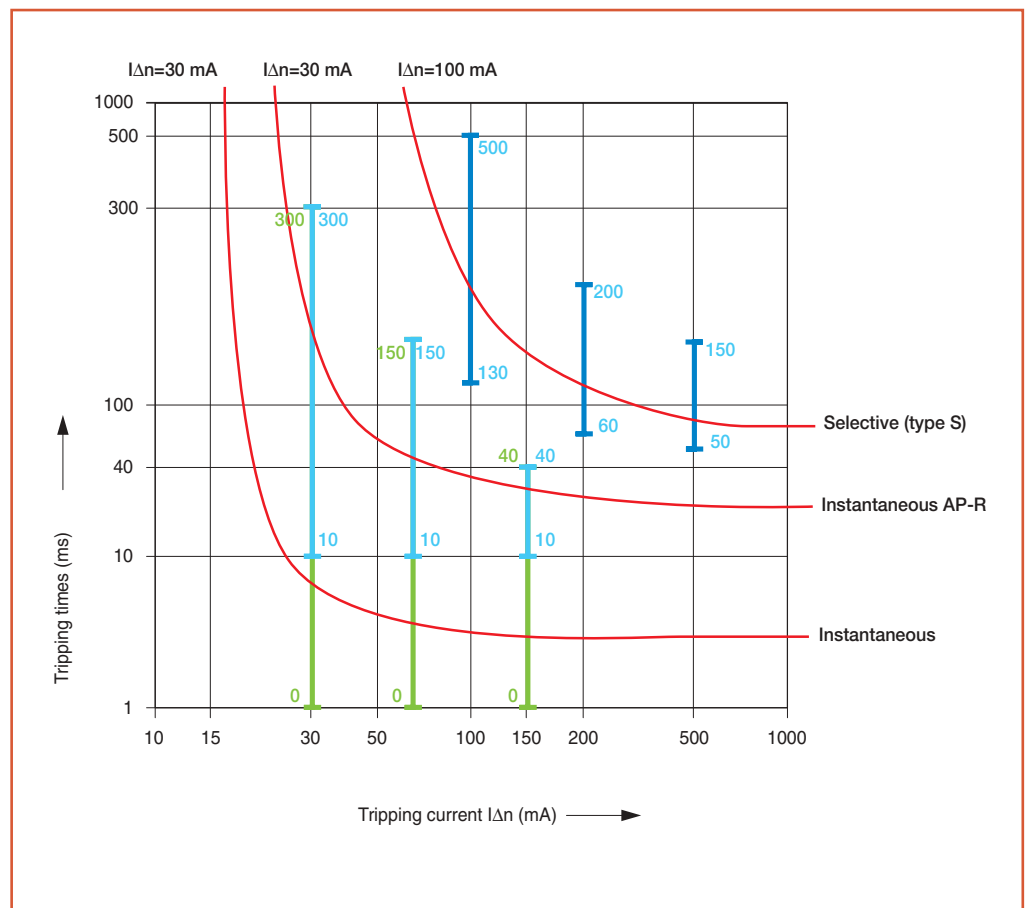
IEC/EN 61008 and 61009 establish the tripping times relative to the type of RCD and the  $I_{\Delta n}$ .

Type	$I_n$ [A]	$I_{\Delta}$ [A]	Tripping times (s)xcurrents			
			$1 \times I_{\Delta}$	$2 \times I_{\Delta}$	$5 \times I_{\Delta}$	500A
Generic	Any	Any	0.3	0.15	0.04	0.04
S (selective)	$\geq 25$	$> 0.030$	0.13-0.5	0.06-0.2	0.05-0.15	0.04-0.15

The range of ABB RCDs also includes AP-R (anti-disturbance) devices which trip according to the limit times allowed by the Standards for instantaneous RCDs. This function is due to the slight tripping delay (approx. 10 ms) relative to the standard instantaneous ones.

The graph shows the comparison of the qualitative tripping curves for:

- a 30 mA instantaneous RCD
- a 30 mA AP-R instantaneous RCD
- a 100 mA selective RCD (type S)



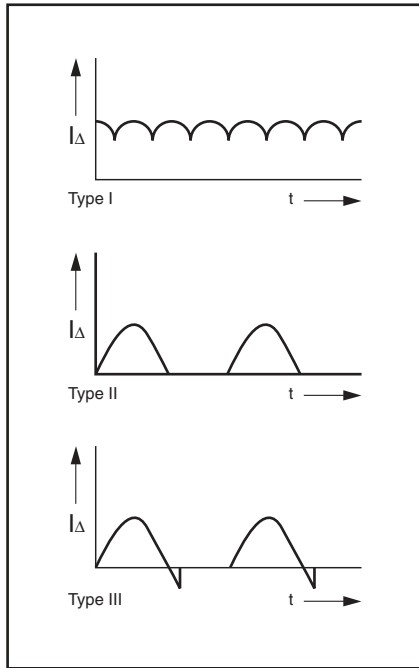
Note: this is a qualitative chart; it is referred only to industrial frequencies of 50-60 Hz.

For many years the manufacturers of electrical appliances and other electrical equipment have been using electronic components to improve the performance of their products, increase comfort and save energy.

Loads such as washing machines with variations in spin speed, variable-speed tools, thermostats and dimmers operate at currents with varying wave shapes (pulsating currents with DC components, inverted currents, levelled currents).

There are three different types of current (fig. A).

Figure A



**Type I** Inverted current with DC components, with value continuously greater than zero, caused by:

- three-phase current
- median point and three-phase current
- jumper connection
- unidirectional rectification with inductive and capacitive levelling
- Villard type voltage doubling.

**Type II** Pulsating current with DC components sometimes with zero value, caused by ohmic load with:

- unidirectional rectification without levelling
- single-phase jumper connection with or without levelling
- regulation of the symmetrical and asymmetrical phase operating angle (dimmers, RPM meters).

**Type III** Pulsating current with DC components passing through zero caused by inductive loads with:

- unidirectional rectification without levelling
- single-phase jumper connection with or without levelling
- symmetrical and asymmetrical regulation of the phase operating angle (dimmers, RPM meters).

If there is a fault current to earth after an insulation fault on live parts supplied with rectified current, the contact voltages are the same size as in alternating current.

Standard RCDs, which are designed to operate with alternating current at 50-60 Hz, are insensitive to fault currents with DC components.

Non-tripping of a RCD when there are fault currents with DC components may have two consequences:

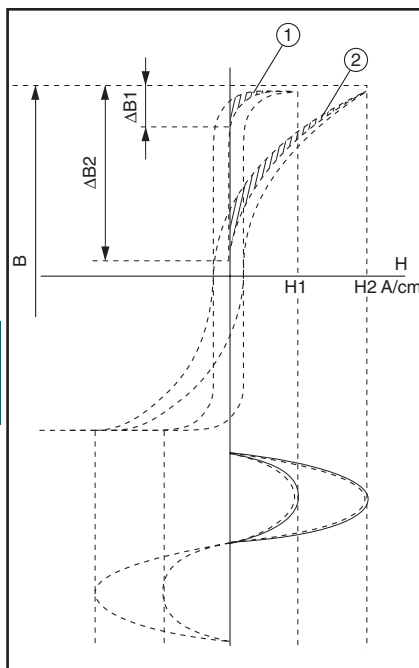
- it is dangerous for people and equipment (electrocution or fire)
- it causes desensitivation of RCD due to excessive polarization of the transformer core that is no longer able to send the necessary power supply to the releaser (figure B - hysteresis cycle 1).

To avoid this problem, type A RCDs must be used. Thanks to the specific technology of the residual current transformer toroidal cores, the supply level is increased to a value sufficient to trigger the releaser or tripping mechanism (figure B - hysteresis cycle 2).

The sensitivity of the tripping mechanism is further increased by its connection to an electrical circuit sensitive to the wave shape of the current.

In this way the tripping of the RCD is assured for any unidirectional pulsating wave shape even in case of overlapping of a DC component up to 6 mA.

Figure B



## Selectivity

RCDs raise similar issue to those surrounding the installation of MCBs, and in particular the need to reduce to a minimum the parts of the system out of order in the event of a fault.

For RCBOs the problem of selectivity in the case of short-circuit currents may be handled with the same specific criteria as for MCBs.

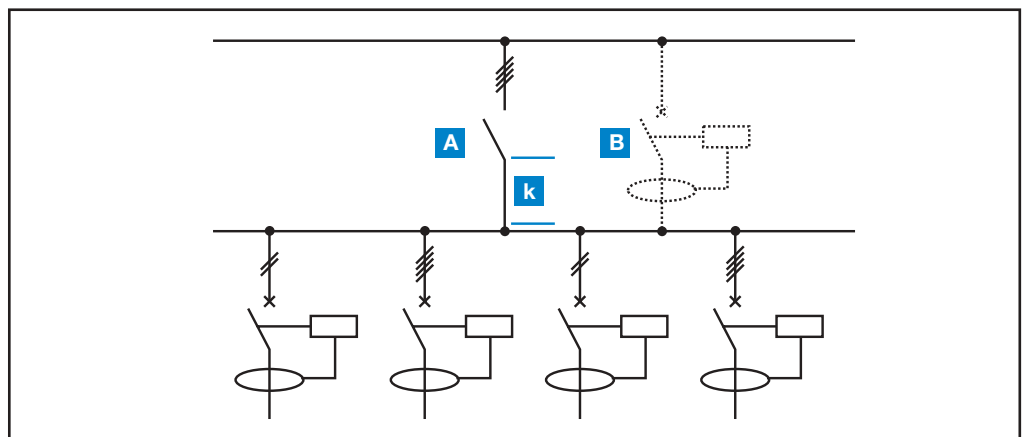
However, for correct residual current protection, the more important aspects are linked to tripping times. Protection against contact voltages is only effective if the maximum times indicated on the safety curve are not exceeded.

If an electrical system has user devices with earth leakage currents which exceed the normal values (e.g.: presence of capacitor input filters inserted between the device phase and earth cables) or if the system consists of many user devices, it is good practice to install various RCDs, on the main branches, with an upstream main residual current or non-residual current device instead of a single main RCD.

### Horizontal selectivity

The non-residual current main circuit-breaker provides “horizontal selectivity”, preventing an earth fault at any point on the circuit or small leakage from causing unwanted main circuit-breaker tripping, which would put the entire system out of order.

However, in this way, section k of the circuit between the main circuit-breaker and the RCDs remains without “active” protection. Using a main RCD to protect it would lead to problems with “vertical selectivity”, which require tripping of the various devices to be co-ordinated, so that service continuity and system safety are not compromised. In this case, selectivity may be amperometric (partial) or chronometric (total).



### Vertical selectivity

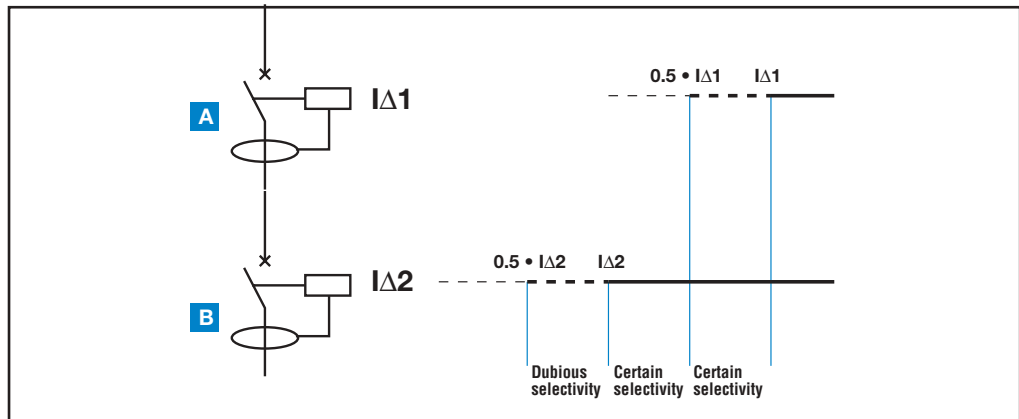
Vertical selectivity may also be established for residual current tripping, bearing in mind that in working back from system peripheral branches to the main electrical panels the risk of unskilled persons coming into contact with dangerous parts is significantly reduced.

### Amperometric (partial) selectivity

Selectivity may be created by placing low-sensitivity RCDs upstream and higher-sensitivity RCDs downstream.

An essential condition which must be satisfied in order to achieve selective co-ordination is that the  $I_{\Delta 1}$  value of the breaker upstream (main breaker) is more than double the  $I_{\Delta 2}$  value of the breaker downstream. The operative rule to obtain an amperometric (partial) selectivity is  $I_{\Delta n}$  of the upstream breaker =  $3 \times I_{\Delta n}$  of the downstream breaker (e. g.: F 204, A type, 300 mA upstream; F 202, A type, 100 mA downstream).

In this case, selectivity is partial and only the downstream breaker trips for earth fault currents  $I_{\Delta 2} < I_{\Delta m} < 0.5 \cdot I_{\Delta 1}$ .



### Chronometric (total) selectivity

To achieve total selectivity, delayed or selective RCDs must be installed.

The tripping times of the two devices connected in series must be co-ordinated so that the total interruption time  $t_2$  of the downstream breaker is less than the upstream breaker's no-response limit time  $t_1$ , for any current value. In this way, the downstream breaker completes its opening before the upstream one.

To completely guarantee total selectivity, the  $I_{\Delta}$  value of the upstream device must also be more than double that of the downstream device in accordance with IEC 64-8/563.3, comments. The operative rule to obtain an amperometric (partial) selectivity is  $I_{\Delta n}$  of the upstream breaker =  $3 \times I_{\Delta n}$  of the downstream breaker (e. g.: F 204, S type, 300 mA upstream; F 202, A type, 100 mA downstream).

For safety reasons, the delayed tripping times of the upstream breaker must always be below the safety curve.

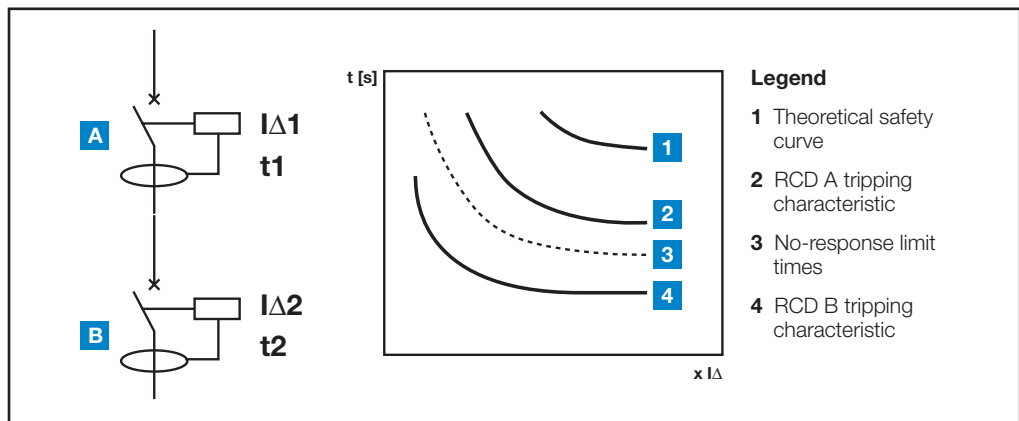


Table of RCD selectivity

Upstream $I_{\Delta n}$ [mA]		10	30	100	300	300	500	500	1000	1000
Downstream $I_{\Delta n}$ [mA]		inst	inst	inst	inst	S	inst	S	inst	S
10	inst		■	■	■	■	■	■	■	■
30	inst			■	■	■	■	■	■	■
100	inst				■	■	■	■	■	■
300	inst					■	■	■	■	■
300	S							■	■	■
500	inst									
500	S									
1000	inst									
1000	S									

inst=instantaneous S=selective ■=amperometric (partial) selectivity ■=chronometric (total) selectivity

**Power loss of RCDs**

**RCCBs F200 series**

Rated Current In [A]	Power loss W [W]	
	2P	4P
16	1.5	-
25	2.0	4.8
40	4.8	8.4
63	7.2	13.2

**RCD-Blocks DDA200 series**

Rated current Ib [A]	Power loss $W_{Ib}^*$ [W]	
	2P	3P,4P
25	2.1	2.8
40	5.4	7.2
63	7.8	13.8

\*The power loss  $W_{Ib}$  shown in the table refers to Ib. For use with circuit-breakers with lower rated current In the power loss n W must be determined using the formula:  $W = (I / Ib) \cdot W_{Ib}$

**RCBO FS201-DS200 series**

Rated current In [A]	Power loss W [W]		
	1P+N	2P	3P,4P
1	1.8	-	-
2	1.8	-	-
4	1.8	-	-
6	2	4.1	6.2
10	2.1	2.9	4.4
13	3.7	5.2	7.7
16	4.5	4.5	6.6
20	4.8	6.4	9.3
25	6.3	8.5	12.4
32	8.8	10.9	15.7
40	9.9	15.0	21.6
50	-	11.4	18.4
63	-	17.4	28.2

**Derating of load capability of RCBOs FS 201 and DS 200**

For FS 201 and DS 200 see tables for S 200 MCBs in technical details MCBs, within the range of temperatures from -25 °C to +55 °C.

**Performance in altitude of RCDs**

Up to the height of 2000 m, ABB RCDs do not undergo any alterations in their rated performances. Over this height the properties of the atmosphere change in terms of composition, dielectric capacity, cooling capacity and pressure, therefore the performances of the RCDs undergo derating, which can basically be measured in terms of variations in significant parameters, such as the maximum operating voltage and the rated current.

**F 200/DDA 200/FS 201/DS 200**

Altitude [m]	2000	3000	4000
Rated service voltage Ue [V]	400	380	380
Rated current In	In	0.96xIn	0.93xIn

### Emergency stop using DDA 200 AE series RCD blocks

The AE series RCD block combines the protection supplied by the RCBOs with a positive safety emergency stop function for remote tripping.

In the AE version, the DDA 200 AE series RCD blocks are available.

#### Operating principle (patented)

Two additional primary circuits powered with the same voltage and equipped with the same resistance have been added to the transformer; under normal conditions the same current would flow through, but since they are wound by the same number of coils in opposite directions they cancel each other out and do not produce any flow.

One of these two windings acts as the remote control circuit: the emergency stop is obtained by interrupting the current flow in this circuit.

The positive safety is therefore obvious: an accidental breakage in the circuit is equivalent to operating an emergency control button.

#### Advantages

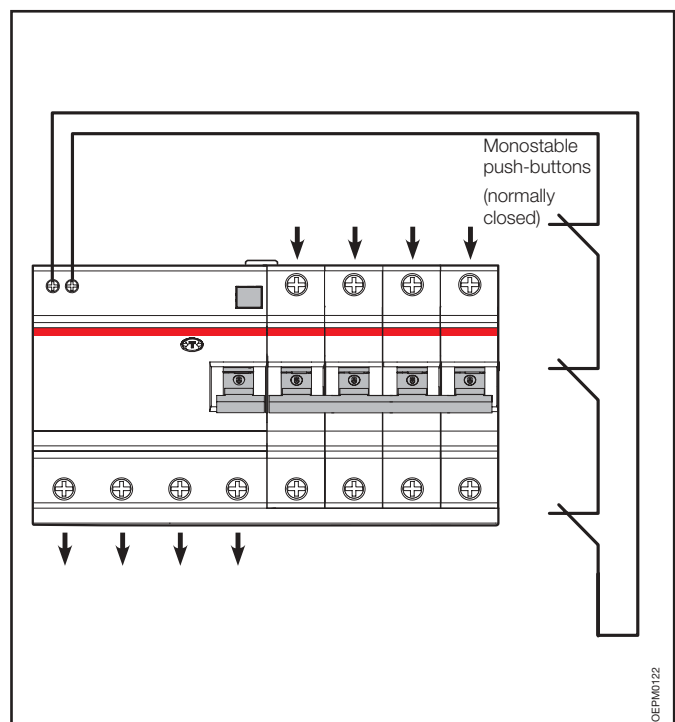
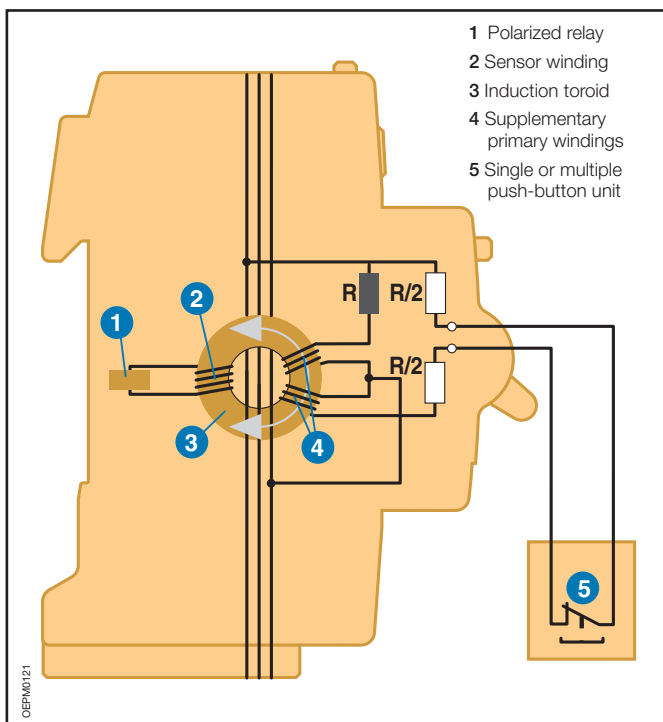
Compared with the devices which are normally used in emergency circuits, DDA 200 AE blocks have the following advantages:

- positive safety
- no undesirable tripping if there is a temporary reduction or interruption of the mains voltage
- efficient immediate operating even after long off-service periods of the installation.

#### Use

Application of the DDA 200 AE blocks complies with the requirements of IEC/EN 60364-8. They are therefore suitable, for example, for escalators, lifts, hoists, electrically operated gates, machine tools, car washes and conveyor belts.

No more than one DDA 200 AE can be controlled using the same control circuit. Each DDA 200 AE requires a dedicated control circuit.



**Unwanted tripping**

In the event of disturbance in the mains, the RCDs normally present in the system are tripped, breaking the circuit even in the absence of a true earth fault.

Disturbances of this kind are most often caused by:

- operation overvoltages caused by inserting or removing loads (opening or closing protection of control devices, starting and stopping motors, switching fluorescent lighting systems on and off, etc.)
- overvoltages of atmospheric origin, caused by direct or indirect discharges on the electrical line.

Under these circumstances, breaker tripping is unwanted, since it does not satisfy the need to avoid the risks due to direct and indirect contacts. On the contrary, the sudden and unjustified interruption of the power supply may result in very serious problems.

**AP-R RCDs**

The ABB range of AP-R anti-disturbance residual current circuit-breakers and blocks was designed to overcome the problem of unwanted tripping due to overvoltages of atmospheric or operation origin.

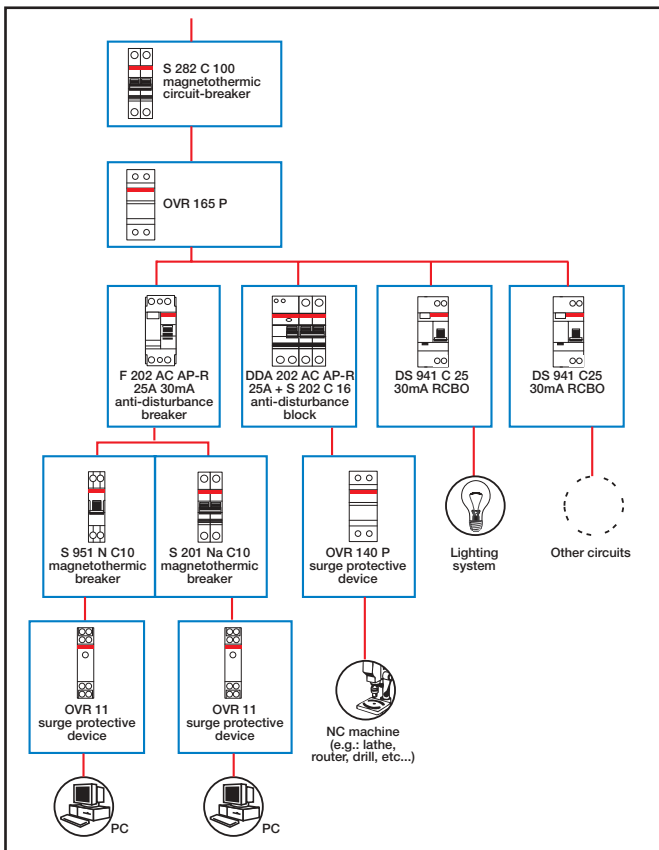
The electronic circuit in these devices can distinguish between temporary leakage caused by disturbances on the mains and permanent leakage due to actual faults, only breaking the circuit in the latter case.

AP-R residual current circuit-breakers and blocks have a slight delay into the tripping time, but this does not compromise the safety limits set by the Standards in force (release time at  $2 I\Delta n=150$  ms).

Guaranteeing conventional residual current protection, their installation in the electrical circuit therefore allows any unwanted tripping to be avoided in domestic and industrial systems in which service continuity is essential.

For continuous service of priority circuits and simultaneous protection of user devices and systems from transient overvoltage peaks, combine RCCBs and AP-R blocks with overvoltage surge protective devices OVR.

To make protection more effective and widespread, it may be useful to create a cascade system extending over several levels, like the one illustrated below.



**Provisions of the Standards**

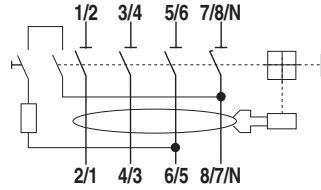
IEC/EN 61008 and IEC/EN 61009 check RCD resistance to operation overvoltages, envisaging the use of the  $0.5 \mu s/100$  kHz ring wave. All RCDs must pass the test with a current peak value of 200 A.

For overvoltages of atmospheric origin, IEC 61008 and IEC 61009 establish the resistance to a  $8/20 \mu s$  surge with 3000A peak current, but limit the provision to RCDs classed as selective. No test is required for other types of RCDs.

ABB AP-R anti-disturbance RCDs pass the general resistance test at  $0.5 \mu s/100$  kHz, also resisting the  $8/20 \mu s$  surge with the same peak current of 3000 A prescribed for the selective RCDs.

### Use of a 4P RCCB in a 3-phase circuit without neutral

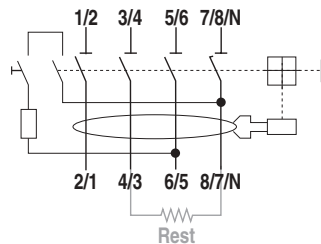
The test button circuit of these RCCBs 4P F 200 is wired inside the device between terminal 5/6 and 7/8/N as indicated below, and has been sized for an operating voltage between 110 and 254 V.



In case of installation in a 3 phase circuit without neutral, if the concatenate voltage is between 110 and 254 V for the correct working of the test button there are two possible solutions:

- 1) To connect the 3 phases to the terminals 3/4 5/6 7/8/N and the terminals 4/3 6/5 8/7/N (supply and load side respectively)
- 2) To connect the 3 phases normally (supply to terminals 1/2 3/4 5/6 and load to terminals 2/1 4/3 6/5) and to bridge terminal 1/2 and 7/8/N in order to bring to the terminal 7/8/N the potential of the first phase. In this way the test button is supplied with the phases' concatenate voltage.

If the circuit is supplied with a concatenate voltage higher than 254 V, as in the typical case of 3 phase net with concatenate voltage of 400 V (and voltage between phase and neutral of 230 V), it is not possible to use these connections because the circuit of the test button will be supplied at 400 V and could be damaged by this voltage.



$I\Delta n$ [A]	Rest [ $\Omega$ ]
0.03	3300
0.1	1000
0.3	330
0.5	200

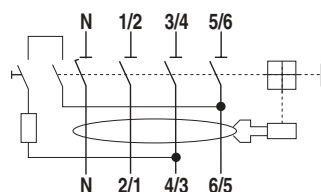
In order to allow the correct operation of the test button also in 3 phase nets at 400 V (concatenate voltage) it is necessary to connect normally the phases (supply to terminals 1/2 3/4 5/6 and load to terminals 2/1 4/3 6/5) and to bridge terminal 4/3 and 8/7/N by mean of an electric resistance as indicated above.

In this way the test button circuit is fed at 400 V but for example in an RCCB with  $I\Delta n=0.03$  A there will be the  $R_{est}=3.3$  kOhm resistance in series to the test circuit resistance.  $R_{est}$  will cause a voltage drop that leaves in the test circuit a voltage less than 254 V.  $R_{est}$  resistance must have a loosable power higher than 4 W.

In the normal operation of the RCCB (test circuit opened) the  $R_{est}$  resistance is not fed so it does not cause any power loss.

### The solution RCCBs with neutral pole on left side

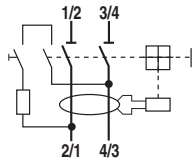
The test button circuit of these RCCBs is wired inside the device between terminal 3/4 and 5/6 as indicated below, and it has been sized for an operating voltage between 195 V and 440 V. In case of a three phase system without neutral with concatenate voltage between phases of 230 V or 400 V it is enough to connect the 3 phases normally (supply to terminals 1/2 3/4 5/6 and load to terminals 2/1 4/3 6/5) without any bridge.



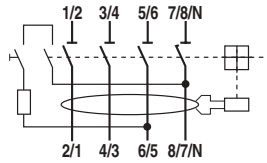


**RCDs**

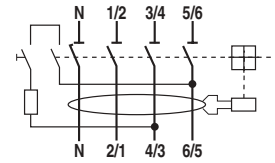
**F 202**



**F 204**

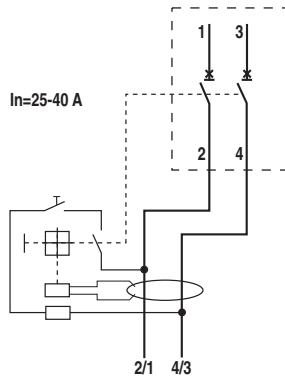


**F 204 Left neutral**

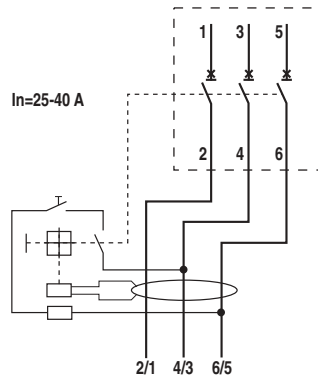


**RCD-blocks**

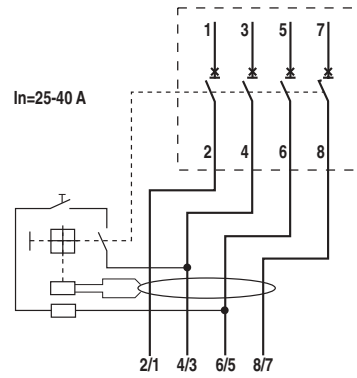
**DDA 202**



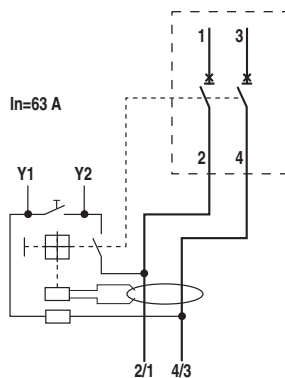
**DDA 203**



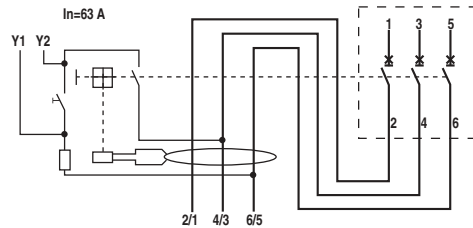
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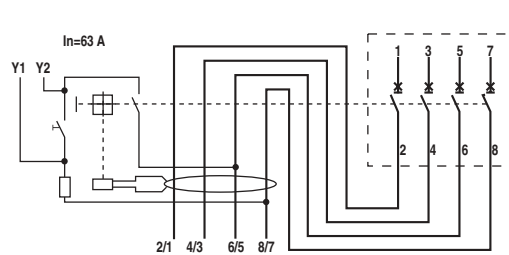
**DDA 202**



**DDA 203**

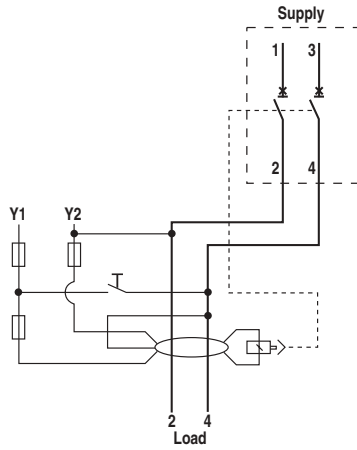


**DDA 204**

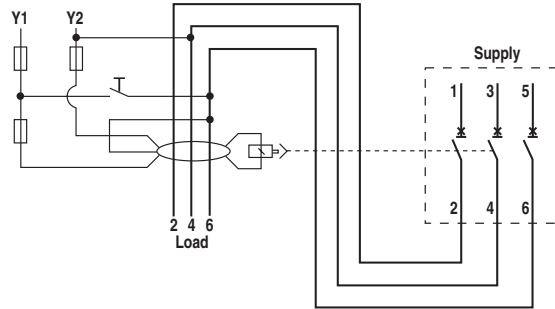


RCD-blocks

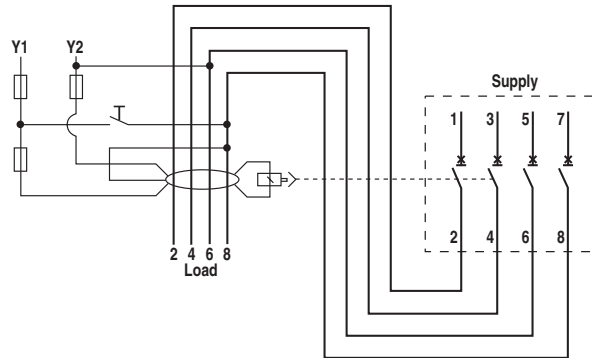
DDA 202 AE



DDA 203 AE

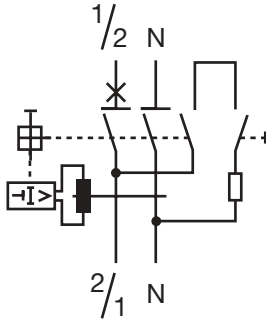


DDA 204 AE

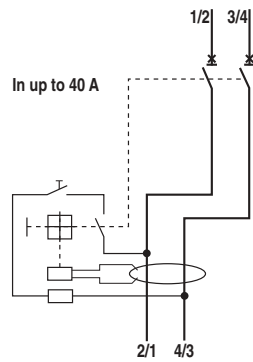


**RCBOs**

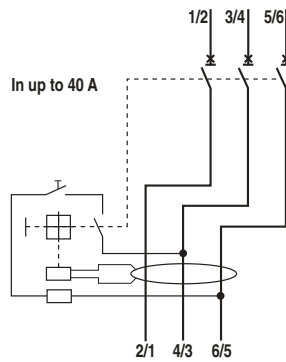
**FS 201**



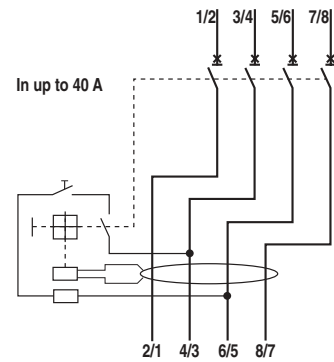
**DS 202**



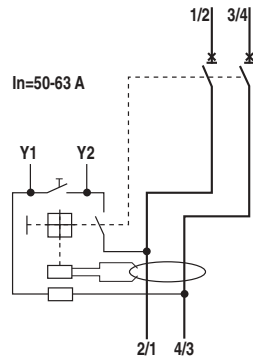
**DS 203**



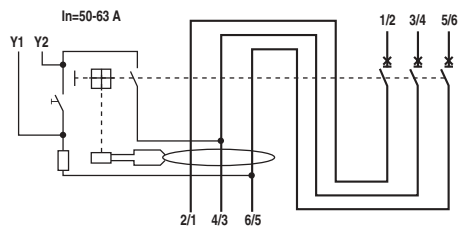
**DS 204**



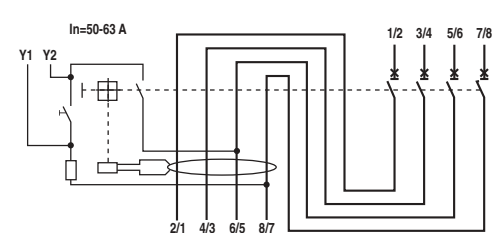
**DS 202**



**DS 203**



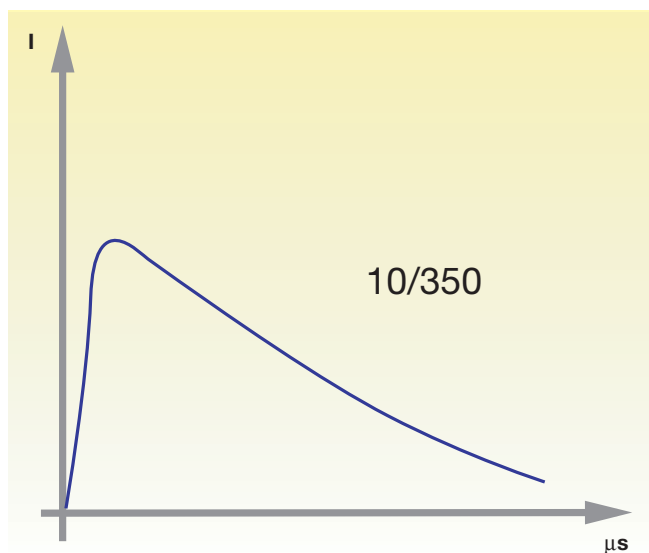
**DS 204**



## SURGE PROTECTION DEVICES OVR RANGE

### Terminology of SPD electrical characteristics

10/350 and 8/20 impulse waves



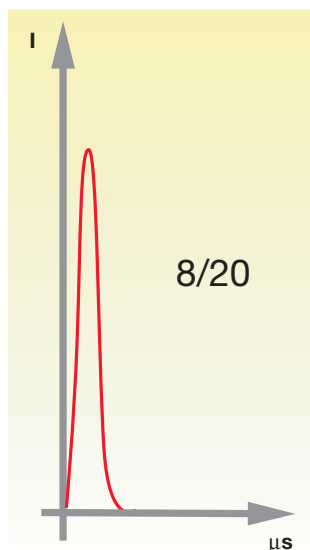
Type 1 Surge Arresters  
 $I_{imp}$ : current wave

#### 10/350 wave

Current waveform which passes through equipment when subjected to an overvoltage due to a direct lightning strike.

#### Type 1 surge arrester

Surge arrester designed to run-off energy caused by an overvoltage comparable to that of a direct lightning strike. It has successfully passed testing to the standard with the 10/350 wave (class I test).



Type 2 Surge Arresters  
 $I_{max}$ : current wave

#### 8/20 wave

Current waveform which passes through equipment when subjected to an overvoltage (low energy).

#### Type 2 surge arrester

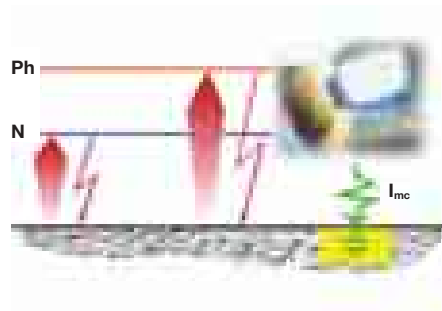
Surge arrester designed to run-off energy caused by an overvoltage comparable to that of an indirect lightning strike or an operating overvoltage. It has successfully passed testing to the standard with the 8/20 wave (class II test).

### Common mode and/or differential mode protection

#### Common mode

Common mode overvoltages appear between the live conductors and earth, e.g. phase/earth or neutral/earth.

A live conductor not only refers to the phase conductors but also to the neutral conductor. This overvoltage mode destroys equipment connected to earth (class I equipment) and also equipment not connected to earth (class II equipment) which is located near an earthed mass and which does not have sufficient electrical isolation (a few kilovolts). Class II equipment not located near an earthed mass is theoretically protected from this type of attack.



**Note:**  
Common mode overvoltages affect all earthing systems.

#### Differential mode

Differential mode overvoltages circulate between live conductors: phase/phase or phase/neutral. These overvoltages have a potentially high damaging effect for all equipment connected to the electrical network, especially 'sensitive' equipment.

**Note:**  
Differential mode overvoltages affect the TT earthing system. These overvoltages also affect the TN-S earthing system if there is a



considerable difference in the lengths of the neutral cable and the protective cable (PE).

The first surge arrester diverts most of the current to the ground and the remaining surge current is diverted to the ground by the second surge arrester.  
The value of this remaining surge current gets lower as the distance between both surge arresters gets longer. The lower is the current going through the last surge arrester, the lower is the voltage protection level applied to the downstream equipment.

**Principle of coordination for Surge Protection Devices**

The first surge arrester does not provide effective protection for the whole installation by itself. Certain electrical phenomena can double the protection's residual voltage if cable lengths exceed 10m.

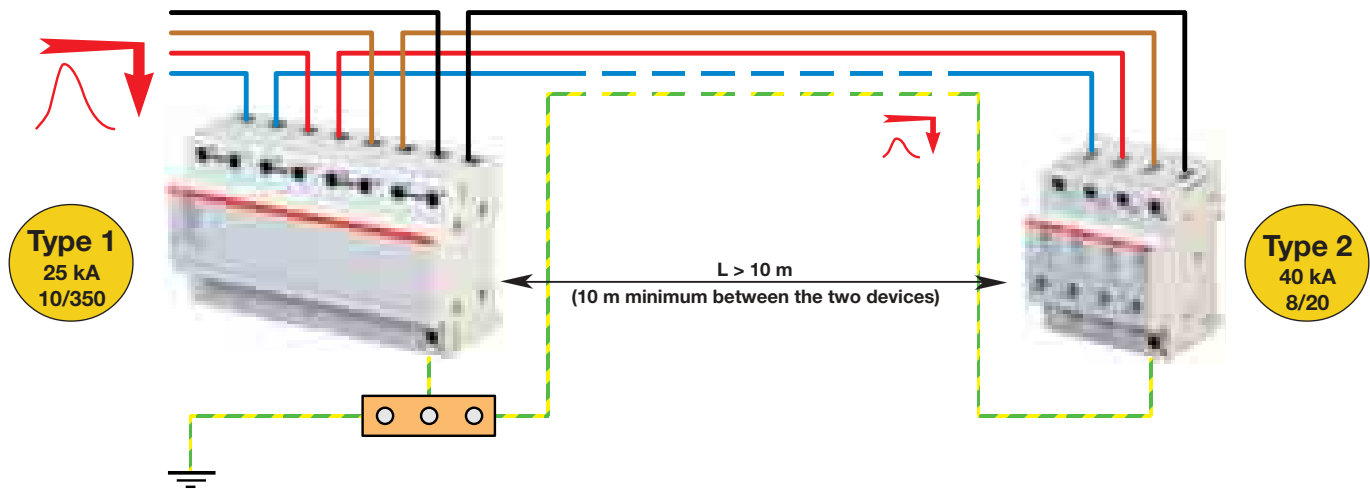
Surge arresters must be coordinated when they are installed refer to the tables below.

**Coordination required if:**

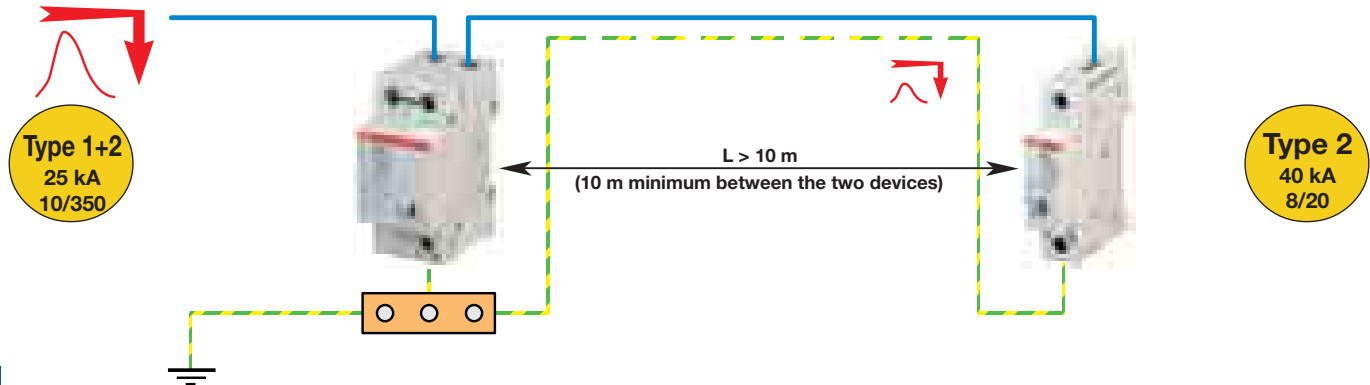
The first surge arrester does not reach the protection voltage ( $U_p$ ) by itself.

The first surge arrester is more than 10m away from the equipment to be protected.

**Coordination between Type 1 and Type 2 surge arrester**

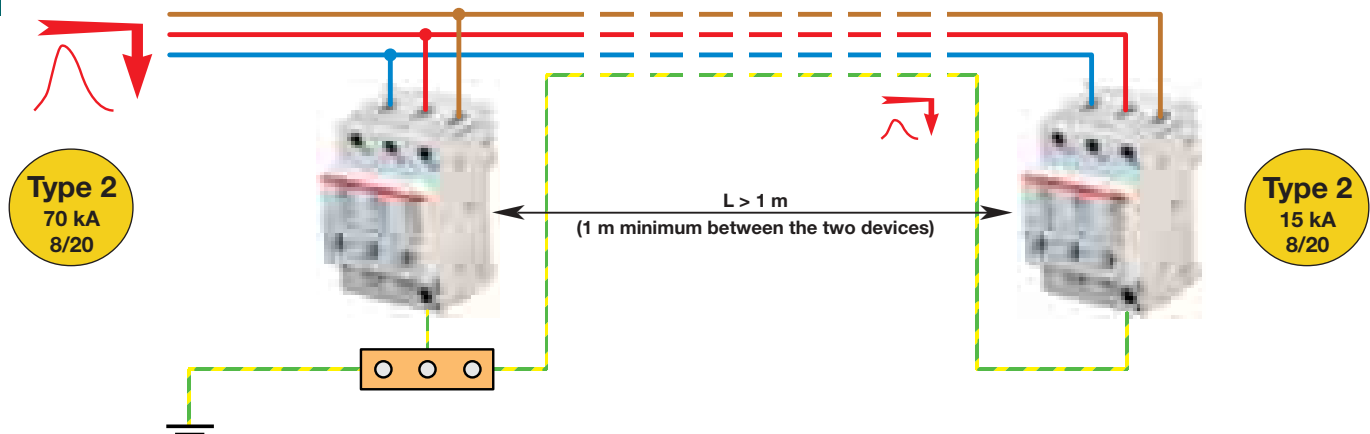


**Coordination between Type 1+2 and Type 2 surge arrester**



11

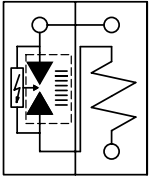
**Coordination between Type 2 surge arresters**



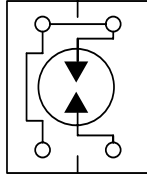
**Operating diagrams of Surge Protection Devices**

Type 1 operating diagrams

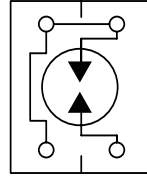
Single pole Type 1 SPD



OVR T1 25 255

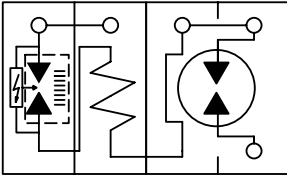


OVR T1 50 N

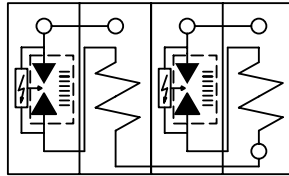


OVR T1 100 N

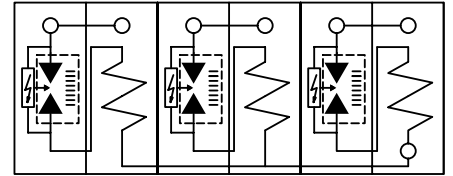
Multipole Type 1 SPD



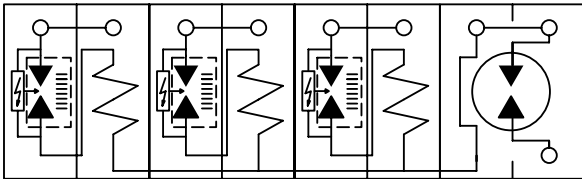
OVR T1 1N 25 255



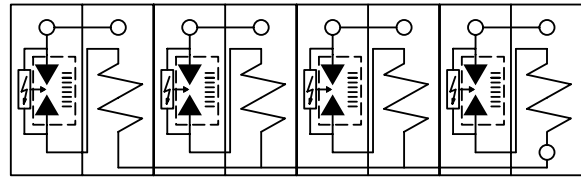
OVR T1 2L 25 255



OVR T1 3L 25 255

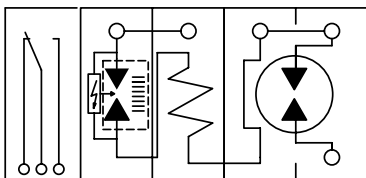


OVR T1 3N 25 255

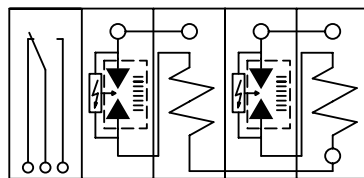


OVR T1 4L 25 255

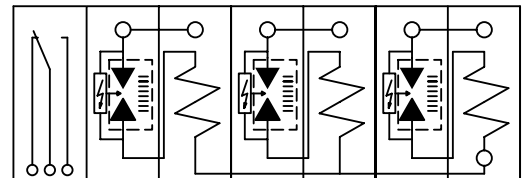
Multipole Type 1 SPD with Remote indication (TS)



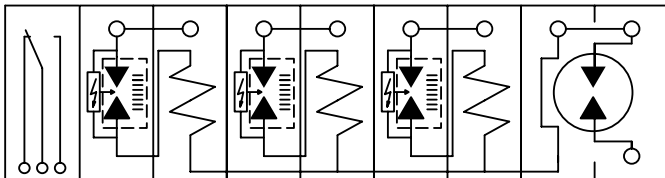
OVR T1 1N 25 255 TS



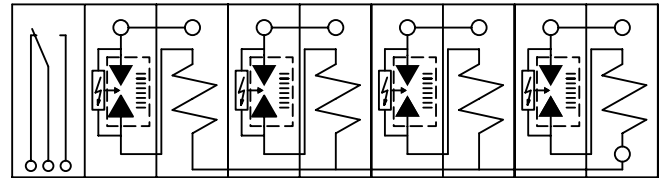
OVR T1 2L 25 255 TS



OVR T1 3L 25 255 TS



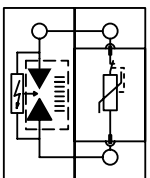
OVR T1 3N 25 255 TS



OVR T1 4L 25 255 TS

Type 1+2 operating diagrams

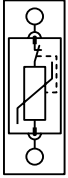
Single pole Type 1 SPD



OVR T1+2 25 255 TS

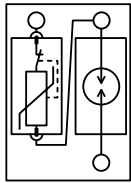
Type 2 operating diagrams

Single pole Type 2 SPD

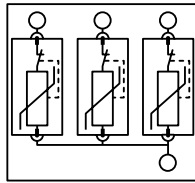


OVR T2 15/40/70 kA

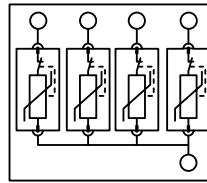
Multipole Type 2 SPD



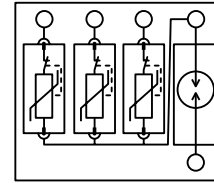
OVR T2 1N 15/40/70 kA (Ph + N)



OVR T2 3L 15/40/70 kA (3 Ph)



OVR T2 4L 15/40/70 kA (4 Ph)



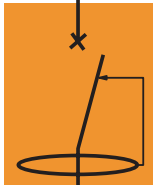
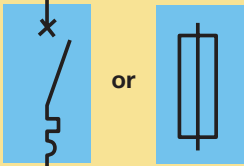

OVR T2 3N 15/40/70 kA (3 Ph + N)



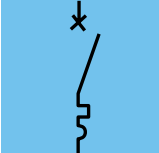
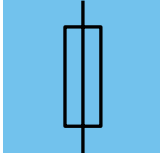
**Installation rules for SPDs: choice of associated breaking devices (fuse/circuit-breaker)**

**Choice of disconnecter**

Surge arresters must be associated with upstream short-circuit protection and residual current protection against indirect contact (usually already present in the installation).

	Function	Application
	<b>Protection against indirect contact</b>	<ul style="list-style-type: none"> <li>Residual current circuit-breaker compulsory for TT systems</li> <li>Residual current circuit-breaker possible for TN-S, IT and TN-C-S systems</li> <li>Residual current circuit-breaker forbidden for TN-C systems</li> </ul> <p>If a residual current circuit-breaker is used, it is preferable to use a type S.</p> <p>Otherwise there is a risk of nuisance tripping. This does not affect the effectiveness of the surge arrester, but may cause the circuit to be opened.</p>
	<b>Protection against fault currents</b>	<p>The breaking device associated with the surge arrester can be either a circuit breaker or a fuse.</p> <p>Its rating should take into consideration the surge arrester's characteristics and the short-circuit current of the installation.</p>
	<b>Thermal protection</b>	Thermal protection is integrated into the surge arrester.

**Maximum circuit-breaker or fuse protection rating depending on  $I_{max}$  and  $I_{imp}$  of the surge arrester.**

		
<b>Type 1 surge arresters</b>	<b>Circuit-breaker (curve C)</b>	<b>Fuse (gG)</b>
<b>25 kA (10/350)</b>		
• $I_{cc}$ = 300 A to 1 kA	-	125 A
• $I_{cc}$ = 1 kA to 7 kA	-	125 A
• $I_{cc}$ = 7 kA and above	-	125 A
<b>Type 2 surge arresters</b>	<b>Circuit-breaker (curve C)</b>	<b>Fuse (gG)</b>
<b>70 kA (8/20)</b>		
• $I_{cc}$ = 300 A to 1 kA	30 A (1)	20 A
• $I_{cc}$ = 1 kA to 7 kA	32 A to 40 A (2)	40 A
• $I_{cc}$ = 7 kA and above	32 A to 63 A (3)	63 A
<b>40 kA (8/20)</b>		
• $I_{cc}$ = 300 A to 1 kA	25 A (1)	16 A
• $I_{cc}$ = 1 kA to 7 kA	25 A (2)	25 A
• $I_{cc}$ = 7 kA and above	25 A to 50 A (3)	50 A
<b>15 kA (8/20)</b>		
• $I_{cc}$ = 300 A to 1 kA	10 A to 25 A (1)	16 A
• $I_{cc}$ = 1 kA to 7 kA	10 A to 32 A (2)	16 A
• $I_{cc}$ = 7 kA and above	10 A to 40 A (3)	25 A to 40 A

(1) Series S 230 and S 240. (2) Series S 240 and S 250. (3) Series S 270 to S 290.

**Cabling and installation of Surge Protection Devices in an electrical panel**

**50 cm rule**

Remember that a 10 kA lightning current passing through a 1 m length of cable generates 1000 Volts. Equipment protected by a surge arrester is subjected to a voltage equal to the sum of the  $U_p$  voltage of the surge arrester,  $U_d$  of its disconnector and the sum of the inductive voltages of connecting cables ( $U1+U2+U3$ ).

It is therefore essential that the total length ( $L = L1+L2+L3$ ) of the connecting cables is as short as possible (0.50 m).

If this length ( $L = L1 + L2+L3$ ) exceeds 0.50m, it is necessary to carry out one of the following:

- Reduce this length by moving the connection terminals.
- Choose a surge arrester with a lower  $U_p$  value.
- Install a second, coordinated surge arrester near the device to be protected so as to adapt the combined  $U_p$  value to the impulse withstand of the equipment to be protected.

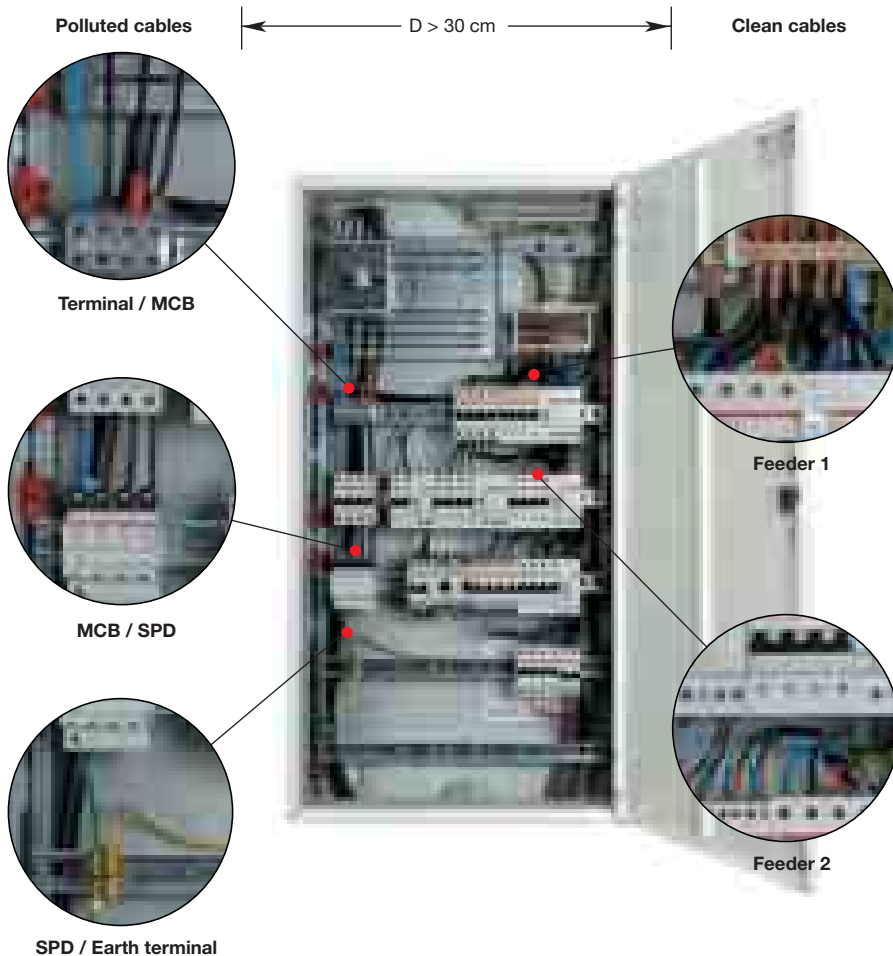
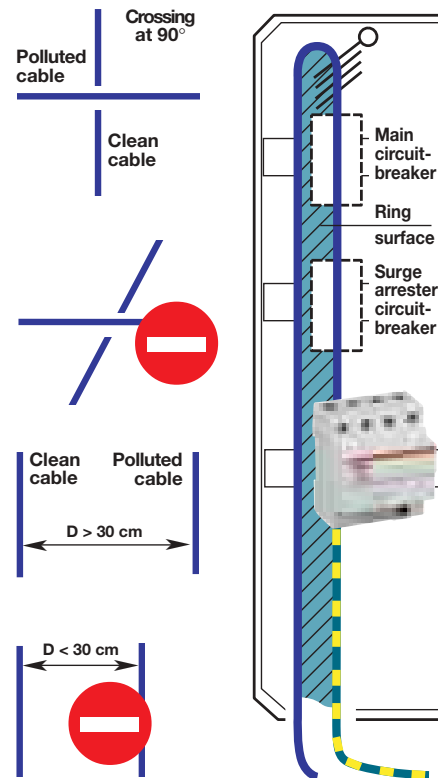
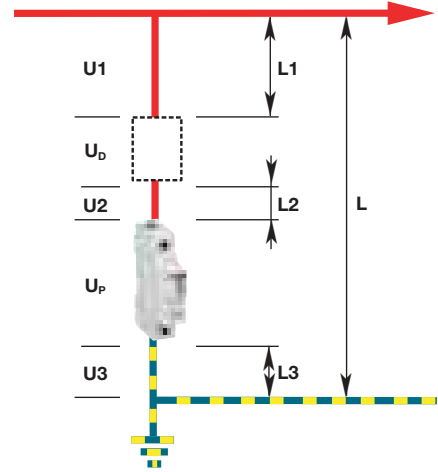
**Wiring ring surfaces**

The wires must be arranged in such a way that they are as close to each other as possible (see adjacent diagram) to avoid overvoltages induced by a ring surface between phases, the neutral and the PE conductor.

**Routing of clean cables and polluted cables**

During installation, lay clean cables (protected) and polluted cables as shown in the adjacent diagrams.

To avoid magnetic coupling between the different cable types (clean and polluted), it is strongly advised that they are kept apart (> 30 cm) and if a crossing cannot be avoided, it should be at right angles (90°).



**Note**

The cross-section of the connecting cables is calculated according to the local short-circuit current level (where the surge arrester is installed). It must be equal to the cross-section of the installation's upstream cables.

The minimum cross-section for the earth conductor is 4 mm<sup>2</sup> if there is not a lightning conductor and 10 mm<sup>2</sup> if there is a lightning conductor.

**Equipotential grounding:**

It is critical to check the earth equipotentiality of the various items of equipment.

### RD2 RESIDUAL CURRENT MONITORS

They operate combined with appropriate toroidal transformers (in 9 different diameters) which perform the sum of line currents; any current leakage in the monitored circuit causes, in the secondary of the toroidal transformer, a signal detected by the relay which intervenes.

The relay can command the tripping of the protection circuit-breaker release, thus breaking the circuit.

According to the IEC 60755 Standard, these relays are sensitive to leakage sinusoidal currents and to leakage pulsating currents with direct components. Thus they can be defined as "A type".

Some electric circuits allow to adjust sensitivity and time; the values can be selected through appropriate minidips.

#### More technical characteristics

<b>Calibration tolerances</b>	- sensitivity	+0% -50%
	- time	+0% -50%
<b>Power consumption</b>	[W]	0.45 at 48 V AC/DC 1.2 at 110 V AC/DC 3.4 at 230 V AC 11 at 400 V AC
<b>Dielectric test voltage at ind. freq. for 1 min.</b>	[kV]	2.5
<b>Max. peak current with 8/20 <math>\mu</math>s wave</b>	[A]	5000
<b>Installation position</b>		any
<b>Protection degree</b>		IP20



## Toroidal transformers

### More technical characteristics

	TRM	TR1	TR2	TR3	TR4	TR4A	TR160	TR160A	TR5	TR5A
<b>Core</b>	closed	closed	closed	closed	closed	open	closed	open	closed	open
<b>Available internal diameter</b> [mm]	29	35	60	80	110	110	160	160	210	210
<b>Weight</b> [kg]	0.17	0.22	0.28	0.45	0.52	0.6	1.35	1.6	1.45	1.85
<b>Minimum measurable current</b> [mA]	30	30	30	100	100	300	300	500	300	500
<b>Installation position</b>	Any									
<b>Operating temperature</b> [°C]	-10...+70									
<b>Storage temperature</b> [°C]	-20...+80									
<b>Transformation ratio</b>	500/1									
<b>Dielectric test voltage at industrial freq. for 1 min.</b> [kV]	2.5									
<b>Max. permanent overload</b> [A]	1000									
<b>Max. thermal overload</b> [kA]	40/1 sec.									
<b>Connections</b>	Screw terminal boards, max. section 2.5 mm <sup>2</sup>									
<b>Protection degree</b>	IP20									

### Generality

They must be mounted with residual current monitors upstream the lines or loads to be protected; all active conductors (phases and neutral) of single-phase as well as of three-phases lines must pass through them.

In this way these devices perform the vector sum of line currents detecting the possible homopolar differential currents that leak to earth: their core of sheet iron has high magnetic properties that allow to detect even very low leakage currents.

The choice of a toroidal transformer depends on the conductor or on the bar to be used.

It is suggested to use the open versions in case of revamping or upgrading of an existing installation.

### Installation

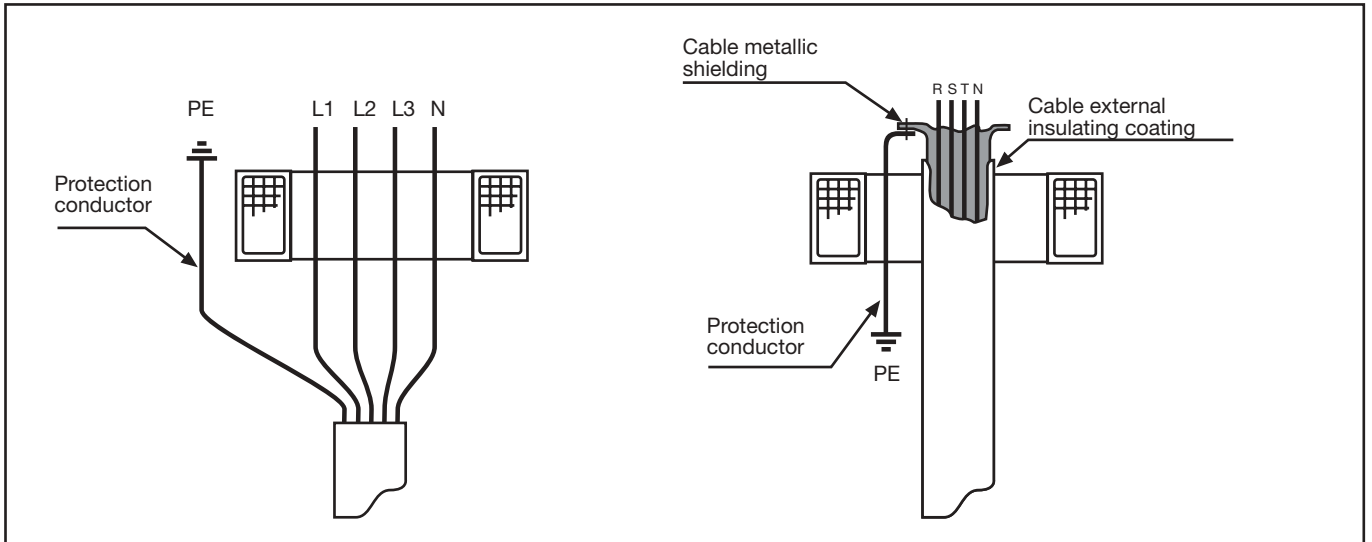
All active conductors can be introduced in the toroidal transformers without the need of respecting any specific sense of introduction (P1-P2 or P2-P1). The output signal must be picked up from terminals 1 (S1) and 2 (S2) and connected to the residual current monitor, while terminals 3 and 4 must be connected to the test output of those relays of FPP range with this function. With RD2 they must remain disconnected. For this connection it is better to use twisted or shielded cables, possibly far from busbars. The minimum recommended section of connection cables should have a maximum resistance of 3 Ω; anyway consider a maximum length of connection of 20 m for 0.5 mm<sup>2</sup> and of 100 m for 2.5 mm<sup>2</sup>.

For versions with openable core it is necessary to control that the contact surface of the two semi-cores is clean, that bolts are tight and that connection cables connections on both sides are intact.

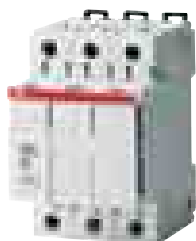
Connection cables with metallic shielding or armor must be earthed downstream the toroidal transformer; if they run within the transformer they must be earthed in the opposite direction.

In presence of line overcurrents (for ex. motor operation, energizing of transformers, etc.):

- install the toroidal transformer on a straight cable segment



- center cable position within the transformer
- use transformers with a diameter wider than minimum requirements, if necessary with a diameter up to 2 times wider than that of cables.



## E 930 FUSE HOLDERS

### More technical characteristics

Breaking capacity	that of the cartridge	
Dielectric test voltage at ind. freq. for 1 min.	2.5 kV	
Terminals	up to 32 A	10 mm <sup>2</sup>
	up to 50 A	25 mm <sup>2</sup>
	up to 125 A	35 mm <sup>2</sup>
Protection degree	IP20	
Rated voltage Un	E930/32 (10.3x38 fuses)	400 V*

\* E930/32 fuse holders comply with IEC EN 60269-3 Standard (fuse for domestic applications) and they have been released with Un=400 V; by construction, they can be used up to 500 V.

### Power consumption in Watt at rated current

Fuse rating In [A]	Fuses 10.3x38 gG	Fuses 14x51 gG	Fuses 22x58 gG
1	0.272	0.50	0.80
4	1.05	0.95	1.45
6	1.10	1.30	1.60
8	1.20	1.60	2.15
10	1.30	1.90	2.50
12	1.50	2.10	2.70
16	1.80	2.20	2.75
20	2.00	2.30	2.90
25	2.30	3.00	3.40
32	2.60	3.30	3.60
40		3.60	4.50
45		4.10	4.80
50		5.00	5.50
63			6.35
80			7.35
100			8.75
125			12.50

### Power consumption in Watt at rated current

Fuse rating In [A]	Fuses 10.3x38 aM	Fuses 14x51 aM	Fuses 22x58 aM
1	0.08		
2	0.12		
4	0.17	0.25	0.30
6	0.30	0.30	0.45
8	0.35	0.40	0.55
10	0.40	0.50	0.60
12	0.45	0.65	0.75
16	0.70	0.90	0.90
20	1.00	1.00	1.10
25	1.20	1.20	1.35
32	1.50	1.55	1.60
40		2.10	1.90
45		2.15	2.20
50		2.50	3.00
63			4.10
80			5.20
100			6.50
125			7.80

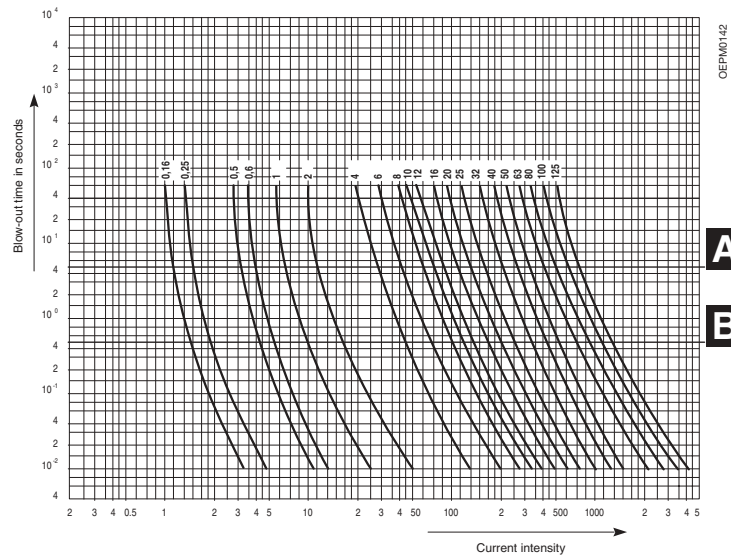
**Maximum values of specific let-through energy in A<sup>2</sup>s**

In [A]	gL fuses	
	Pre-arc	Total
1	3	15
2	5	30
4	15	110
6	60	200
8	80	330
10	130	400
12	250	700
16	450	1500
20	800	2700
25	1400	4500
32	2200	7000
40	3500	11000
45	4000	15000
50	4500	17000
63	9300	27000
80	20000	65000
100	40000	100000
125	70000	160000

**Maximum values of specific let-through energy in A<sup>2</sup>s**

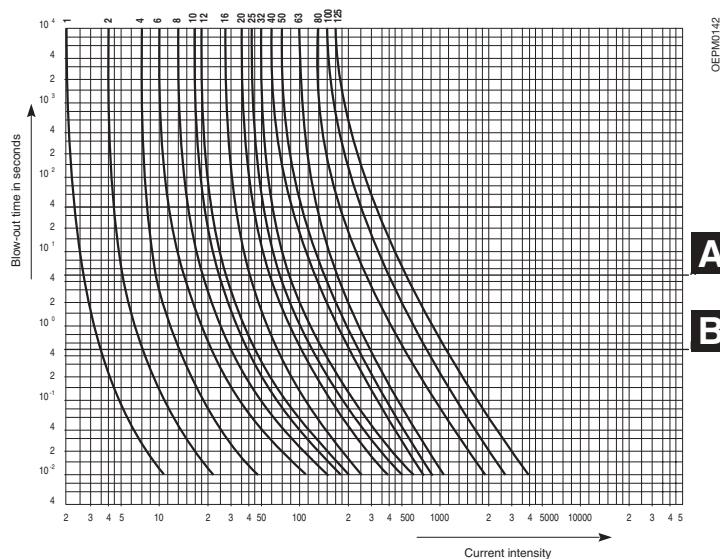
In [A]	aM fuses	
	Pre-arc	Total
1	10	20
2	35	60
4	110	270
6	200	600
8	400	1100
10	800	2000
12	1000	2800
16	1200	4500
20	1700	7000
25	2700	11000
32	5000	19000
40	9000	28000
45	14000	37000
50	19000	45000
63	30000	70000
80	50000	110000
100	80000	170000
125	100000	185000

**gL type cylindrical fuses**



A: max. time for protection against short-circuits  
B: max. time for protection against indirect contact for m=1

**Type aM cylindrical fuses**



**M2160 - M2060 FUSE SWITCHES**

**Additional technical features**

Type	Power consumption [W]	Type	Power consumption [W]	Type	Power consumption [W]	Type	Power consumption [W]
M2161	3.18	M2163	9.54	M2061 Na	4.38	M2063	9.54
M2161 Na	4.38	M2163 Na	16.00	M2062	6.38	M2063 Na	16.00
M2162	6.38	M2061	3.18				

## E 259 INSTALLATION RELAYS

Information about lamp insertion between phase and neutral

### Incandescent lamps

Power [W]	[Number of lamps]
15	120
25	72
40	45
60	30
75	24
100	18
150	12
200	9
300	6
500	3

### Fluorescent lamps without power factor capacitors

Power [W]	[Number of lamps]
15	
18	50
20	45
30	30
36	25
40	23
58	16
65	13

### Twin-lamps

Power [W]	[Number of lamps]
2x18	50
2x20	45
2x30	30
2x36	25
2x40	23
2x58	16
2x65	13

### Parallel fluorescent lamps without power factor capacitors

Power [W]	[Number of lamps]
18	17
20	17
30	14
36	13
40	12
58	8
65	7



**E 250 LATCHING RELAYS**

**Max. number of lamps, 16 A latching relays**

Power [W]	Number of switchable lamps
<b>Incandescent lamps</b>	
15 W	200
25 W	120
40 W	75
60 W	50
75 W	40
100 W	30
150 W	20
200 W	15
300 W	9
500 W	5
<b>Fluorescent lamps without power factor capacitors</b>	
18 W	81
36 W	44
40 W	38
58 W	29
65 W	26
<b>Fluorescent twin-lamps</b>	
2x18 W	82
2x36 W	41
2x40 W	35
2x58 W	23
2x65 W	22
<b>Parallel fluorescent lamps with power factor capacitors</b>	
18 W	103
36 W	63
40 W	40
58 W	41
65 W	37
<b>230 V halogen lamps</b>	
150 W	20
250 W	12
300 W	10
400 W	7
500 W	6
1000 W	3

**Max. number of lamps, 16 A latching relays**

Power [W]	Number of switchable lamps
<b>High pressure sodium vapor lamps</b>	
70 W	15
150 W	8
250 W	4
400 W	3
1000 W	1
<b>Low pressure sodium vapor lamps</b>	
37 W	
55 W	27
56 W	
90 W	16
91 W	
135 W	11
180 W	8
185 W	8
<b>High pressure mercury vapor lamps</b>	
50 W	30
80 W	18
125 W	12
250 W	6
400 W	3
1000 W	1
<b>Lamps with electronic reactor</b>	
18 W	83
36 W	46
58 W	31
<b>Very low voltage halogen lamps</b>	
20 W	116
50 W	46
75 W	31
100 W	24
150 W	15
200 W	12
300 W	7

### Use of lighted pushbuttons

Latching relays can be controlled through lighted pushbuttons, without any limitations in terms of connection of three-terminal types.

In two-terminals pushbuttons the current that flows through pushbutton lamps can trigger an unwanted activation; in order to avoid this there is the E 250 CP compensation module, installed in parallel on the coil.

Number of E 250 CP compensation modules	Number of connectable lighted pushbuttons	
	1P – 2P types	3P – 4P types
0	8	9
1	18	22
2	45	38

### Maximum length of very low voltage connections

Too long feeding cables can reduce voltage so that it is no more enough for guaranteeing standard operating conditions of latching relays, in particular for very low voltage types.

For this reason the wiring must comply with the total lengths (outward and return) shown in the table.

$U_N$	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1 mm <sup>2</sup>	1.5 mm <sup>2</sup>
8 V~	28 m	41 m	55 m	90 m
12 V~	68 m	102 m	136 m	224 m
24 V~	272 m	412 m	548 m	896 m
48 V~	1096 m	1640 m	2184 m	3584 m

Connection rules (from right to left)

- Far right: motor unit
- On its left the main contacts unit
- On the left side the centralized control unit
- At the end, on the left side, the auxiliary contacts unit

Neither screws nor additional connections are required.

Additional modules or units can be associated with motor units as shown in the table.

Description	Pole number	Motor units	Main contact units		Centralized control units		Max. auxiliary contacts	Total module number
		E 251/E 252/ E 256/E 256	E 257 C	E 259	E250 CM	E259 CM	E 257 CM	
		1P 2P	1P 2P	3P	1P	2P	1P	

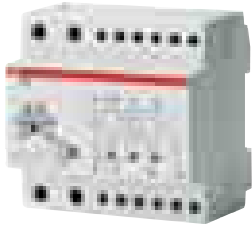
E 250 latching relays

Latching									
	1	1						2	2
	2		1					2	2
	3	1				1		1	2 1/2
	4		1			1		1	2 1/2
Maintained control									
	1	1					1	1	2
	2		1				1	1	2
	3	1				1	1	-	2 1/2
	4		1			1	1	-	2 1/2
Same voltage centralized control									
	1			1				2	2
	2				1			1	2
	3					1		1	2 1/2
Different voltage centralized control									
	1	1						1	2 1/2
	2		1					1	2 1/2
	3		1				1	1	2 1/2

E 259 installation relays (contactors)

	1				1			2	2
	2					1		2	2
	3				1		1	1	2 1/2
	4					1	1	1	2 1/2

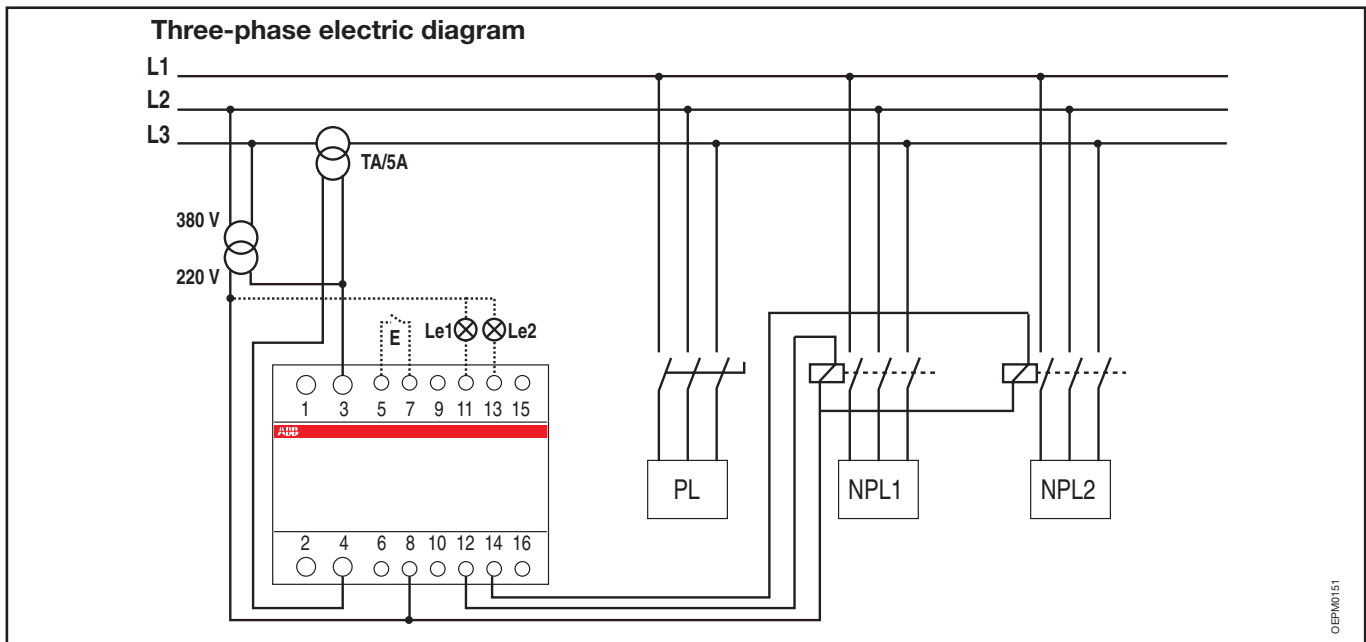
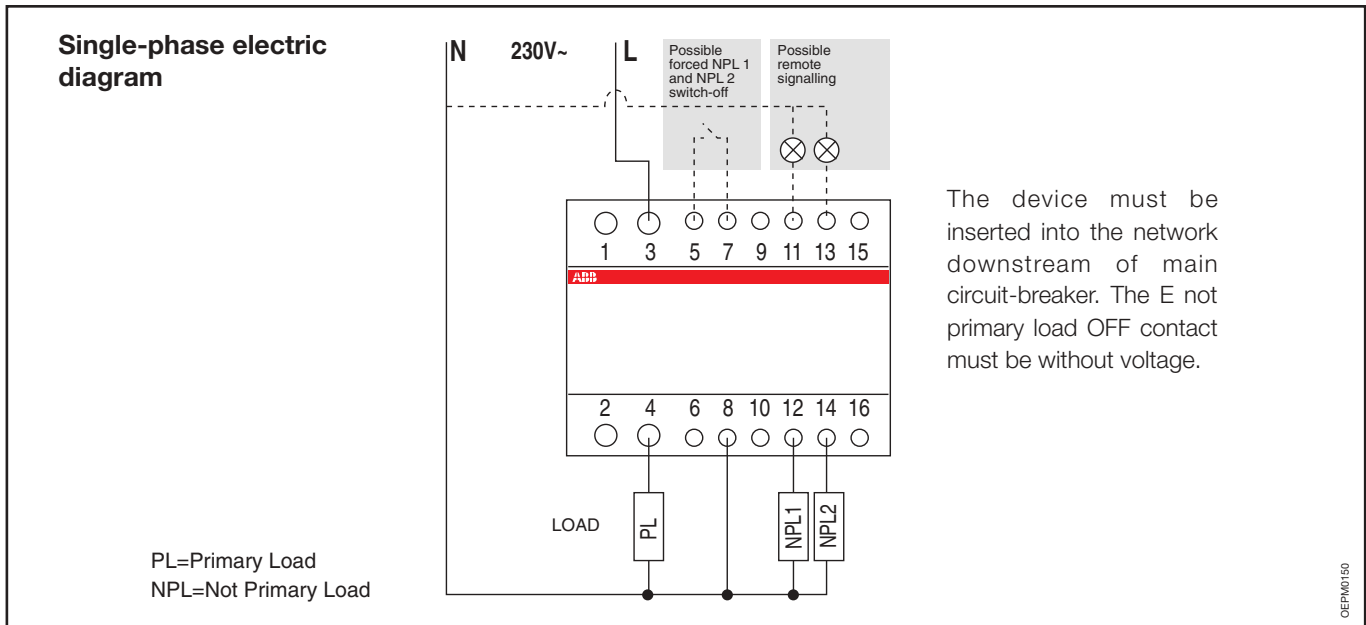
The 2 exchange contact unit E 259 CM002 (code EA 663 3) can be used only with E259 R001 and E 259 R002 motor units.



**LSS1/2 LOAD SHEDDING SWITCHES**

The LSS1/2 switch intervenes when the total power consumption exceeds the threshold set through the switch placed on the front of the device. After a preset time the switch verifies the possibility to reset disabled not primary loads; the attempt is repeated until a standard situation is established again.

Particularly suitable in applications where load total power is higher than the one indicated in the contract and the average power consumption in a long time interval (dozen minutes) is lower, the LSS1/2 switch can be used in public and industrial single-phase networks and for three-phase networks if they are symmetrical and balanced.



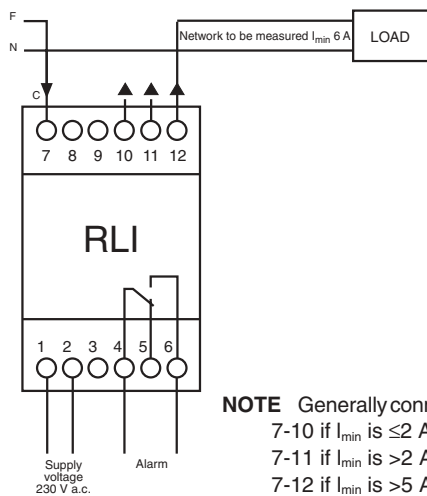
**MAX./MIN. CURRENT/VOLTAGE AMMETRIC AND VOLTMETRIC RELAYS**

**Example of MINIMUM CURRENT relay (RLI) operating principle**

Testing a load with the following marking

- $I_n = 7\text{ A}$  (standard operation rated current)
- $V_n = 230\text{ V a.c.}$  (standard operation rated voltage)
- $I_{min} = 6\text{ A}$  (RLI relay intervention)

1. Connect according to the diagram (as  $I_{min}=6\text{A}$ ).



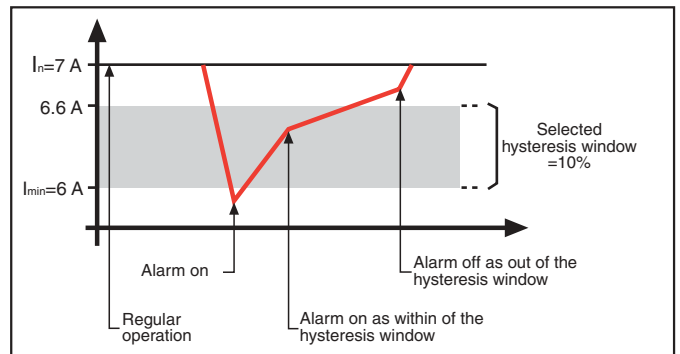
2. Set the "Current %" trimmer to 60%, as:

$$I\% = \frac{6 (I_{min})}{10 (I_{set})} \times 100 = 60\%$$

being the terminals 7-12 wired.

3. Set the "Hysteresis %" trimmer; choosing 10% you get an intervention range from 6 to 6.6 A ( $6\text{ A} + 10\% = 6.6\text{ A}$ ). The relay intervention will be 6 A and the return to the standard operation 6.6 A.

4. Set the "Delay" trimmer. This allows to delay the relay intervention time (1...30 sec). During the delay the "Power ON" LED blinks; at the end of the delay the "Alarm" LED is permanently lighted and the relay intervenes.

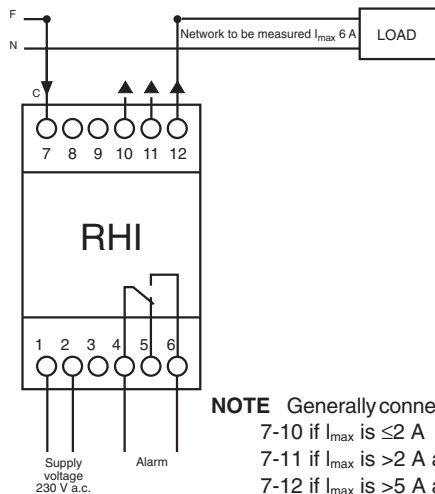


**Example of MAXIMUM CURRENT relay (RHI) operating principle**

Testing a load with the following marking

- $I_n = 5\text{ A}$  (standard operation rated current)
- $V_n = 230\text{ V a.c.}$  (standard operation rated voltage)
- $I_{max} = 6\text{ A}$  (RHI relay intervention)

1. Connect according to the diagram (as  $I_{max}=6\text{A}$ ).



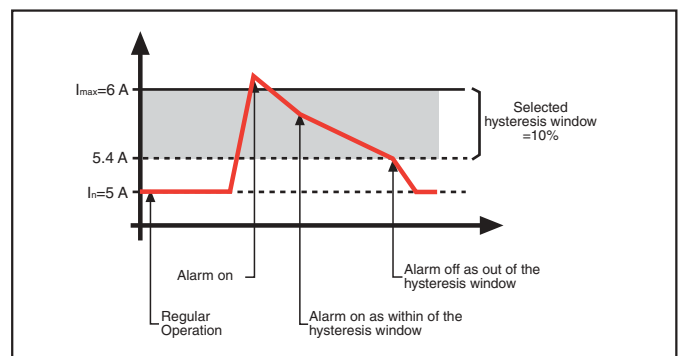
2. Set the "Current %" trimmer to 60% as:

$$I\% = \frac{6 (I_{max})}{10 (I_{set})} \times 100 = 60\%$$

being the terminal 7-12 wired.

3. Set the "Hysteresis %" trimmer; choosing 10% you get an intervention range from 5.4 to 6 A ( $6\text{ A} - 10\% = 5.4\text{ A}$ ). The relay intervention will be 6 A and the return to the standard operation 5.4 A.

4. Set the "Delay" trimmer. This allows to delay the relay intervention time (1...30 sec). During the delay the "Power ON" LED blinks; at the end of the delay the "Alarm" LED is permanently lighted and the relay intervenes.

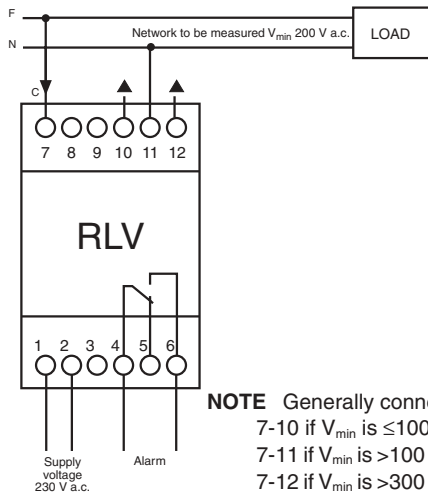


**Example of MINIMUM VOLTAGE relay (RLV) operating principle**

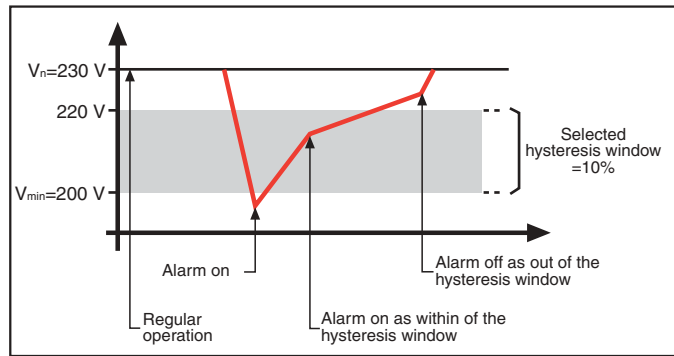
Managing a load with the following marking

- $I_n = 5\text{ A}$  (standard operation rated current)
- $V_n = 230\text{ V a.c.}$  (standard operation rated voltage)
- $V_{min} = 200\text{ V a.c.}$  (RLV relay intervention)

1. Connect according to the diagram (as  $V_{min}=200\text{ V}$ ).



2. Set the "Voltage %" trimmer to 66.7%, as:  
$$V\% = \frac{200 (V_{min.})}{300 (V_{set})} \times 100 = 66.7\%$$
being the terminal 7-11 wired.
3. Set the "Hysteresis %" trimmer; choosing 10% you get an intervention range from 200 to 220 V ( $200+10\%=220\text{ V}$ ). The relay intervention will be 200 V and the return to the standard operation 220 V.
4. Set the "Delay" trimmer. This allows to delay the relay intervention time (1...30 sec). During the delay the "Power ON" LED blinks. At the end of the delay the "Alarm" LED is permanently lighted and the relay intervenes.

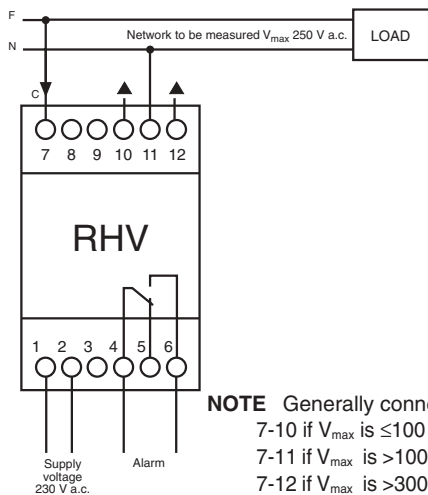


**Example of MAXIMUM VOLTAGE relay (RHV) operating principle**

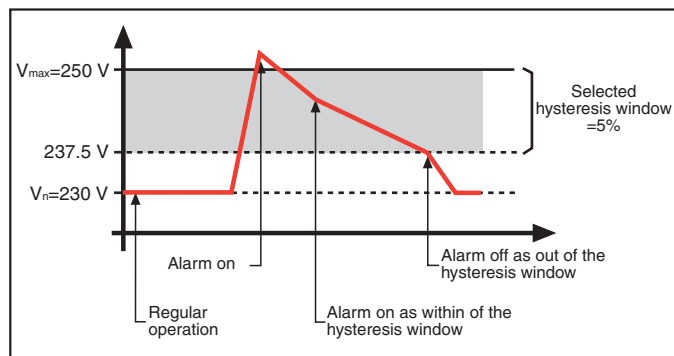
Managing a load with the following marking

- $I_n = 5\text{ A}$  (standard operation rated current)
- $V_n = 230\text{ V a.c.}$  (standard operation rated voltage)
- $V_{max} = 250\text{ V a.c.}$  (RHV relay intervention)

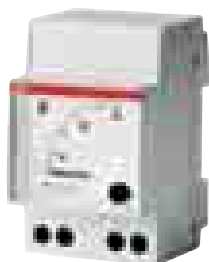
1. Connect according to the diagram (as  $V_{max}=250\text{ V}$ ).



2. Set the "Voltage%" trimmer to 83.33%, as:  
$$V\% = \frac{250 (V_{max})}{300 (V_{set})} \times 100 = 83.33\%$$
being terminal 7-11 wired.
3. Set the "Hysteresis %" trimmer; choosing 5% you get an intervention range from 237.5 to 250 V ( $250-5\%=237.5\text{ V}$ ). The relay intervention will be 250 V and the return to the standard operation 237.5 V.
4. Set the "Delay" trimmer. This allows to delay the relay intervention time (1...30 sec). During the delay the "Power ON" LED blinks; at the end of the delay the "Alarm" LED is permanently lighted and the relay intervenes.



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## ANALOGUE MEASUREMENT INSTRUMENTS

As regards the insertion of wattmeters and varmeters, they are to be used in combination with the suitable transducers both on single-phase and on three-phase lines.

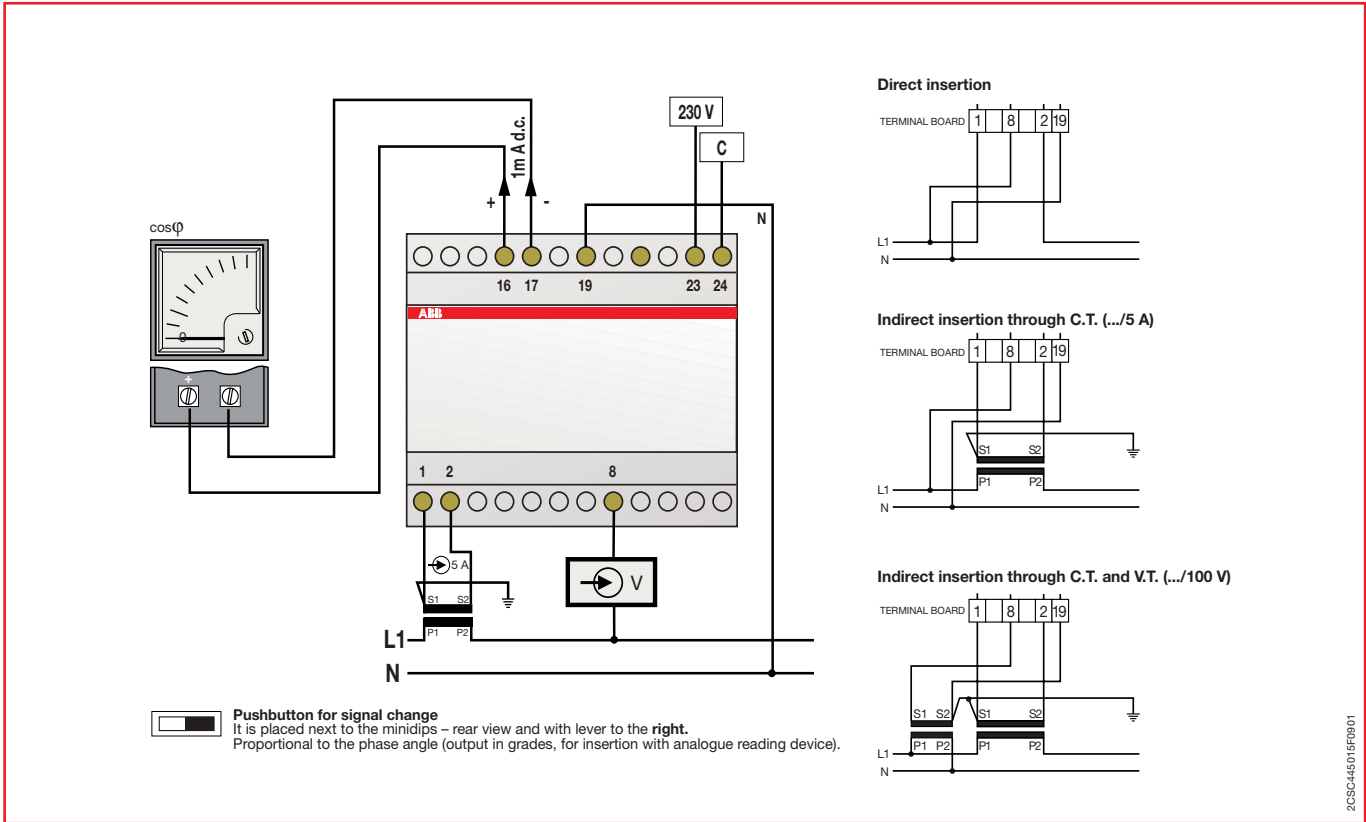
The following table shows the measurement scale (or full scale) in relation to the voltage and to the current transformers used.

### Additional technical features

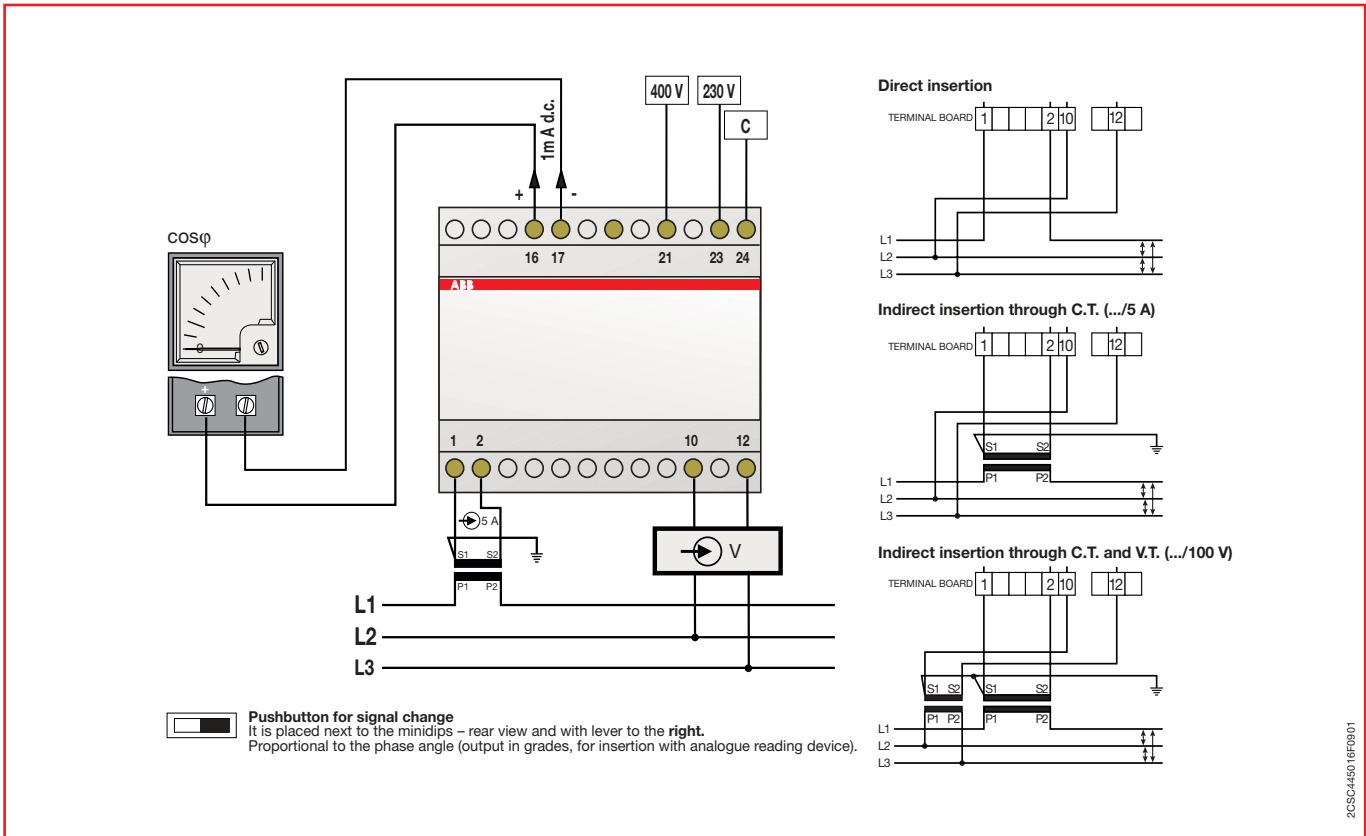
<b>Test voltage</b>	2000 V for 1' at 50 Hz
<b>Operating temperature</b>	- according to accuracy class: 0 °C ±10 °C - with guaranteed operation but outside accuracy rating: from -25 °C to +75 °C
<b>Resistance to vibrations</b>	±0.25 mm amplitude at 50 Hz
<b>Installation position</b>	- horizontal and vertical - versions for different angles on request
<b>Reading scales</b>	at full scale values according to DIN 43802 Standard
<b>Ammeter power loss</b>	5 A: 0.3 VA; 10 A: 0.6 VA; 25 A: 1 VA; 30 A: 1.2 VA
<b>Voltmeter power loss</b>	300 V: 1.5 VA; 500 V: 4 VA
<b>Frequency meter power loss</b>	<1.5 VA

Wiring diagrams

Power factor meters with alternated current – Single-phase line

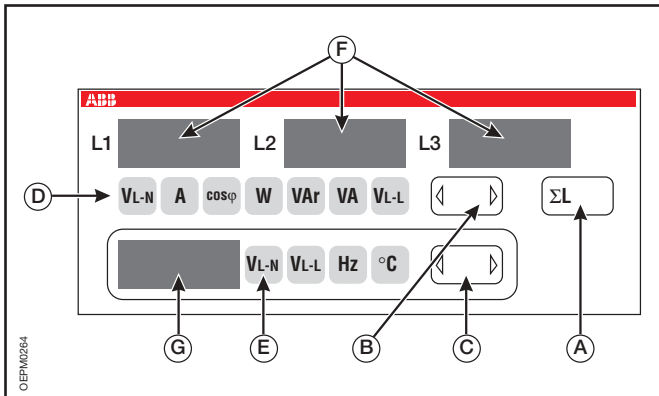


Alternated current power factor meters – Three-phase line without neutral (3 wires)





**MTM MULTIMETERS**



**A** Pushbutton for three-phase system ( $\Sigma L$ ) quantities and peak values (PEAK) displaying:

- pressing A pushbutton for less than 3 seconds you access to three-phase values ( $\Sigma L$ ) displaying of the measurement selected by B pushbutton;
- pressing A pushbutton for more than 3 seconds you access to peak values displaying on the F display, while viewing “PEAK” on the G display.

**B** Pushbutton for selecting the measure to view on the F display.

**C** Pushbutton for selecting the measure to view on the G display.

**D** LED bar to indicate the measure viewed on F displays.

**E** LED bar to indicate the measure viewed on the G display.

**F** 3 displays for viewing measurements divided by phases.

**G** Display for viewing the measurement indicated by the LED E bar. The voltage value refers to three-phase system.

The selection of elements to be measured and the transformation ratio setting are performed through the 3 keys A, B and C. The measurements are shown on F and G 3-digit and 8-segment red LED displays.

**To set the transformation ratio (C.T.):**




- press A and C pushbutton simultaneously until viewing “SET” on the G display and “CT 001” on the F display;
- replace the “001” value by setting the appropriate C.T. transformation ratio (i.e.: C.T. 800/5 A=160);
- press B or C pushbutton to increase or decrease respectively the transformation ratio values to be set;
- press A pushbutton to confirm the datum.

**Measurable quantities**

Quantity	View	
<b>Voltages between lines</b>	[V, kV]	VL1-VL2, VL2-VL3, VL3-VL1
<b>Phase voltage</b>	[V, kV]	VL1-N, VL2-N, VL3-N
<b>Phase currents</b>	[A, kA]	I1, I2, I3
<b>Active phase power</b>	[W, kW]	P1, P2, P3
<b>Reactive phase power</b>	[VAr, kVAr]	QL1, QL2, QL3
<b>Apparent phase power</b>	[VA, kVA]	S1, S2, S3
<b>Phase power factors</b>	[ψ]	PF1, PF2, PF3
<b>Temperature</b>	[°C]	probe within the multimeter
<b>Temperature</b>	[°C]	from 0 to 60
<b>Average value summation</b>	[Σ]	VL-L, VL-N, I, P, Q
<b>Peak value summation</b>	[Σ]	I, P

**CURRENT TRANSFORMERS**

**Standard type**

TYPE	CT-3	CT-4	CT-5	CT-6	CT-8	CT-12	CT-8V	CT-12V	
OPERATION	Through primary								
CENTRAL SECTION	 HORIZ. BAR	20x10 30x10	30x10	30x30 40x25 - 50x20	50x20 60x20	60x30 80x30	80x50 100x60 125x60		
	 CABLE	21	25	30	50	2x30	2x50	2x35	
CENTRAL SECTION	 VERT. BAR	20x10	30x10	30x10			min. 80x30 + max. 3x80x5	min. 100x10 + max. 4x125x5	
	Primary current (A)	Power (VA) Rating 1 3		Power (VA) Rating 0.5 0.2S		Power (VA) Rating 0.5 0.2S		Power (VA) Rating 0.5 0.5	
1									
5									
10									
15									
20									
25									
30									
40								2	
50								2	
60								2	
80								3	
100		3		3					
150	3		4	5	3				
200	3		4	6	3	4			
250	5		5	10	3	3			
300	5		5	10		5	5		
400	6		6	10		5	6	6	
500	6		6	10	10	5	6	10	
600	6		6	10	10	5	6	10	
800			10	10	10	5	10	7,5	
1000			10	10	10	5	20	10	
1200			10	10	10	20	15	10	
1500			20	20	20	30	20	10	
2000						30	20	10	
2500						30	20	10	
3000							20	40	
4000								50	
DIMENSIONS	Height	75	87	100	110	120	175	119	165
	Width	58	75	85	105	125	180	109	109
	Depth	44	44	45	61	61.5	68.5	41	41

Compact type							Miniaturized type								
TYPE	CT-M1	CT-M3	CT-M4	CT-M5	CT-M6	CT-SM1	CT-SM2	CT-SM3	CT-SM4	CT-SM5	CT-SM6	CT-SM7	CT-SM8	CT-SM9	
OPERATION	Through primary					Through primary									
CENTRAL SECTION	HORIZ. BAR	20x12 25x15 30x10	25x25 30x20 40x10	50x12	50x23 63x20		15x5			min 25x5 max 25x6,5		min. 29x5 max. 2x32x5	min. 30x5 max. 2x63x5		
	CABLE	21	23	30		2x22	13	11	18	25		32			
	VERT. BAR			25x25 30x20 40x10							15x5 20x5		32x5	50x5 2x50x5 2x50x10 3x50x5	2x63x5 3x63x5
Primary current (A)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	Power (VA)	
	Rating 0.5 1 3	Rating 0.5 1	Rating 0.5 1	Rating 0.5 1	Rating 0.5 1	Rating 0.5	Rating 1 3	Rating 1 3	Rating 0.5 1 3	Rating 0.5	Rating 0.5 1	Rating 0.5	Rating 0.5 1	Rating 0.5 1	
40							2								
50							2								
60							3	3							
75							3	3							
80							3	3							
100	3		2		3		3	3		5					
120							5	5		5					
125							5	5		5					
150		4		3	3		5	5		5					
200	3			3	4					5			5	5	
250	3		2		6					10			5	5	
300			2		6					10			5	5	
400			3		10	4				10			6	6	
500					10	6							10	10	
600					10	6							10	10	
800						10							10	10	
1000						10								15	
1200															
1250														15	
1500														15	
2000															
2500															
3000															
4000															
DIMENSIONS	Height	65	65	81,5	81,5	106	58	58	90,5	90,5	72	90,5	90,5	116	119
	Width	52	52	70	70	101	34,5	34,5	56	56	44	56	56	87	70
	Depth	27	27	44	44	44	53,3	53,3	53,3	53,3	53,3	53,3	53,3	53,3	53,3
Min. distance betw. centers							27	27	45	45	35	45	45-35	70-50	45

Self-consumption of copper cables between the device and the transformer

For 5 A secondary

Cable section mm <sup>2</sup>	Power (two-pole cable) VA VA					
	Distance					
	1 m	2 m	4 m	6 m	8 m	10 m
1.5	0.58	1.15	2.31	3.46	4.62	5.77
2.5	0.36	0.71	1.43	2.14	2.86	3.57
4	0.22	0.45	0.89	1.34	1.79	2.24
6	0.15	0.30	0.60	1.89	1.19	1.49
10	0.09	0.18	0.36	0.54	0.71	0.89

For 1A secondary

Cable section mm <sup>2</sup>	Power (two-pole cable) VA VA					
	Distance					
	10 m	20 m	40 m	60 m	80 m	100 m
1	0.36	0.71	1.43	2.14	2.85	3.57
1.5	0.23	0.46	0.92	1.39	1.85	2.31
2.5	0.14	0.29	0.57	0.86	1.14	1.43
4	0.09	0.18	0.36	0.54	0.71	0.89
6	0.06	0.12	0.24	0.36	0.48	0.60
10	0.04	0.07	0.14	0.21	0.29	0.36

Maximum load (A) on copper bars according  
to DIN 43670 and 43671

Bar dimensions mm	Rated current (In) A		
	1 bar	2 bars	3 bars
20x5	325	560	
20x10	427	925	1180
30x5	379	672	896
30x10	573	1060	1480
40x5	482	836	1090
40x10	715	1290	1770
50x10	852	1510	2040
60x10	985	1720	2300
80x10	1240	2110	2790
100x10	1490	2480	3260

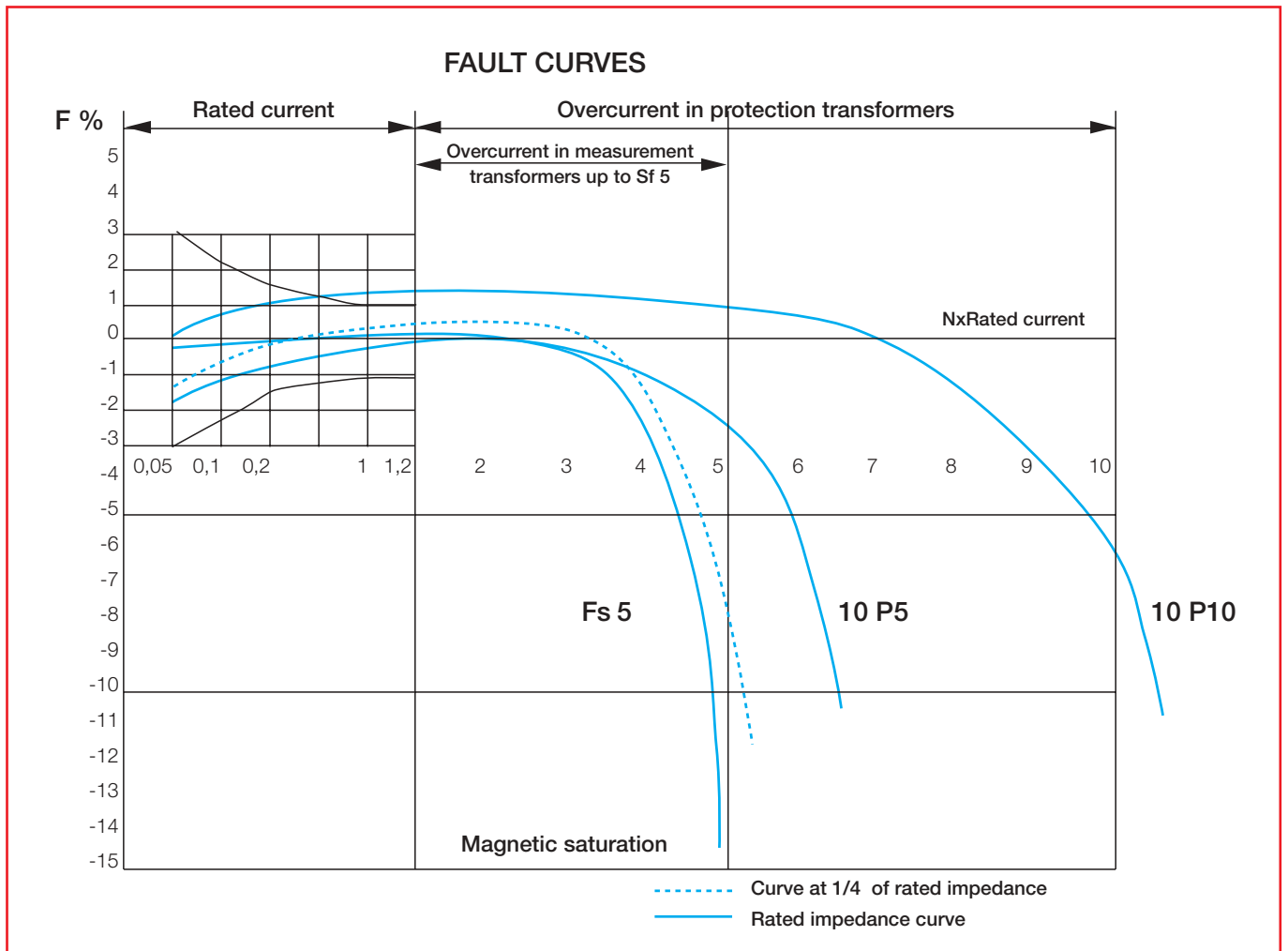
Rating	Ratio fault limit in %			
	0.05 In	0.2 In	In	1.2 In
0.5	±1	±0.75	±0.5	±0.5
1	±2	±1.5	±1	±1
3	From 0.5 In to 1.2 In = ±3			

Rating	Angle fault limit in %			
	0.05 In	0.2 In	In	1.2 In
0.5	±1.8	±1.35	±0.9	±0.9
1	±3.6	±2.7	±1.8	±1.8
3	No prescriptions			

Accuracy rating

- 0.5 rating is required for power meters.
- 1 rating is required for unofficial power measures and power meters (measurements within the firm).
- 3 rating is required for relays and protection devices.

According to DIN 185, VDE-0414 and UNIE-21028 current and angle fault limits shall comply with the value shown in the table.



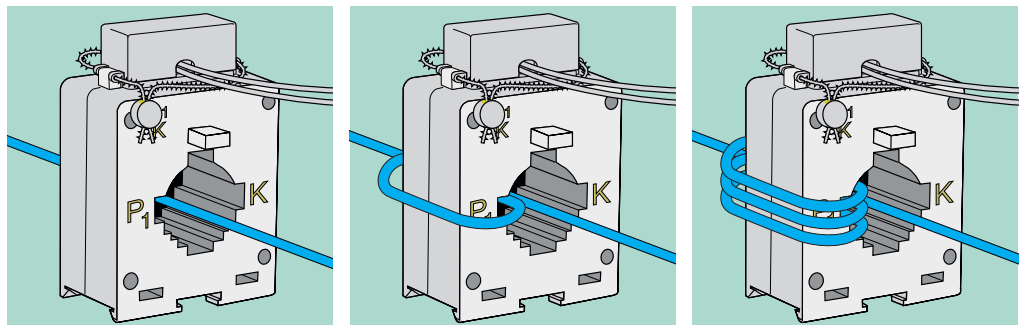
**Cable diameter calculation**

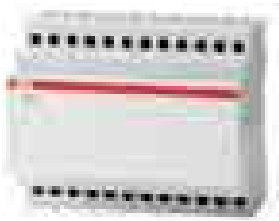
The following formula applies for determining the diameters of a 95 mm<sup>2</sup> cable:

- section =  $r \times r \times 3.14$  that is  $r^2 \times 3.14$  from which  $r = \sqrt{\text{section} / 3.14}$   $r = \sqrt{95 / 3.14} = 30.25 = 5.5$  mm, so the radius is 5.5 mm
- diameter =  $r + r$  so the diameter is  $5.5 + 5.5$  mm = 11 mm (copper diameter to be added to the insulating material thickness, total  $\varnothing$  about 20 mm).

With many insertion of the cable into the current transformer it is possible to halve the primary current while performance and rating values remain unaltered.

**Example**

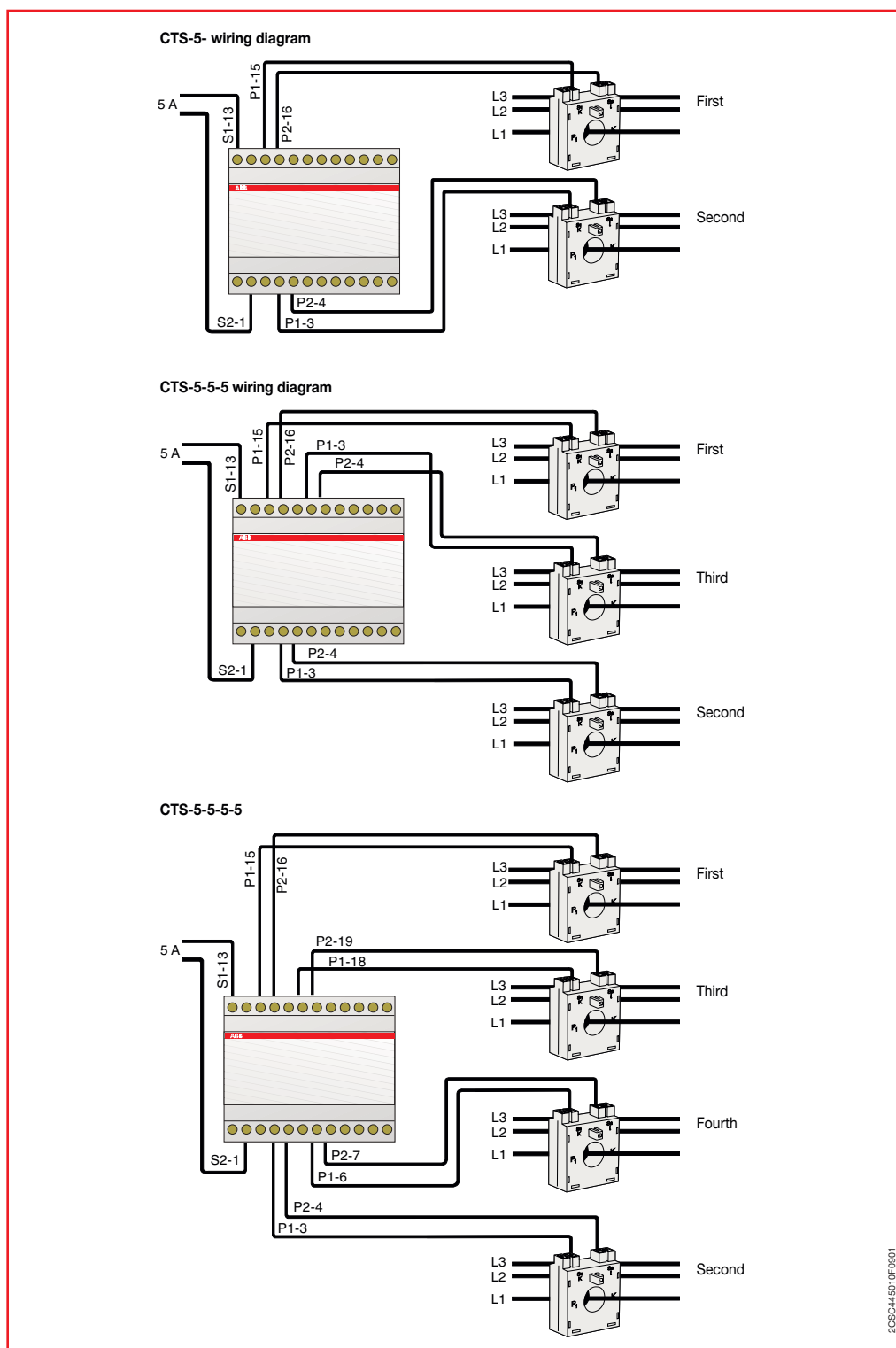




## SUMMING CURRENT TRANSFORMERS

The examples shown in the drawings refer to the connection to an ammetric phase. For the connection to two systems (ARON) it is necessary to use two summing transformers and two ammetric transformers (respectively for phase L1 and for phase L3).

For the connection to three systems it is necessary to use two summing transformers and three ammetric transformers (respectively for phase L1, for phase L2 and for phase L3).



2CSC445010F0901

**CURRENT AND VOLTAGE CONVERTERS**

**Technical characteristics**

		<b>Ammetric converters in a.c./d.c.</b>	<b>Voltmetric converters in a.c./d.c.</b>
<b>Auxiliary supply (separated)</b>	[V]	a.c. 230	a.c. 230
<b>Input rated values</b>		1-5 A	120-300-500 V
<b>Output rated values</b>	[V d.c.]	1-5-10	1-5-10
	[mA d.c.]	1-5-10-4...20	1-5-10-4...20
<b>Ohmic load</b>	[mΩ]	700	700
<b>Measurement field</b>		0±In	0±Un
<b>Accuracy rating</b>		0.5	0.5
<b>Overload</b>			
Permanent		2 In	2 Un
Instantaneous		10 In/1 sec.	10 Un/1 sec.
<b>Frequency</b>	[Hz]	50/60	50/60
<b>Time delay</b>	[ms]	≤300	≤300
<b>Alternated residue</b>		≤1%	≤1%
<b>Self-consumption</b>		current ≤0,8 VA aux. supply ≤4 VA	voltage ≤1 VA aux. supply ≤4 VA
<b>Input/output galvanic separation</b>			
Input/output insulation, aux. supply		2 kV/50 Hz -1 min	2 kV/50 Hz -1 min
Circuit/mass insulation		4 kV/50 Hz -1 min	4 kV/50 Hz -1 min
<b>Operating temperature</b>	[°C]	0...+55	0...+55
<b>Dimensions</b>		3-6 DIN modules	3-6 DIN modules
<b>Weight</b>	[kg]	0.30	0.30

Current converters (a.c. input)

4-20 mA d.c.  
20 mA d.c.  
10 mA d.c.  
5 mA d.c.  
1 mA d.c.

10 V d.c.  
5 V d.c.  
1 V d.c.

7 8 9 10 11 12

ABB

1 2 3 4 5 6

Supply

1 A MAX  
5 A MAX

C

Input signal (A)

The output selection must be performed by moving the programming pushbuttons according to the specific needs.

	SELECTABLE OUTPUTS																													
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6						
1 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	OFF	OFF	OFF	OFF	OFF	OFF
5 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	OFF	OFF	OFF	OFF	OFF	OFF
10 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	OFF	OFF	OFF	OFF	OFF	OFF
20 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	OFF	OFF	OFF	OFF	OFF	OFF
																									ON	ON	ON	ON	ON	ON

If a V output has been selected it is necessary to connect terminals 7 and 8, while for mA outputs the terminals 11 and 12 must be connected.

The input selection is performed by connecting the terminal of the common "C" (n. 6) to the terminal 4, for a 1 A input, and to the terminal 5 for a 5 A input.

Current converters (d.c. input)

The output selection must be performed by moving the programming pushbuttons according to the specific needs.

SELECTABLE OUTPUTS																			
	1	2	3	4	5	6	1	2	3	4	5	6							
1 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	1 V
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	
5 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	5 V
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	
10 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	10 V
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	
20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	4-20 mA
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	

Voltage converters (a.c. input)

The output selection must be performed by moving the programming pushbuttons according to the specific needs.

If a V output has been selected it is necessary to connect terminals 7 and 8, while for mA outputs the terminals 11 and 12 must be connected.

The input selection is performed by connecting the terminal of the common "C" (6) to the terminal 5, for a 120 V input, or to the terminal 4 for a 300 V input or to the terminal 3 for a 500 V input.

SELECTABLE OUTPUTS																			
	1	2	3	4	5	6	1	2	3	4	5	6							
1 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	1 V
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	
5 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	5 V
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	
10 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	10 V
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	
20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF	4-20 mA
	■	■	■	■	■	■	■	■	■	■	■	■	ON	■	■	■	■	ON	



Voltage converters (d.c. input)

The diagram illustrates the terminal connections and selection options for the voltage converter. The top terminal block (terminals 13-18) is used for output selection, with labels for 10 V d.c., 5 V d.c., 1 V d.c., 4-20 mA d.c., 20 mA d.c., 10 mA d.c., 5 mA d.c., and 1 mA d.c. The bottom terminal block (terminals 7-12) is used for input selection, with labels for Supply and Input signal 60 mV. The ABB logo is visible on the module.

The output selection is controlled by a set of pushbuttons labeled "SELECTABLE OUTPUTS". The selection options are as follows:

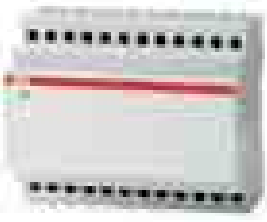
Output	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 mA	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
5 mA	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
10 mA	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
20 mA	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

The input selection is controlled by a set of pushbuttons labeled "INPUT SIGNAL SELECTION". The selection options are as follows:

Input	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
120 V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
300 V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
500 V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

The output selection must be performed by moving the programming pushbuttons according to the specific needs.

The cables of the selected inputs must be connected to terminals 4 and 6.



2CSC445013F0901

TRANSDUCERS FOR POWER FACTOR METERS

Technical characteristics

Separated auxiliary supply	[V]	a.c. 230/400
Input rated values	[V]	a.c. 230/400 (5 A)
Output rated values (selectable)		1, 5, 10 V d.c. 1, 5, 10, 20, 4/20 mA d.c.
Ohmic load	[Ohm]	700
Measurement field		0+Pn (0+Qn)
Conversion type		proportional to phase angle or to cosφ
Accuracy rating		0.5
Permanent overload		2 In/1.2 Un
Instantaneous overload		10 In/2 Un for 1 sec.
Operating frequency	[Hz]	50/60
Time delay	[ms]	300
Alternated residue		1%
Self-consumption		voltage=1 VA/curr.=0.8 VA/aux. supply=4 VA
Input/output galvanic separation		input/output insulation, aux. supply 2 kV for 1 min./50 Hz circuit/mass insulation 4 kV for 1 min./50 Hz
Operating temperature	[°C]	0...55
Dimensions		6 DIN modules
Weight	[kg]	0.49

Single-phase line and input and output selection

The output selection must be performed by moving the programming pushbuttons according to the specific needs.

If a V output has been selected it is necessary to connect terminals 13 and 14, while for mA outputs the terminals 16 and 17 must be connected. For supplying the device at 230 V connect the common terminal "C" and the terminal 23.

**Pushbutton for signal switch**

**Left** (black bar): proportional to the cosp.

**Right** (white bar): Proportional to the phase angle (output in grades, for insertion with analogue reading instrument).

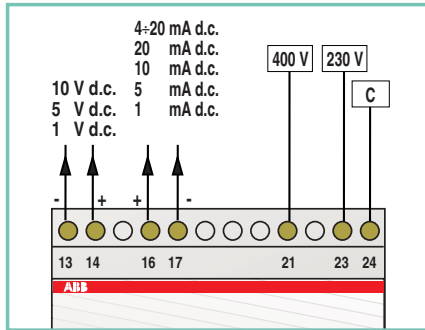
Connect input voltage to terminal 8.  
Connect input current to terminals 1 and 2.

**SELECTABLE OUTPUTS**

	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
10 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
20 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

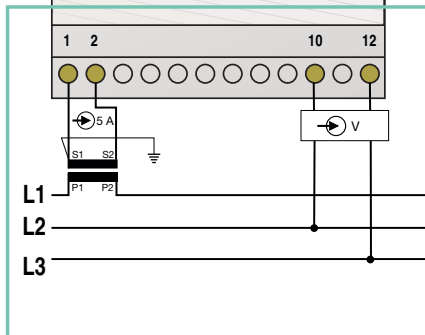
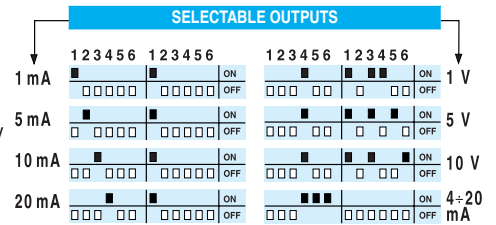
2CSC445013F0901

Balanced three-phase line without neutral (3 wires)



The output selection must be performed by moving the programming pushbuttons according to the specific needs.

If a V output has been selected it is necessary to connect terminals 13 and 14, while for mA outputs the terminals 16 and 17 must be connected. For supplying the device at 230 V connect the common terminal "C" and the terminal 23, while for a 400 V supply it is necessary to connect the common terminal "C" and the terminal 21.



**Pushbutton for signal switch**

**Left**  
Proportional to the cosp.

**Right**  
Proportional to the phase angle (output in grades, for insertion with analogue reading instrument).

Connect input voltage to terminals 10 and 12.  
Connect input current of L1 phase to terminals 1 and 2.

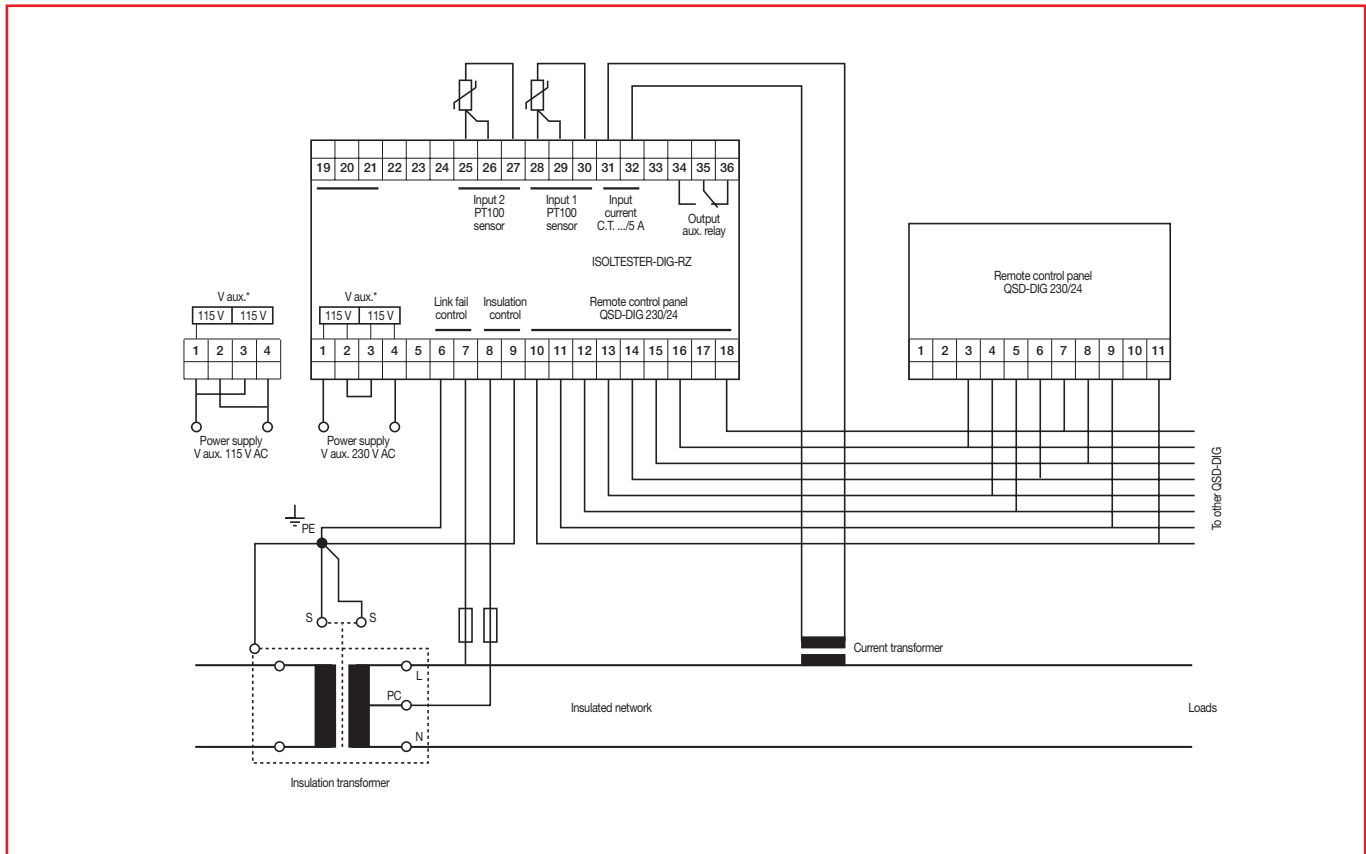
2CSC445014F0801

## INSULATION MONITORS

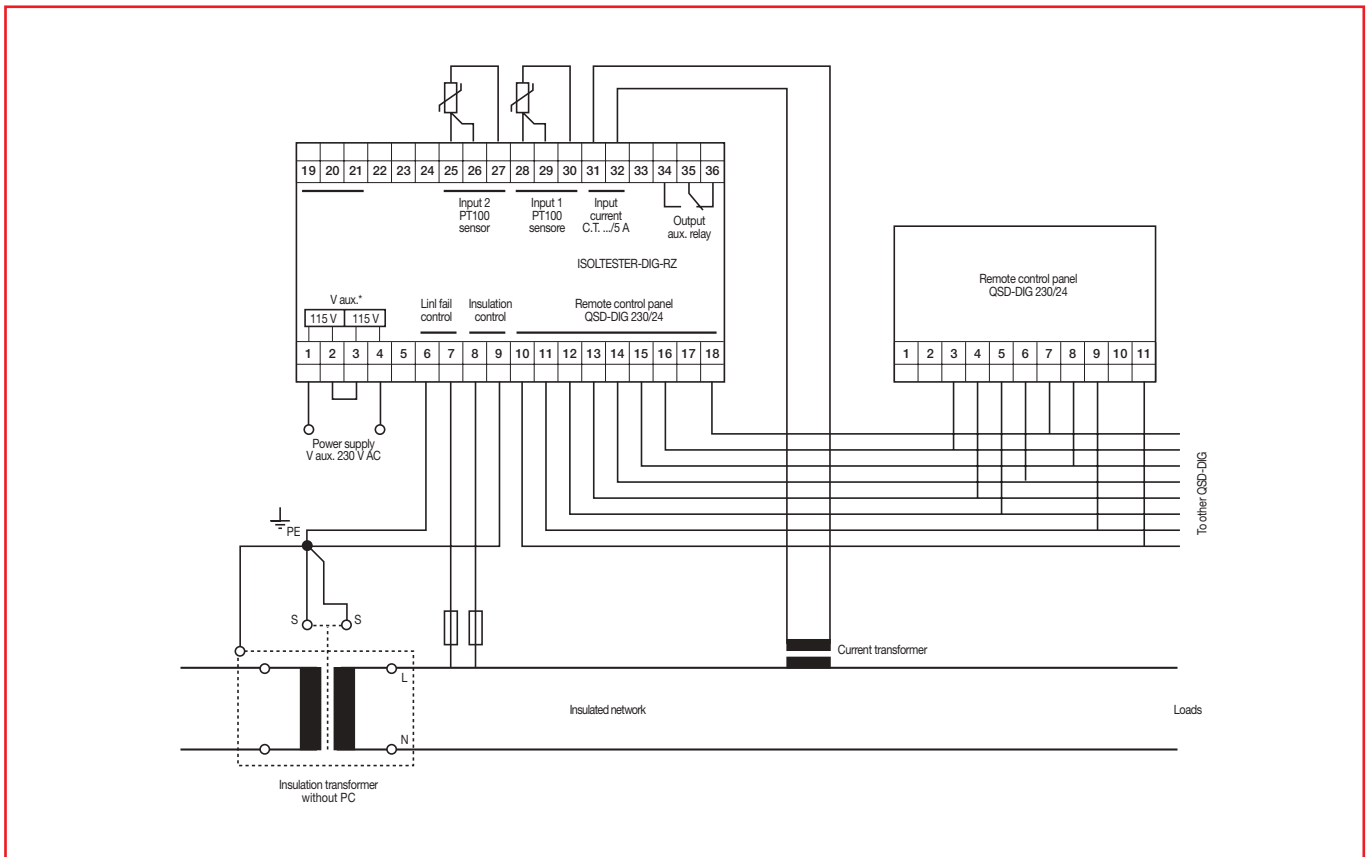
### Isoltester-DIG-RZ

The new Isoltester-DIG are available in the RZ version which make control of insulation in networks up to 230 VAC and they are totally compatible with the previous range of insulation monitors (Isoltester-C).

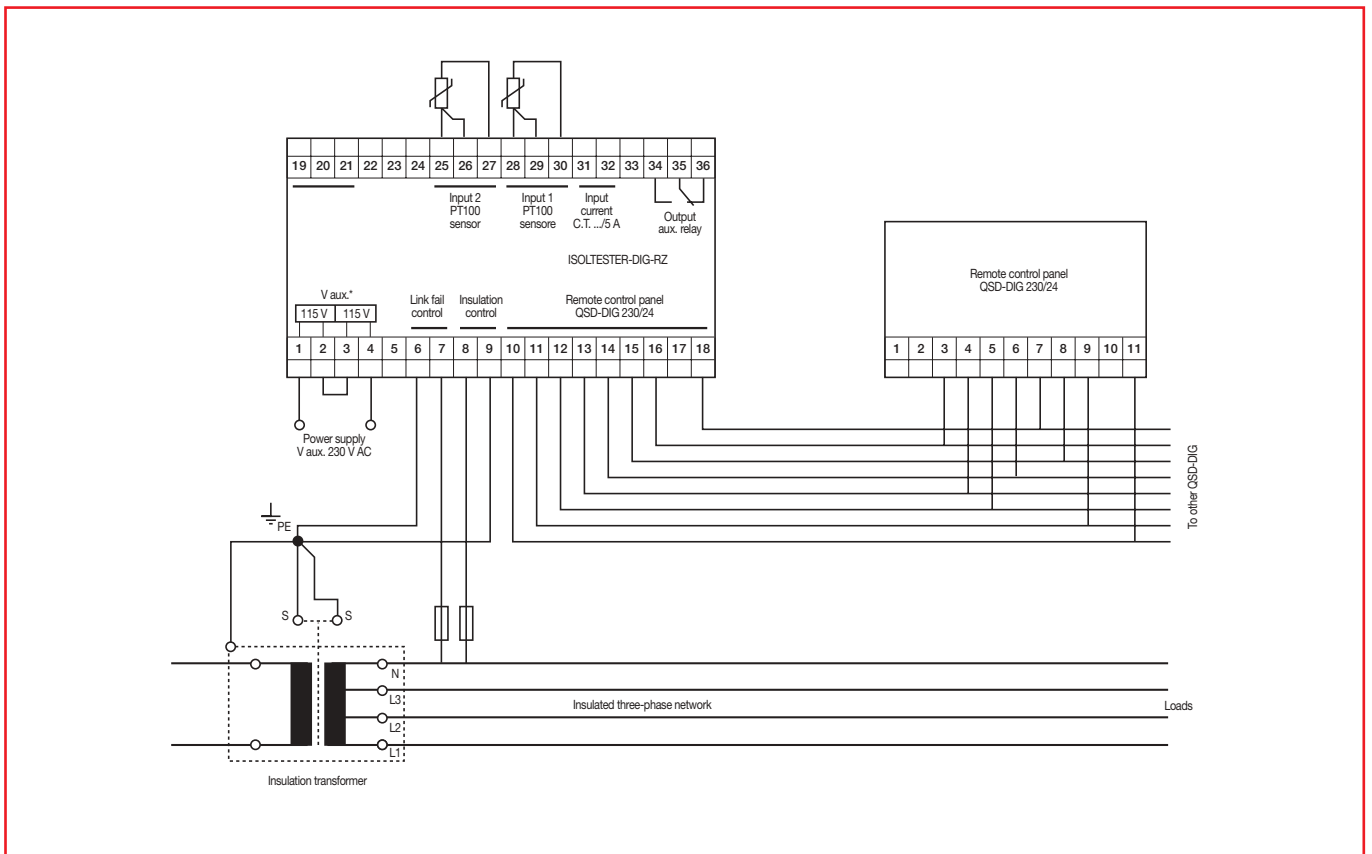
#### Wiring diagram with transformer with central socket (PC)



Wiring diagram with transformer without central socket (PC)

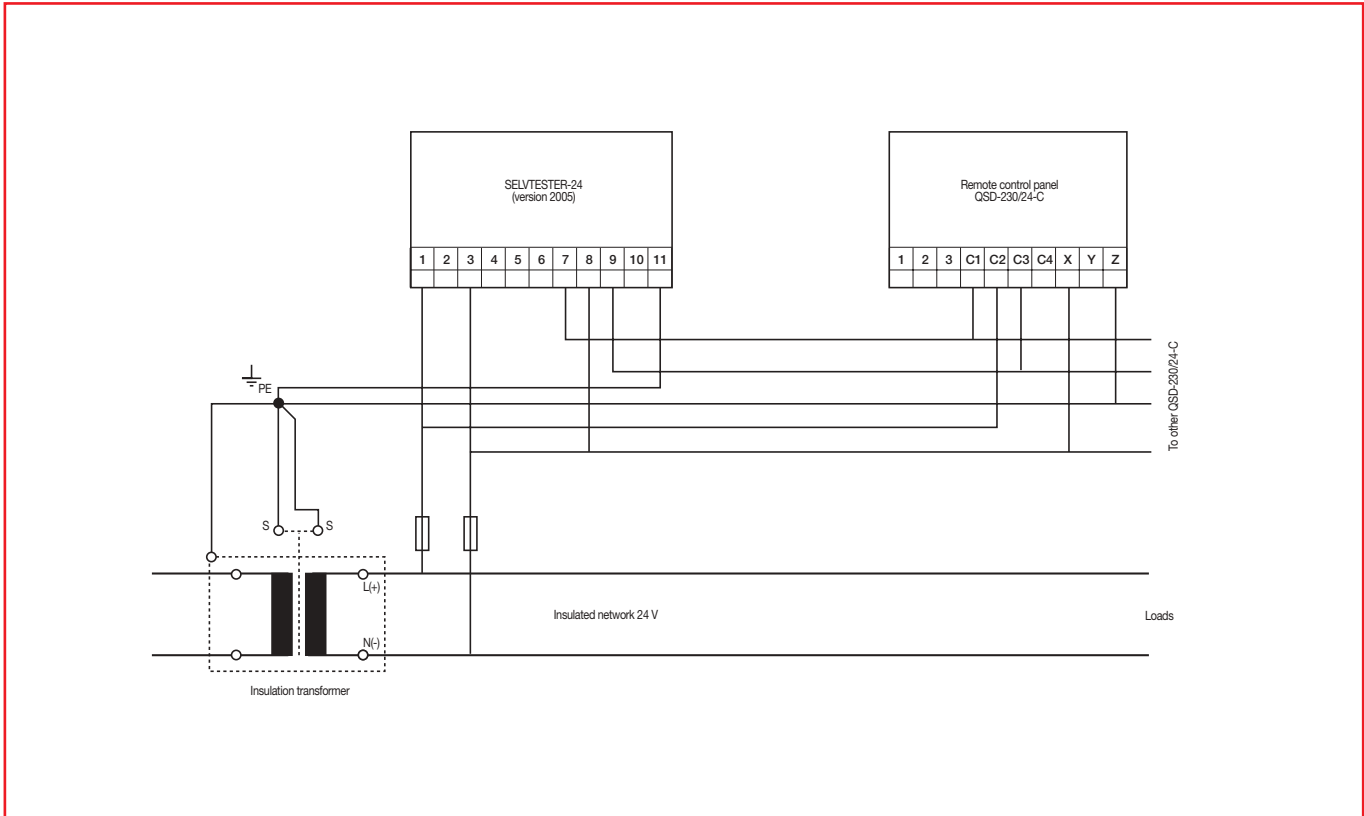


Wiring diagram with three-phase transformer

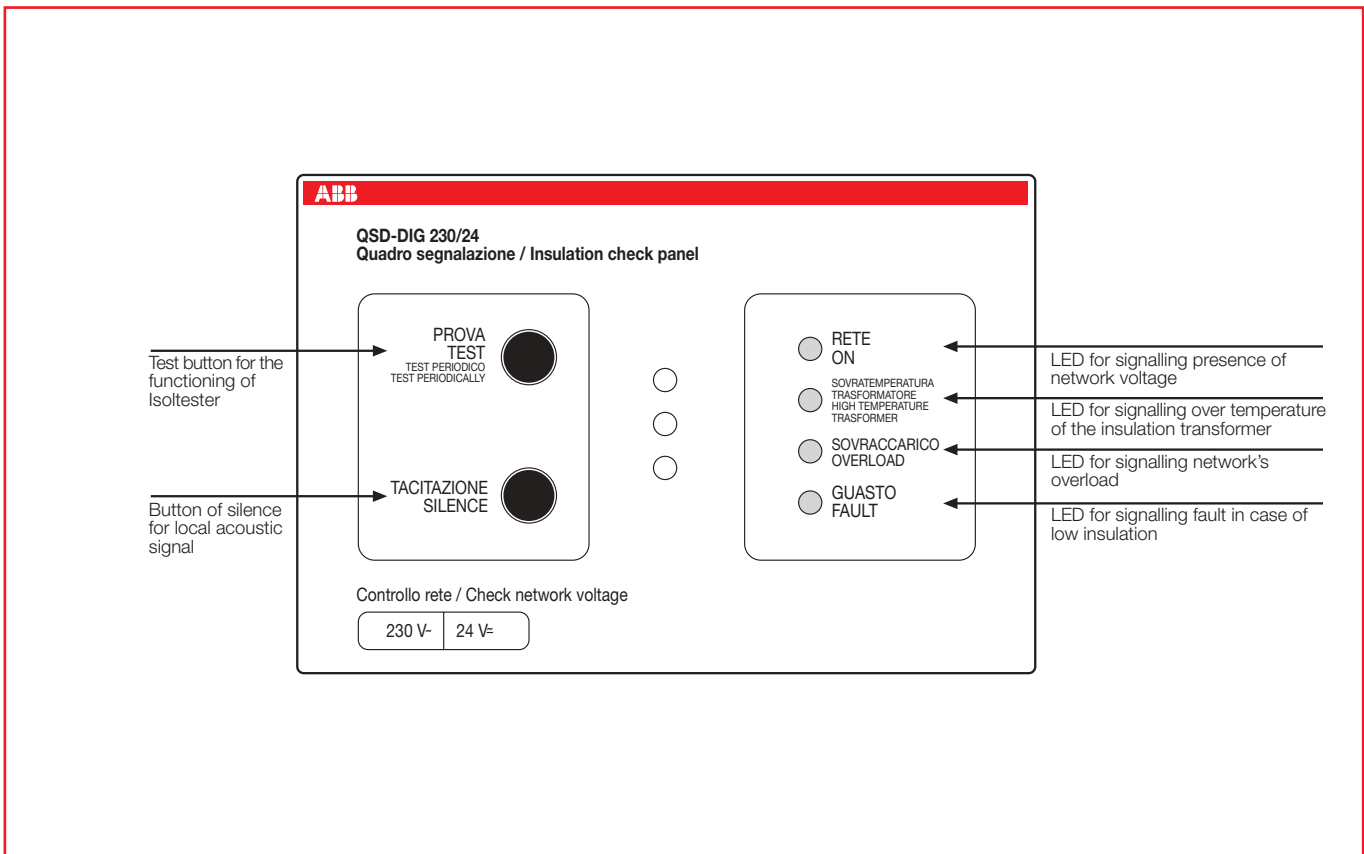


Selvtester

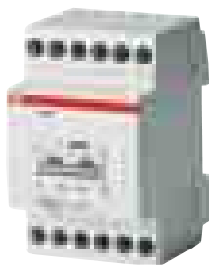
Wiring diagram with transformer 220/24



QSD-DIG



11



## **TM/TS BELL TRANSFORMERS**

The strict design criteria and the quality of materials used guarantee a high reliability of these devices. Windings are completely separated and insulated, so that the transfer of dangerous voltages on the secondary is prevented even in the case of operation faults

Voltage values on the secondary with a rated load (according to IEC-EN 61558-2-8 Standard) can deviate by 15% from the rated value.

These safety transformers are available in 4 series.

### **- Failure-proof (TM series)**

Following a possible anomalous use they do not operate any more, but they do not pose any danger for the user or for adjacent electric parts: the series includes 8 models with 10, 15, 30 and 40 VA power and 4, 8, 12 and 24 V output voltages.

### **- Short-circuit proof not by construction (TS8 series)**

Even after a short-circuit they maintain the temperature below the specified limits and can operate; TS8 series includes 3 models with 8 VA power and output voltage of 8, 12, 24 V.

### **- Short-circuit proof not by construction (TS8/SW series)**

Unlike the previous version this is equipped with an ON-OFF pushbutton on the frontal part that allows the insertion or the disinsertion of the transformer in the line; TS8/SW series includes 4 models with 8 VA power and output voltages of 4, 6, 8 and 12 V.

### **- Short-circuit proof not by construction (TS16/TS24 series)**

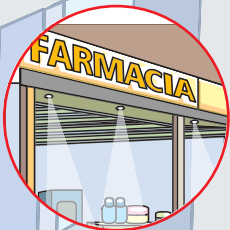
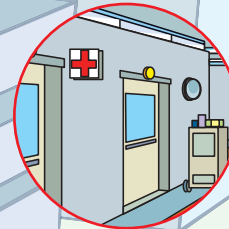
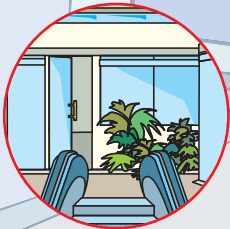
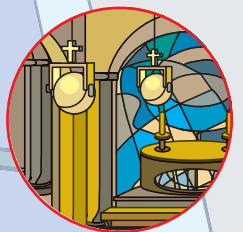
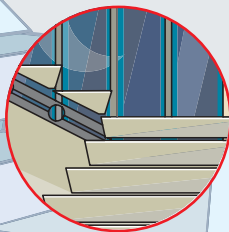
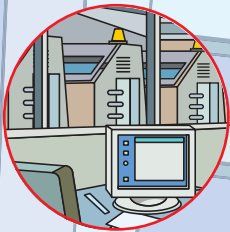
Even after a short-circuit they maintain a temperature below the specified limits. Moreover they are equipped with a thermal cutoff device with automatic closing that automatically restores the current when the relevant transformer part is cold enough or when the load has been removed; TS16/TS24 series includes 7 models with power of 16 and 24 VA and output voltages of 4, 6, 8, 12 and 24 V.

## Index

### MRDCs

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## Examples of applications

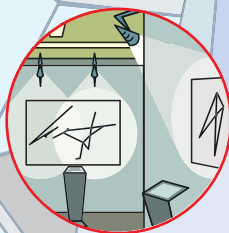
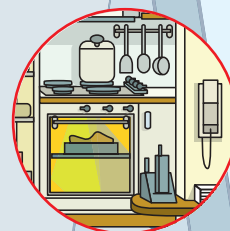
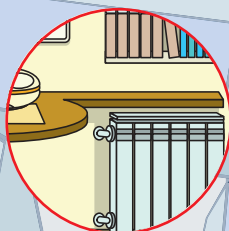
*Residential buildings*

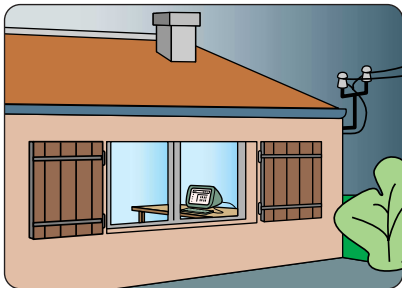
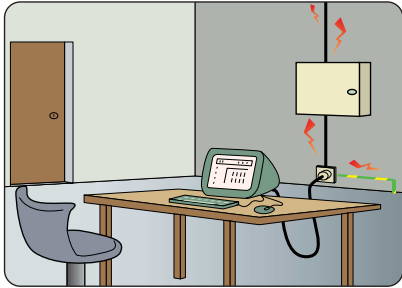
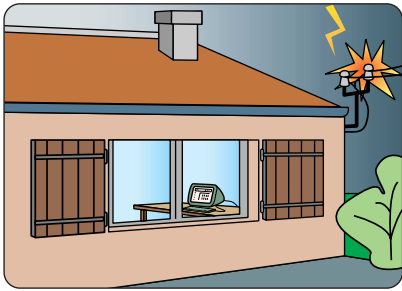
*Public buildings*

*Commercial buildings*

*Industry*

*Handicraft*





**Operating principle**

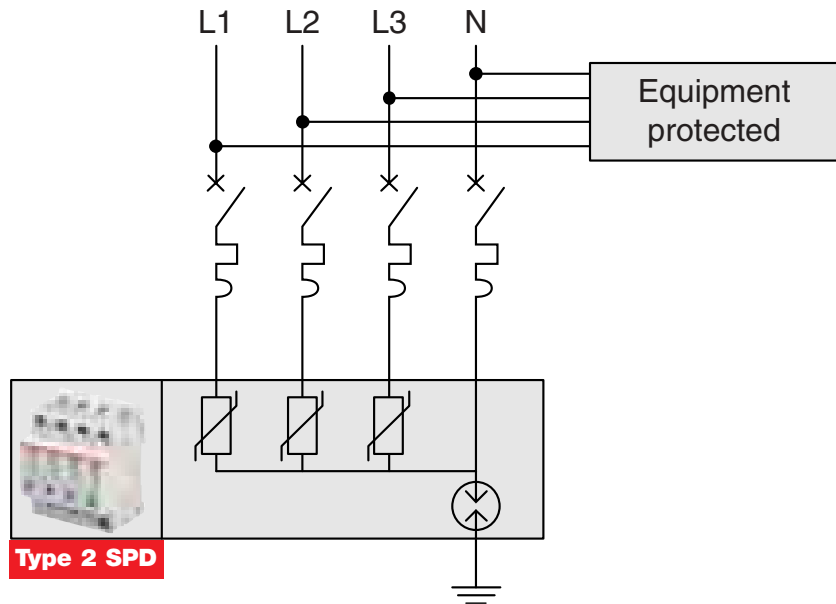
The Surge Protection Devices (SPDs), suitable for residential, commercial and industrial applications, are designed to limit transient overvoltage and run-off lightning currents.

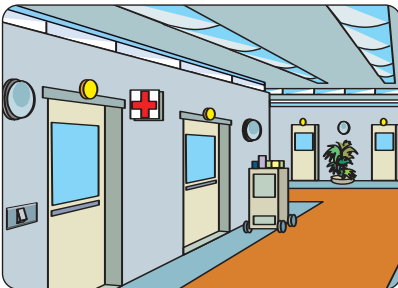
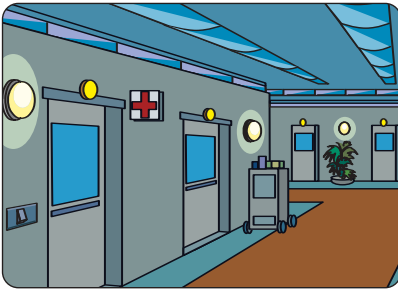
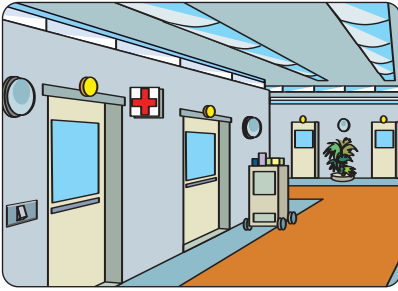
**Application environments**

Application environments  
The Surge Protection Devices (SPDs) are necessary in any environment where the lightning risk exists (direct lightning strike or overvoltages may occur).

**Example of installation**

*As shown in the diagrams, one of the possible applications is to protect the equipment (TV, computer, ...) against overvoltage thanks to a Surge Protection Device (SPD) which ensures the protection in common mode (Ph-PE / N-PE) and differential mode (Ph-N).*





### Operating principle

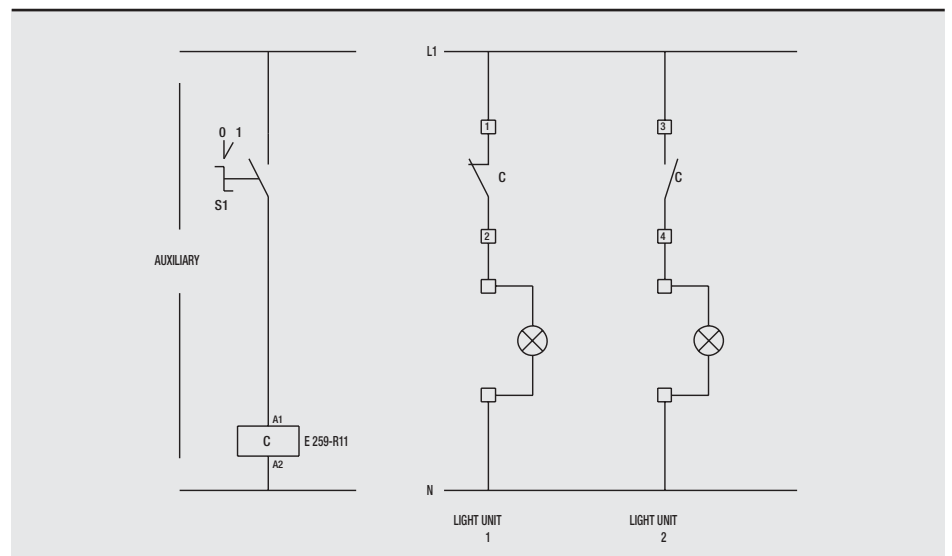
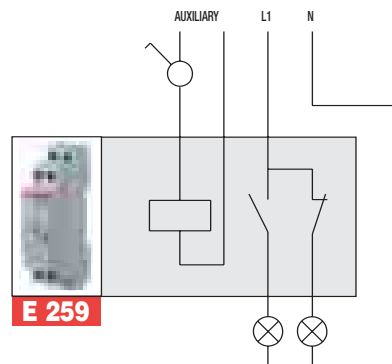
The E 259 installation relays, suitable for residential and commercial applications, are available in three versions: with NO contact, with NO and NC contacts, and with two NO contacts.

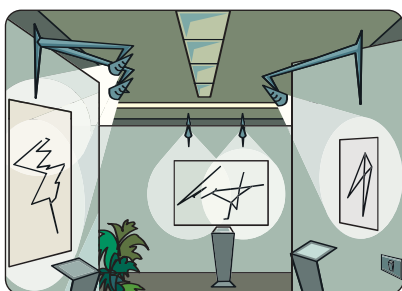
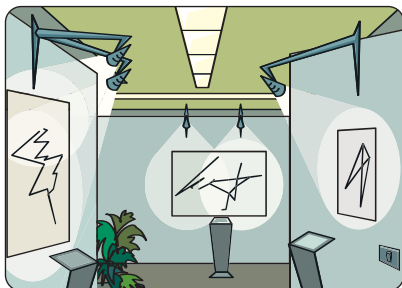
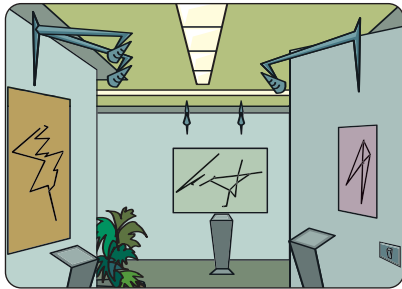
### Application environments

The E 259 installation relays are particularly indicated in any environment and situation where it is necessary to control considerable power loads (i.e. lighting systems).

### Example of installation

*As shown in the diagrams, one of the possible applications is to mount the E 259 R11 installation relay with a NO and a NC contact inside the electric system of a hospital ward. The first control sent through pushbutton to the lighting circuit will switch off the ceiling lights and switch on the corridor lamps, while the second impulse returns to the previous state.*





### Operating principle

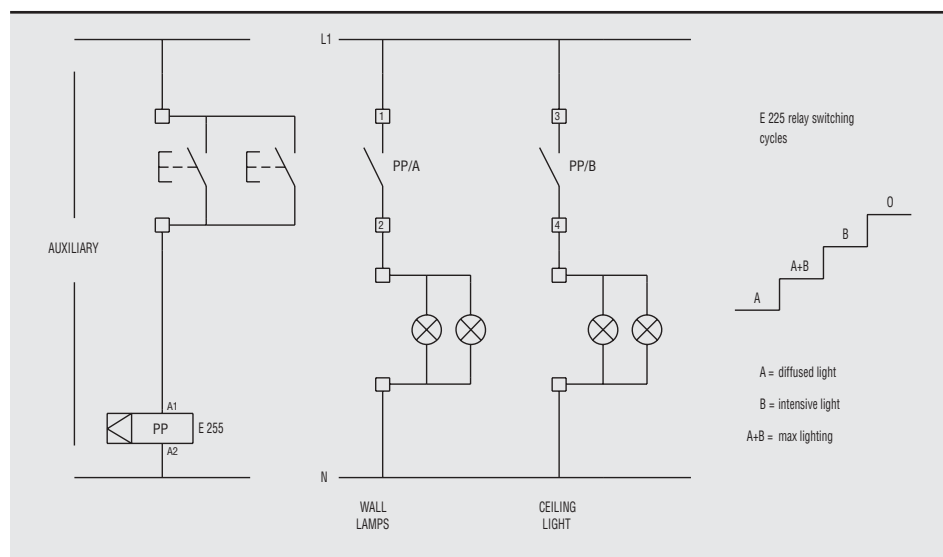
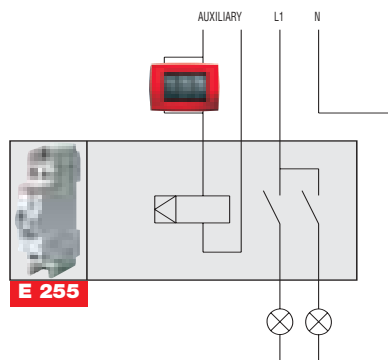
The two contacts of the E 255 latching relays switch the position (open/closed) at each impulse according to a sequence programmed by the control pushbutton circuit.

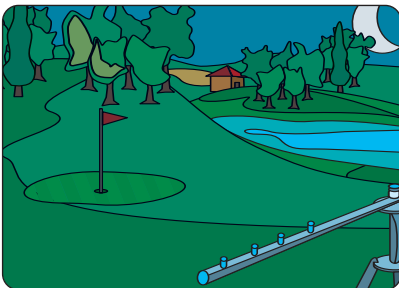
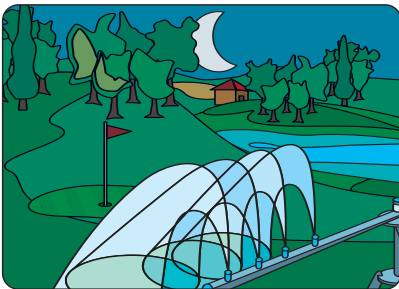
### Application environments

The E 255 latching relays are particularly indicated in environments and situations requiring the load sequential control through a single pushbutton circuit (offices, restaurants, etc.)

### Example of installation

*As shown in the diagrams, one of the possible applications is to mount the E 255 latching relays inside the lighting system of an art gallery. The first pushbutton impulse will switch on the ceiling lights, the second triggers the wall lamps, the third switches off the ceiling lights and the fourth switches off the wall lamps.*





**Operating principle**

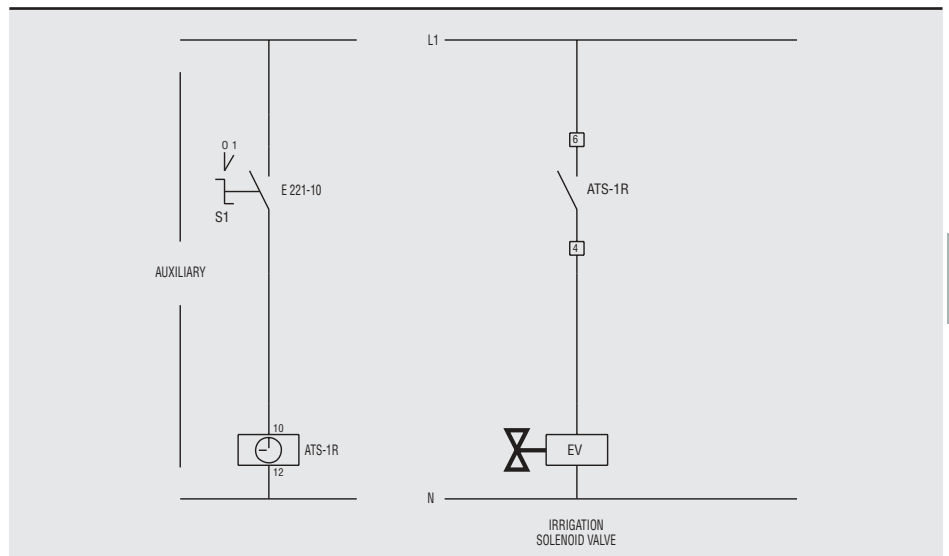
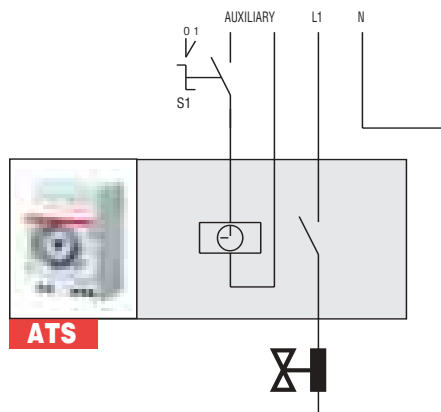
The ATS electro-mechanical time switches enable to control the circuit opening/closing according to a daily or weekly program or to manually set permanent ON/OFF operation.

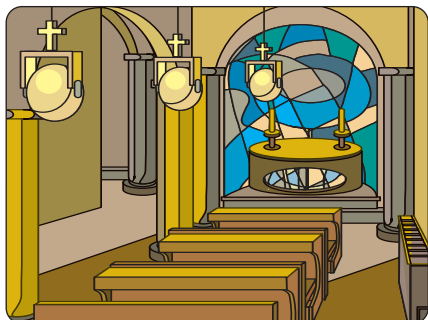
**Application environments**

The ATS electro-mechanical time switches are particularly indicated in any environment and situation where it is necessary to program system load operation according to a daily or weekly frequency (shop lighting system, public buildings, heating systems, irrigation systems, etc.).

**Example of installation**

*As shown in the diagrams, one of the possible applications is to mount the ATS electro-mechanical time switches inside the power supply circuit of a golf field. In this case the device programming enables the daily activation of the irrigation system at a preset time.*

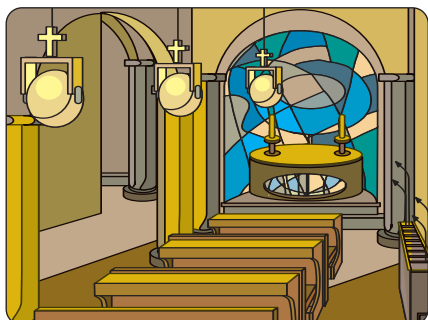




### Operating principle

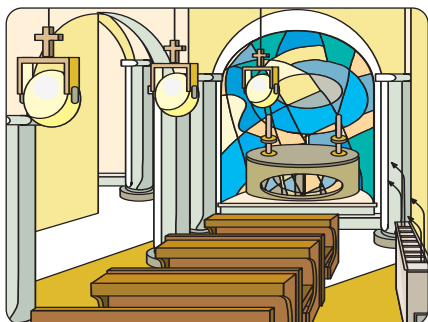
The DTS two-channel digital time switches enable to open and close circuits according to a daily or weekly program, controlling single loads or group of loads even when they require different time controls with a common time reference.

In this example, the digital time switch DTS 7/2 allows the operation of heating as well as lighting systems of a church when services are performed; while when no service is performed the device only controls the heating system.



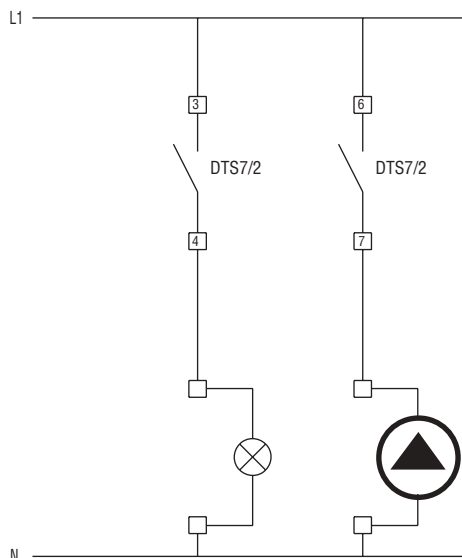
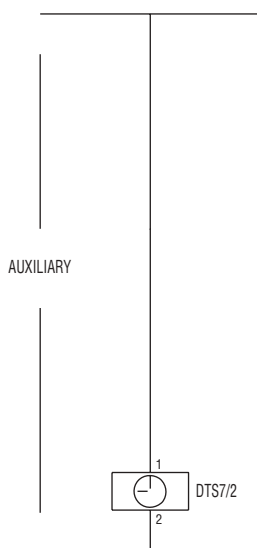
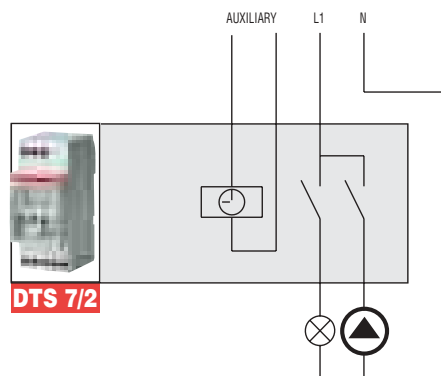
### Application environments

The DTS 7/2 two-channel digital time switches are particularly indicated in environments and situations requiring the management of multiple loads according to a time program flexible enough to include or exclude their application based on the day of the week (offices, schools, public areas, etc.).

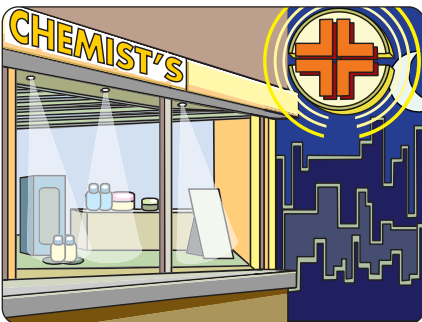
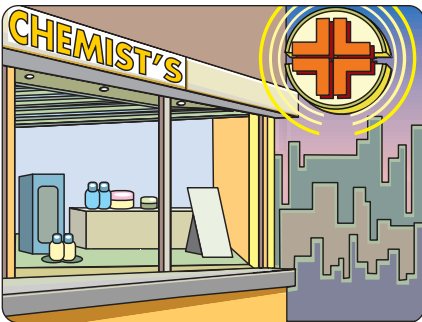
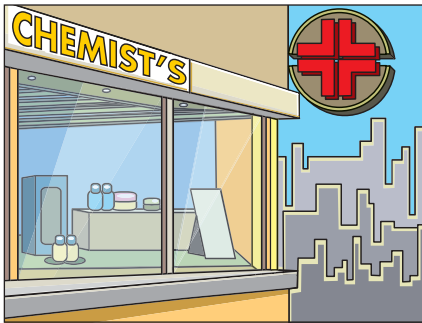


### Example of installation

*As shown in the diagrams, one of the possible applications is to mount the DTS 7/2 two-channel digital time switch inside the power supply circuit of a church, where in the days when no service is performed only the heating system is activated (programmed on one of the two channels) at a preset time, while on Sundays and when services are performed the lighting system is also switched on (through a program on the second channel). According to the controlled system power, the activation is performed by an ESB contactor.*



DTS 7/2-TWS twilight switches with  
built-in time switches



Operating principle

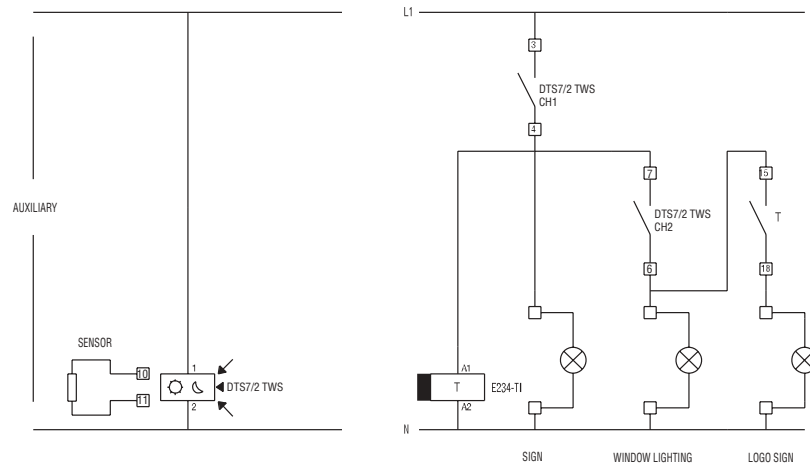
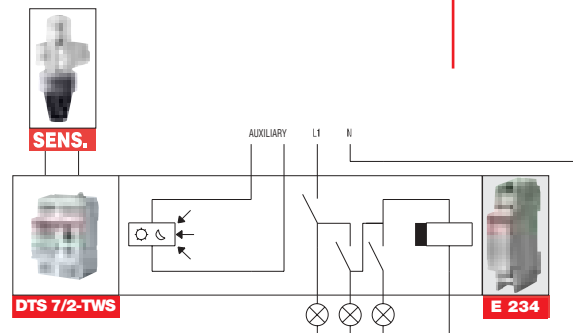
The diagram shows the installation of the DTS 7/2-TWS twilight switches with built-in time switches in the lighting system of a chemist's. When the external light decreases below a certain level (i.e. shop opening during evening hours), the device controls the lighting of windows and sign. When the chemist's is opened during the night, the switch-on of all lights is set through time programming

Application environments

The installation of DTS 7/2-TWS twilight switches with built-in time switches is suitable for any environment and situation needing the rationalization of power consumption (shops, offices and public passage areas, parking, parks, etc.).

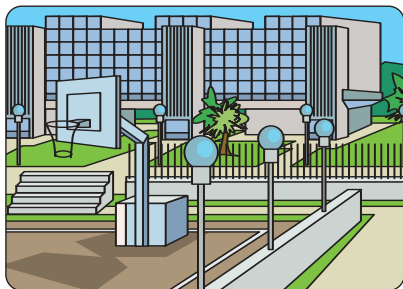
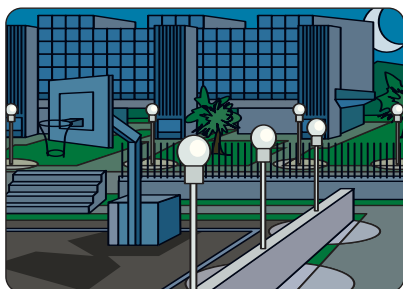
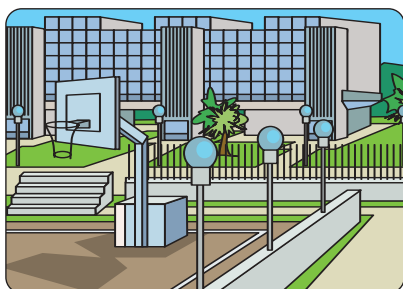
Example of installation

*As shown in the diagrams, one of the possible applications is the installation of the DTS 7/2-TWS twilight switches with built-in time switches in the lighting system of a chemist's. When the external light decreases below a certain level (i.e. shop opening during evening hours), the twilight switch controls the lighting of windows, sign and cross sign. The last one can have an intermittent switch-on/off because of E 234 TI time delay relay installation. When the chemist's is opened during the night, the switch-on of all lights (using the twilight switch) is set through date and time programming using time switch. When the chemist's is closed, the time switch programming switches off the windows and cross sign lights independently from twilight switch (sign ON).*





DTS 7/1-TWS twilight switches with  
built-in time switches



Operating principle

DTS 7/1-TWS twilight switches with built-in time switches enable to control lighting system switch-on according to ambient lighting level and to specific time programming (daily or weekly).

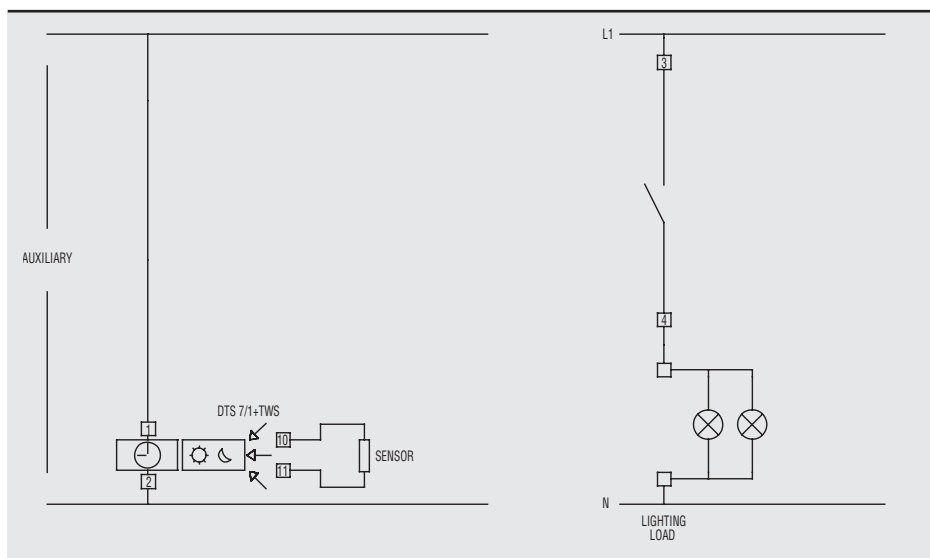
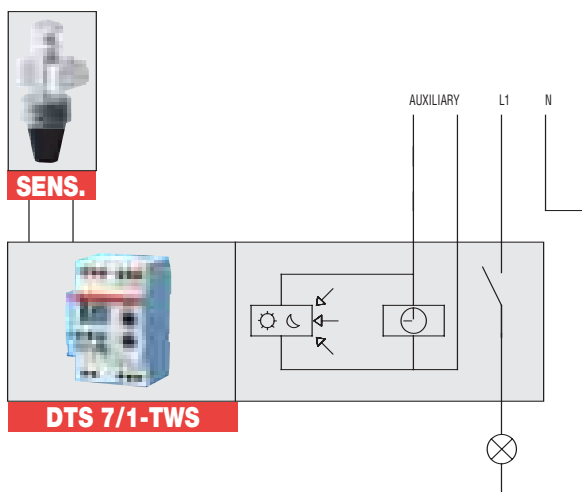
Application environments

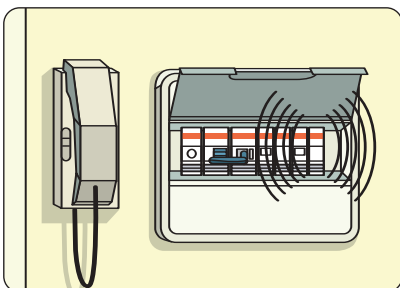
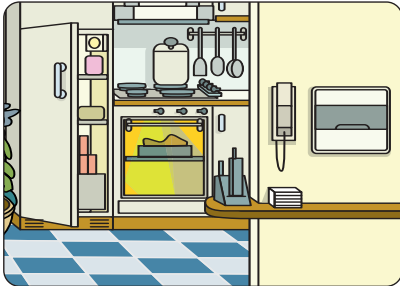
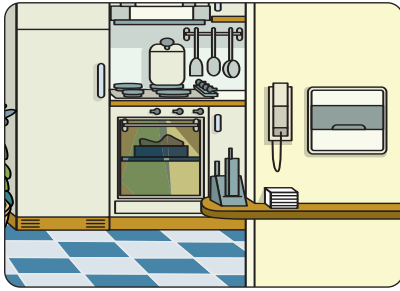
The installation of DTS 7/1-TWS twilight switches with built-in time switches is suitable for any environment and situation needing the rationalization of power consumption (shops, offices and public passage areas, parking, parks, etc.).

Example of installation

*As shown in the diagrams, one of the possible applications is the installation of the DTS 7/1-TWS twilight switches with built-in time switches in an office district system.*

*The external light switch-on depends on ambient lighting level during working days; otherwise, no lighting element control is programmed during non-working days.*





### Operating principle

The RAL overload alarms constantly compare the maximum preset power consumption value to effective system power consumption.

Approaching allowed threshold, they signal to disconnect one of the loads through acoustic alarm avoiding the main circuit breaker tripping.

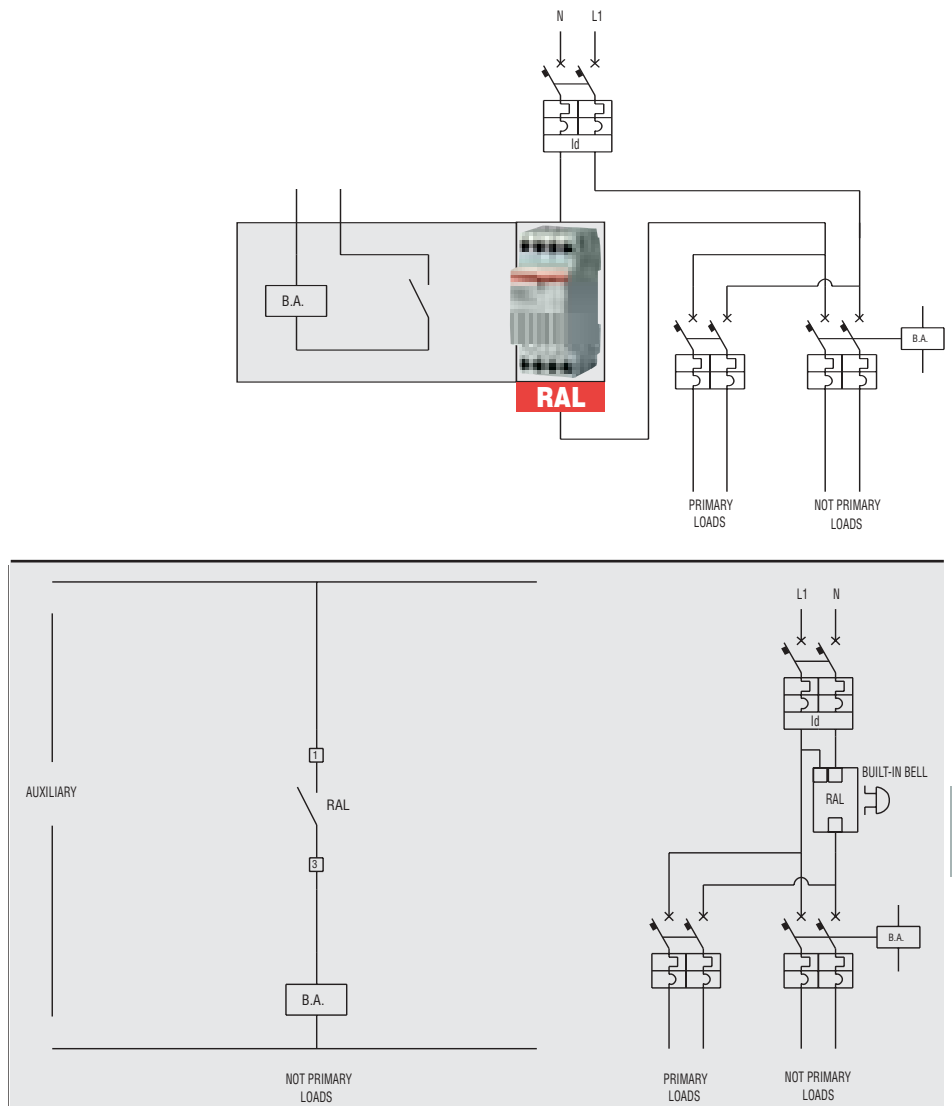
Connecting the S 9-T415 undervoltage release to the appropriate contact, the RAL overload alarms provide an acoustic alarm and simultaneously opens the circuit-breaker protecting one or more not primary loads.

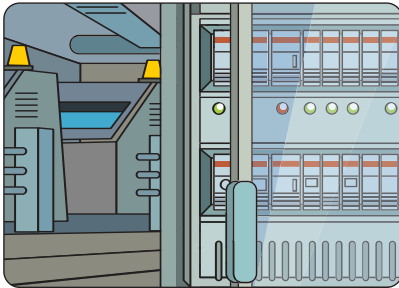
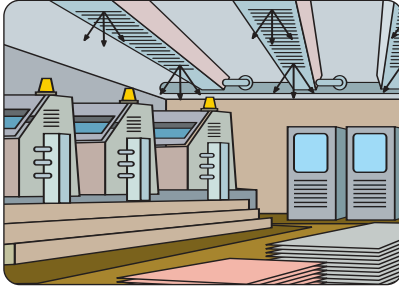
### Application environments

The installation of the RAL overload alarms is suitable for any environment and situation in order to avoid power consumption which could trip the limiting circuit breaker of the system.

### Example of installation

*As shown in the diagrams, one of the possible applications is the installation of the RAL overload alarms in the domestic system where the electric oven and washing machine are simultaneously switched on increasing the power consumption. When the power consumption approaches the preset threshold values, an acoustic alarm is activated and the washing machine switches off automatically through an undervoltage release.*





### Operating principle

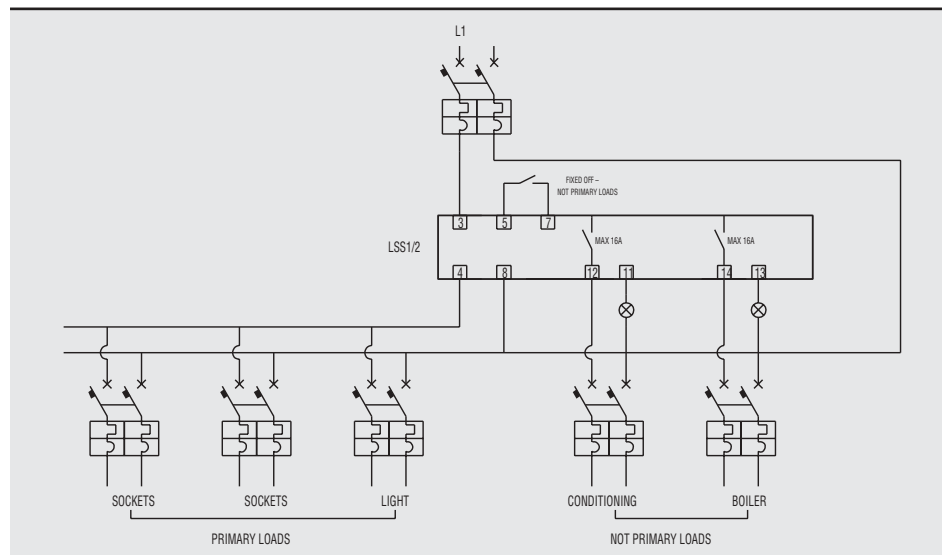
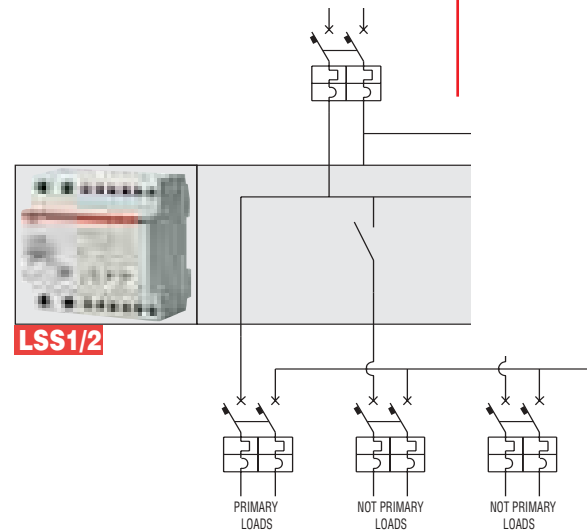
LSS1/2 load shedding switches are used in case of exceeding of consumption threshold allowed in the system by switching off in sequence one or two loads, if necessary. At preset intervals and until current consumption is not below the reference level, the switch tries to reset the disconnected loads.

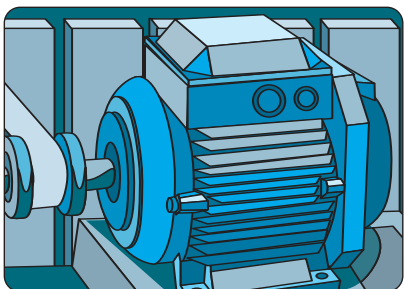
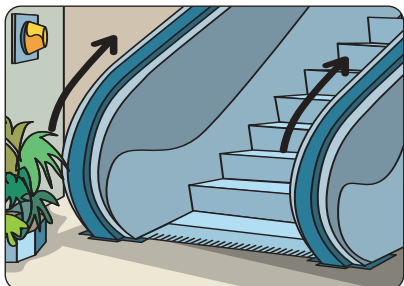
### Application environments

The installation of the LSS1/2 load shedding switches is suitable for any environment and situation where it is necessary to control electric energy consumption within consumption limits allowed in the system.

### Example of installation

**As shown in the diagrams, one of the possible applications is the installation of the LSS1/2 load shedding switches in a printing office system, where the conditioning switch-on causes the exceeding of the energy consumption threshold defined with the supplying company by contract. The LSS1/2 load shedding switch preserves printing machines operation by switching off one or two primary loads automatically (i.e. night conditioning and lighting), where ON red leds indicate temporary OFF. After a preset interval, the switch checks that current consumption values fall within the limits again trying to reset the previously disconnected loads.**





### Operating principle

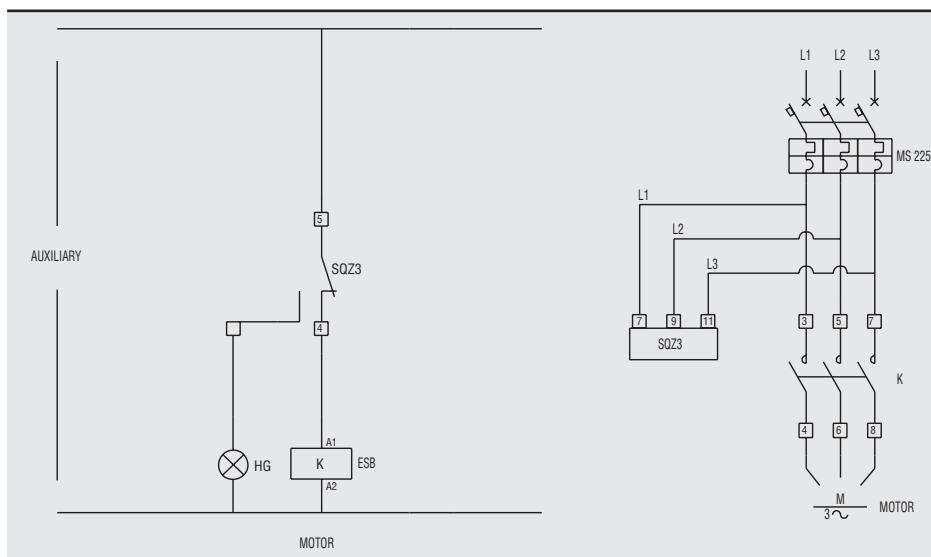
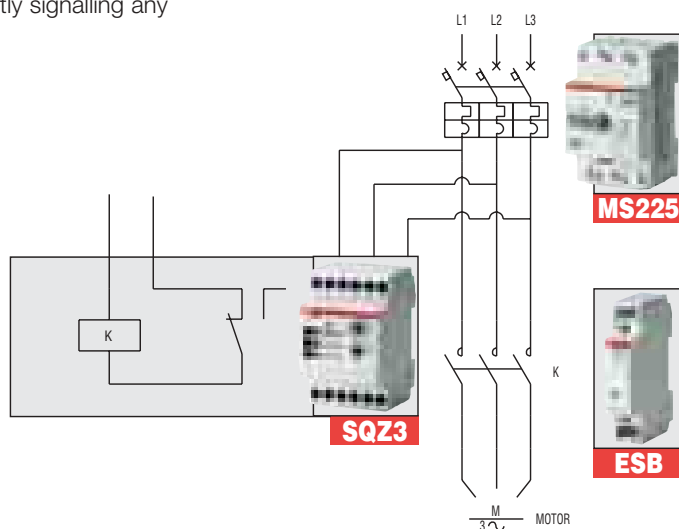
Through an output relay with contact in safety switching, the SQZ3 phase and sequence presence devices for 400 V a.c. three-phase networks enable the phase and sequence presence management monitoring also the minimum voltage (adjustable up to 70% of  $V_n$ ). In case of any defect, the device operates within a range from 2 to 20 seconds, with the opportunity to control the appropriate acoustic signals, motor controlling contactors or circuit breakers.

### Application environments

The installation of the SQZ3 phase and sequence presence relays are particularly suitable for any environment and situation where it is necessary to control the three-phase network operation promptly signalling any defect.

### Example of installation

*As shown in the diagrams, one of the possible applications is the installation of the SQZ3 phase and sequence presence relays in a department store, where the escalator supply circuit has a phase variation determining the SQZ3 relay intervention on the ESB contactor and causing the motor block and the alarm lighting indication.*

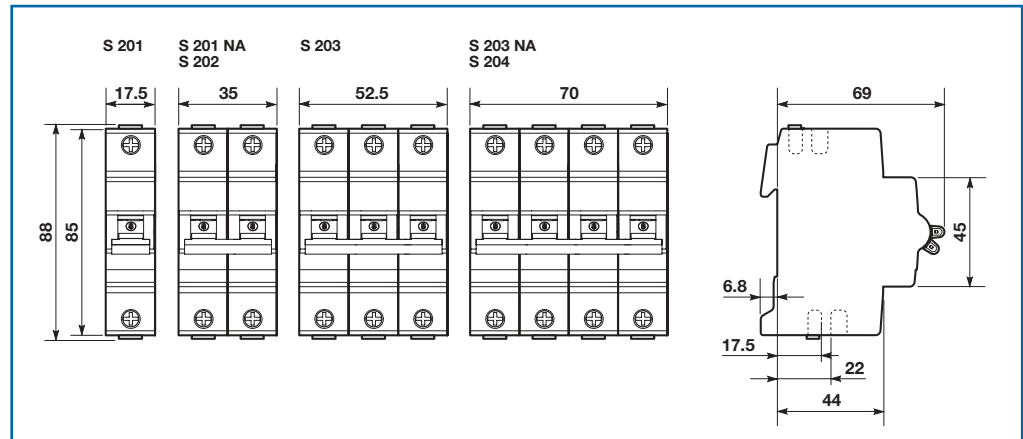


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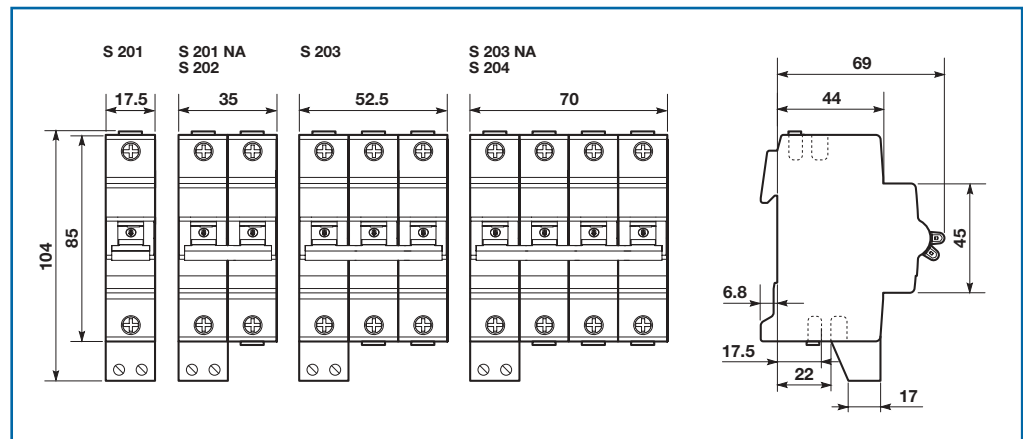
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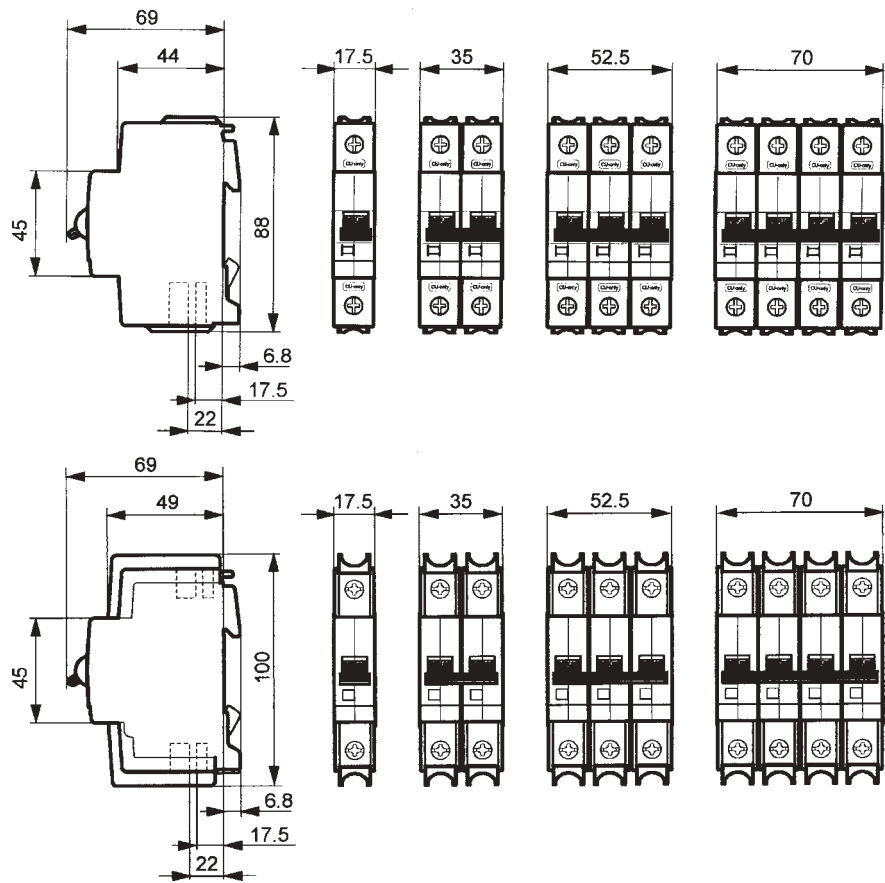
S 200



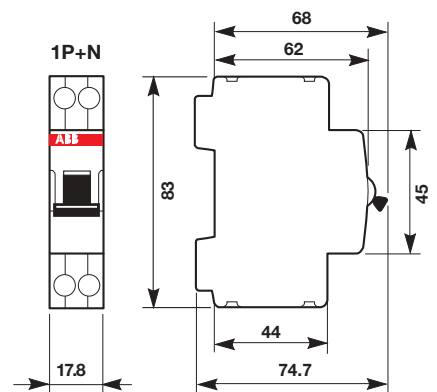
S 200 with bottom-fitting auxiliary contact



S 200 U-UP

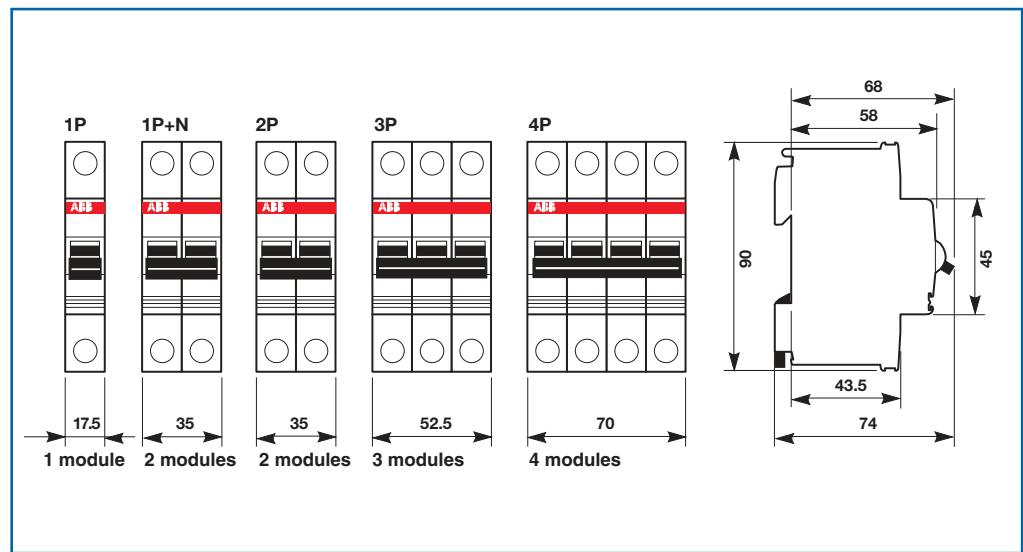


S 9..

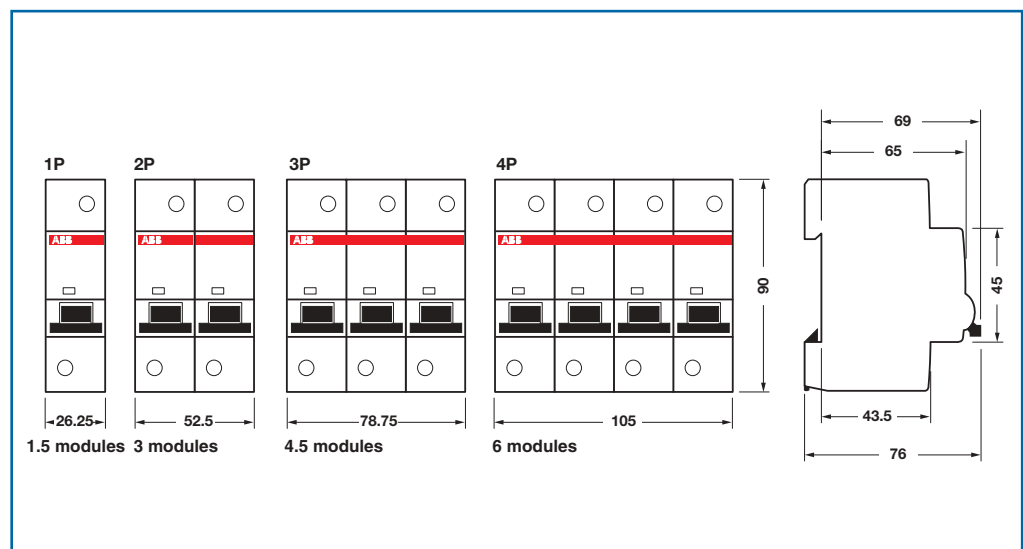




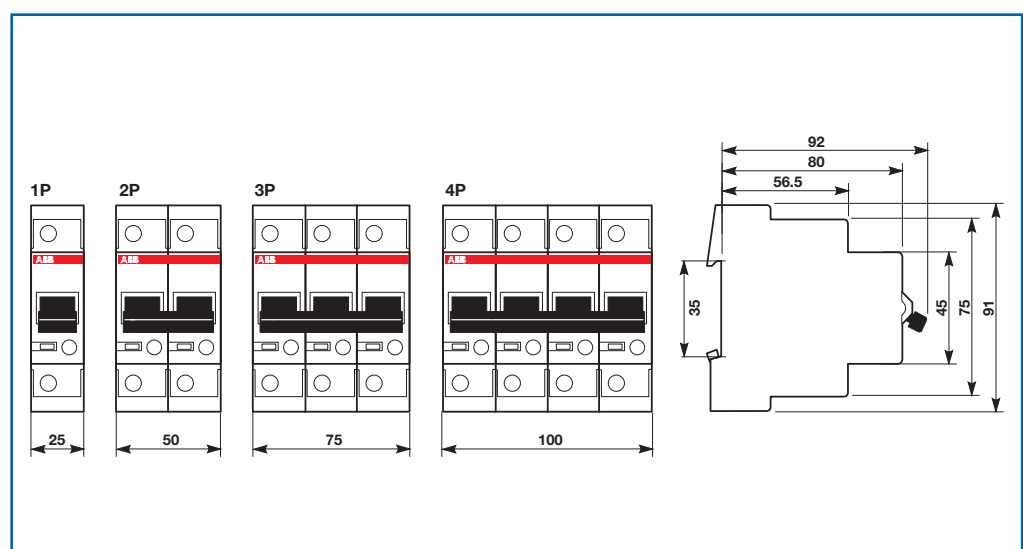
S 280



S 290



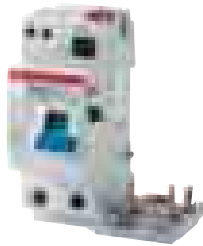
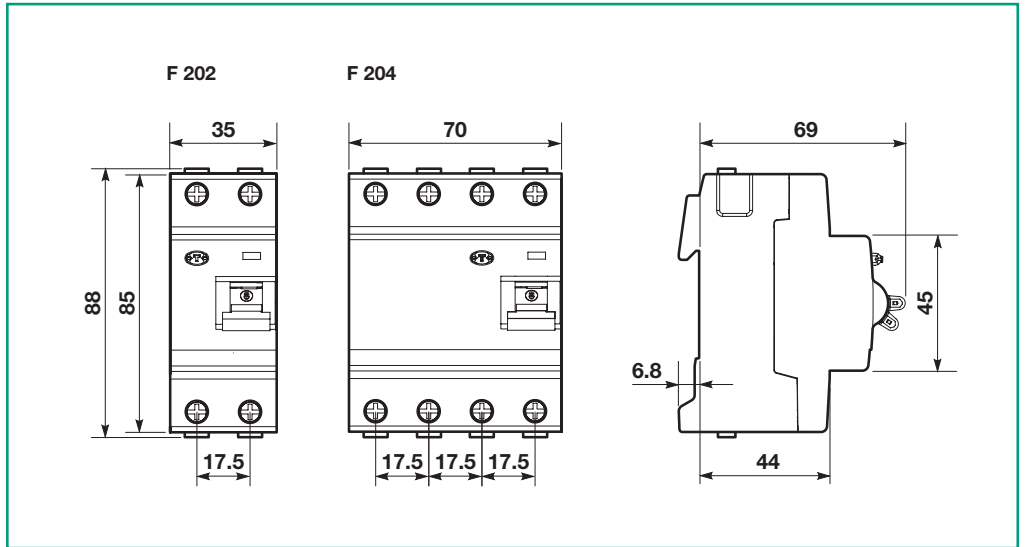
S 500





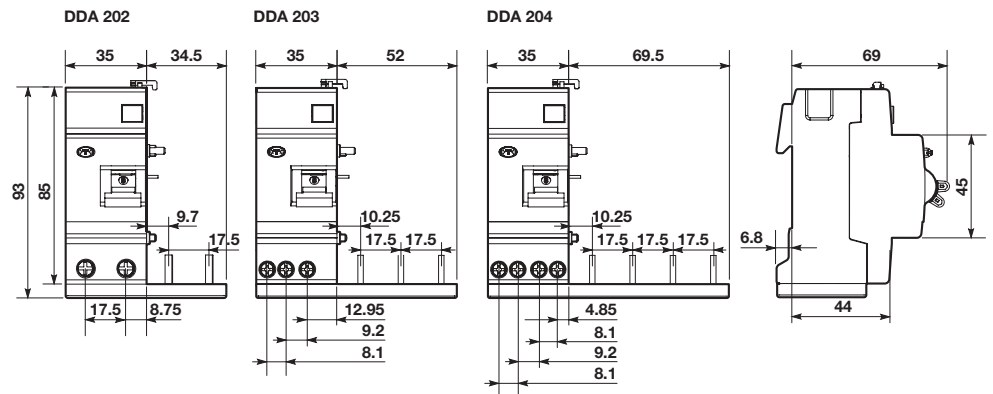


F 200

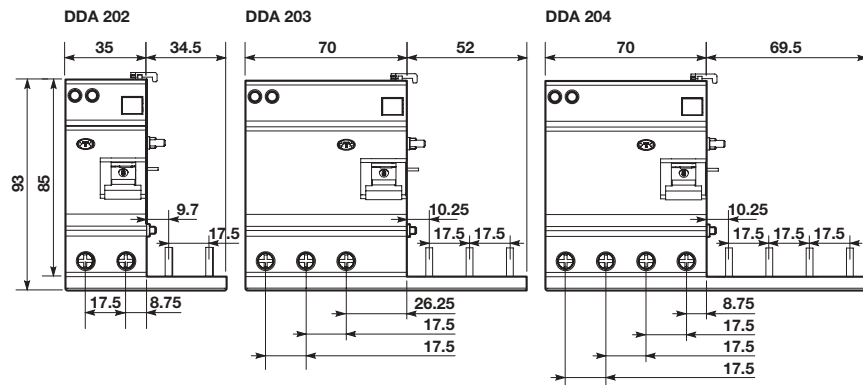


DDA 200

In=25-40 A

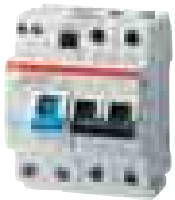
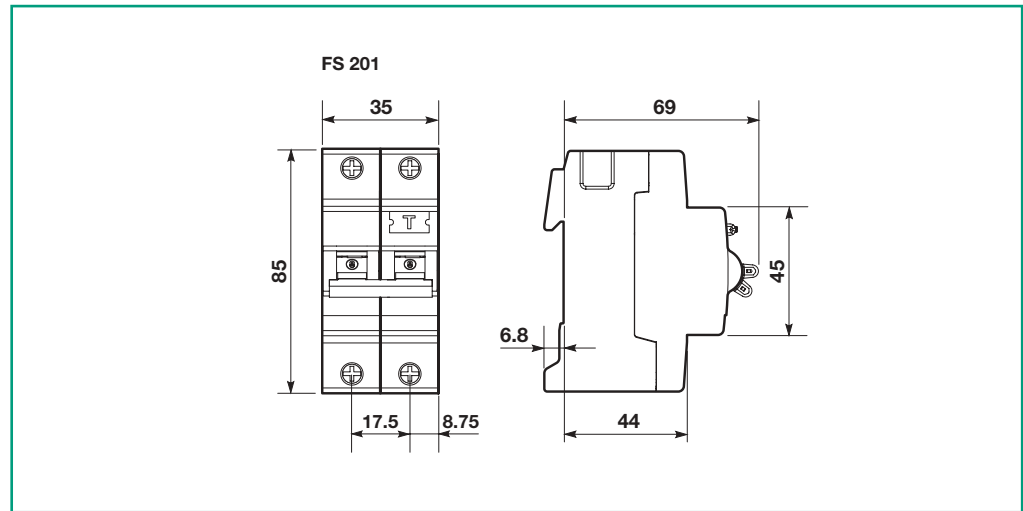


In=63 A

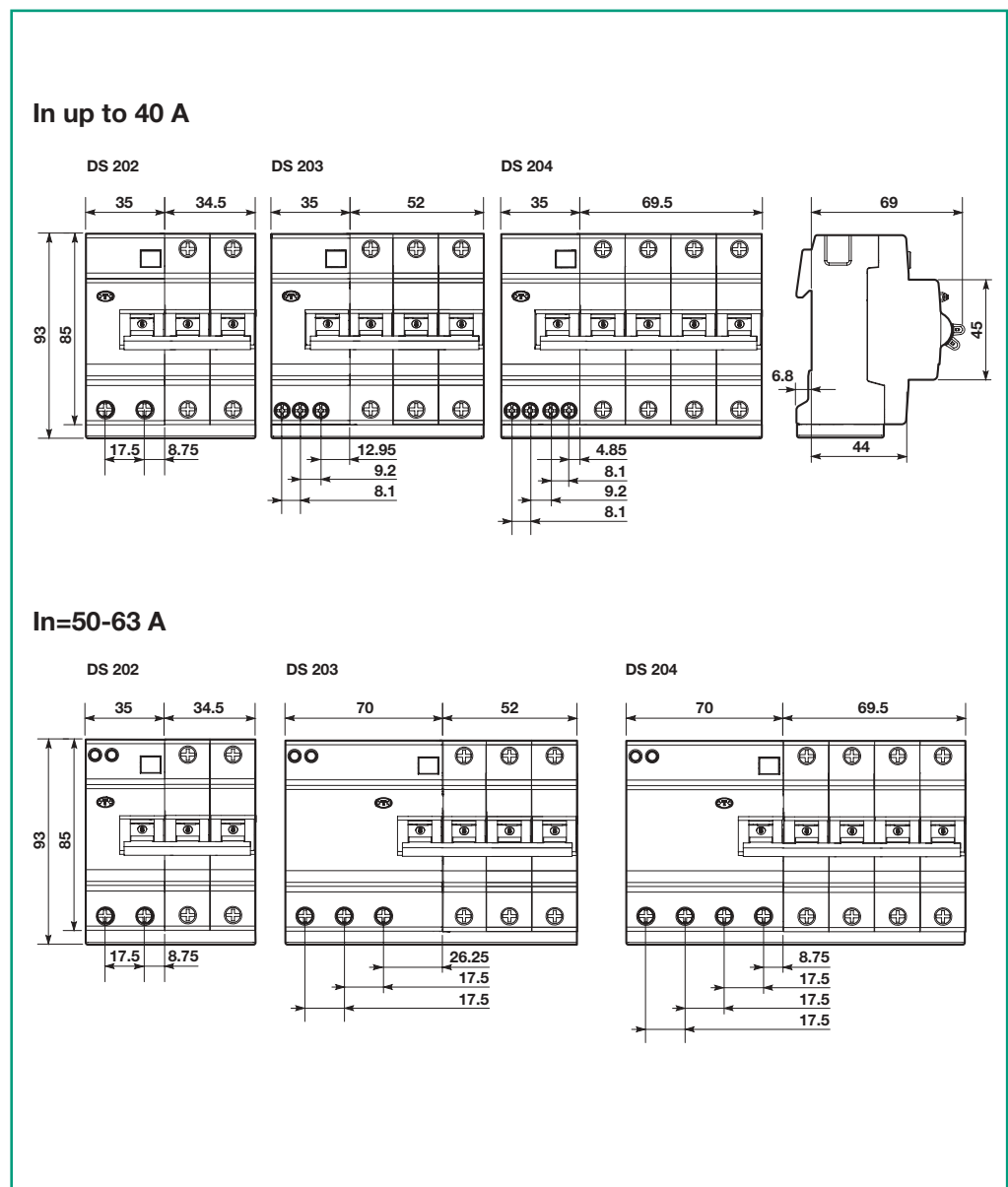




FS 201

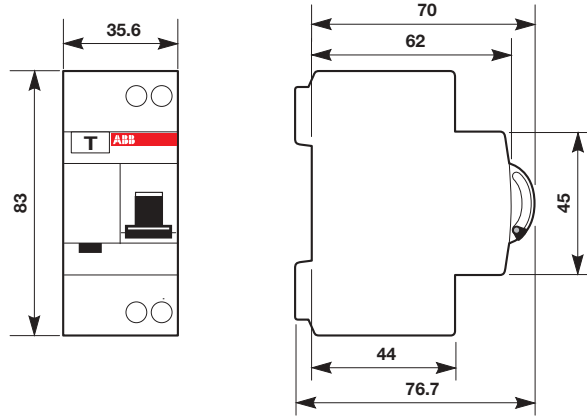


DS 200

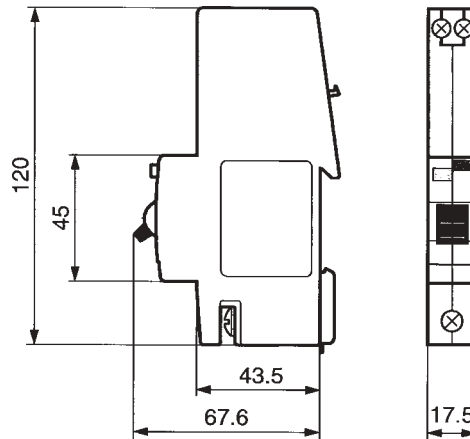




DS 9..



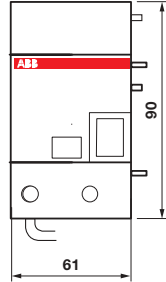
DS 271



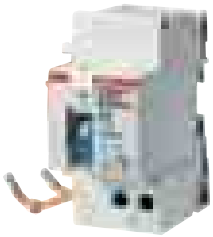
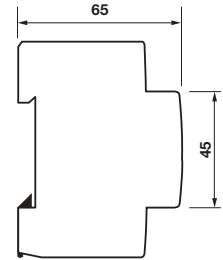
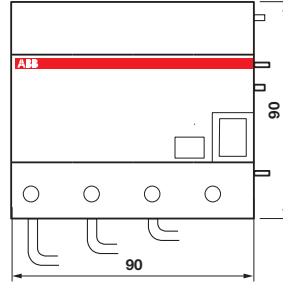


DDA for S 290 series

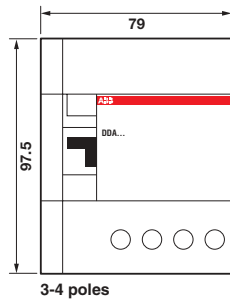
DDA 62  
2P 100 A



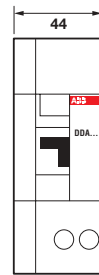
DDA 64  
4P 100 A



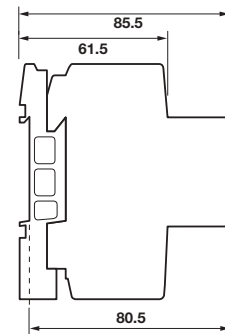
DDA for S 500 series



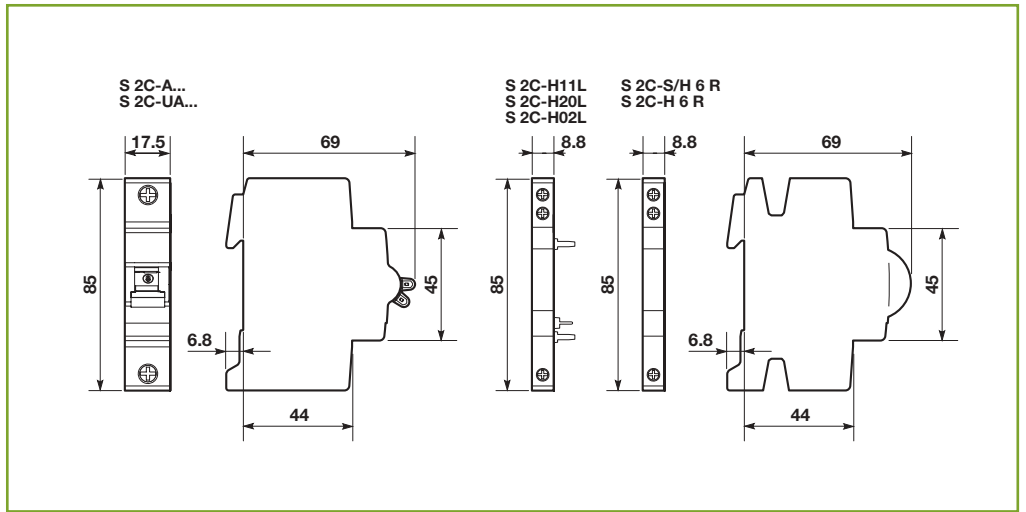
3-4 poles



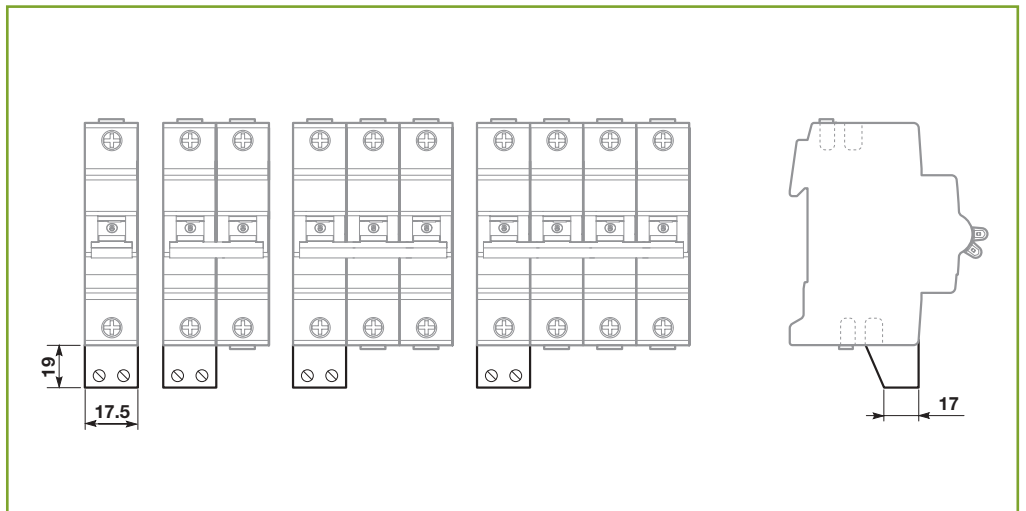
2 poles



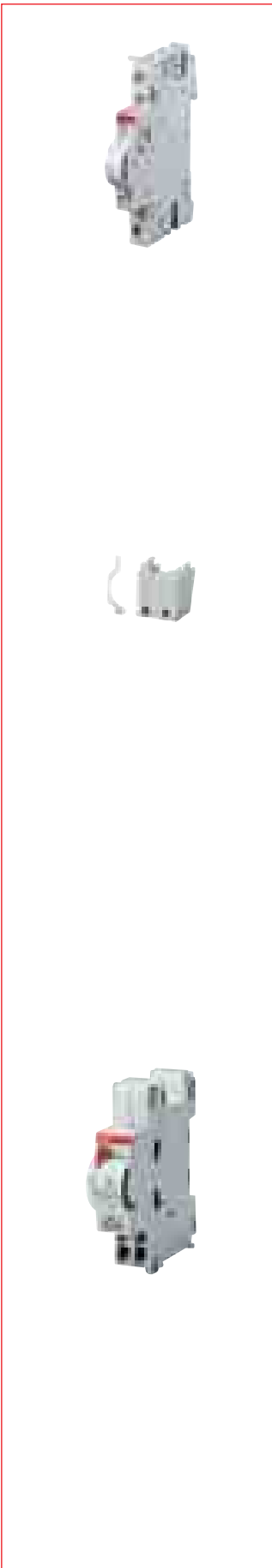
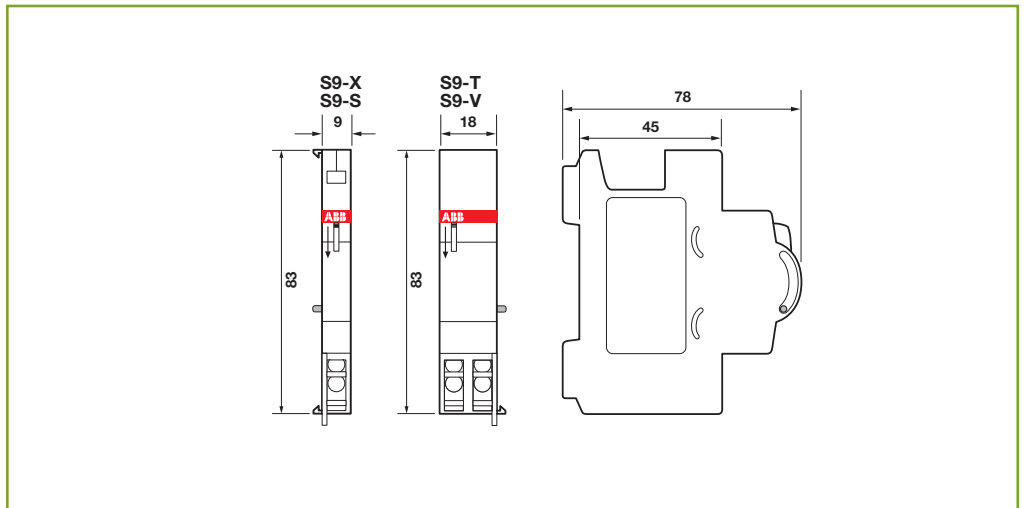
**Auxiliary elements for S 200 series**



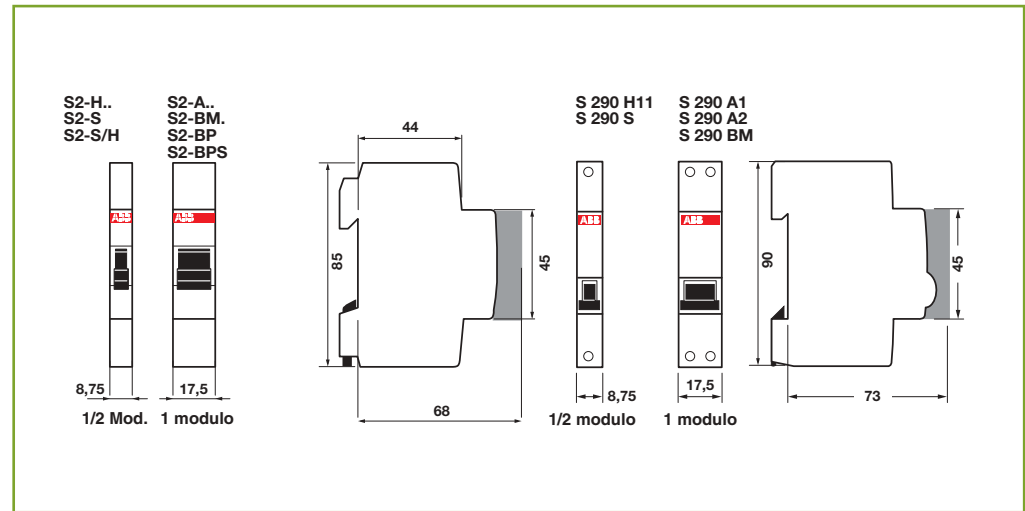
**Bottom-fitting auxiliary contact (with S 200 MCB)**



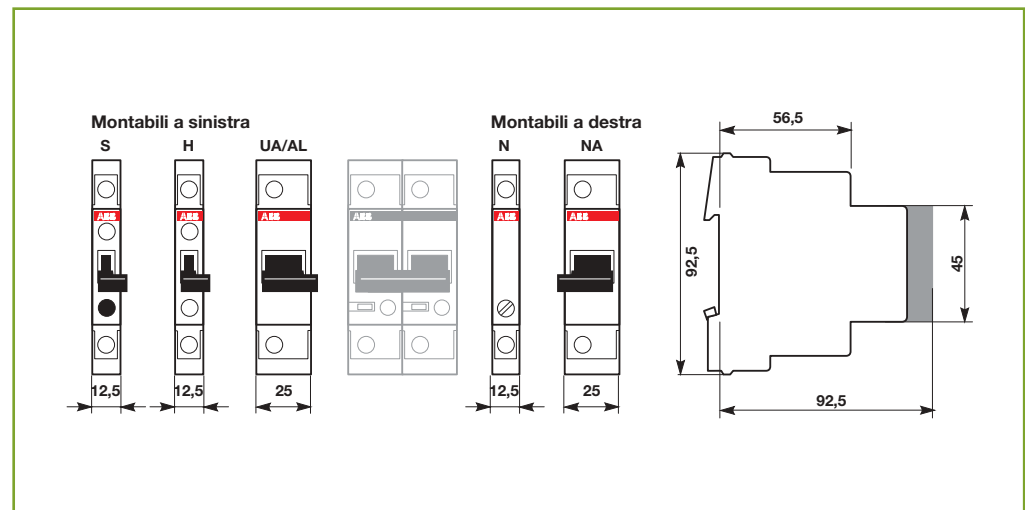
**Auxiliary elements for S 9.. and DS 9.. series**



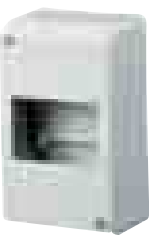
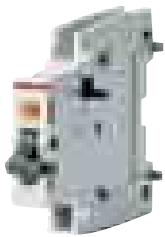
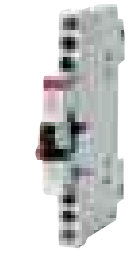
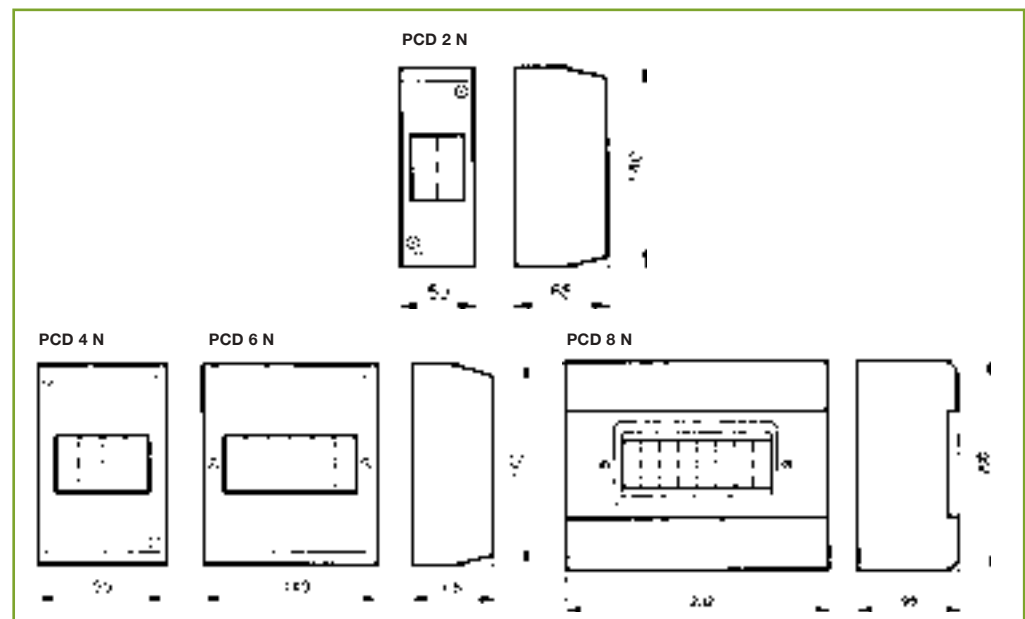
Auxiliary elements for S 280 and S 290 series



Auxiliary elements for S 500 series



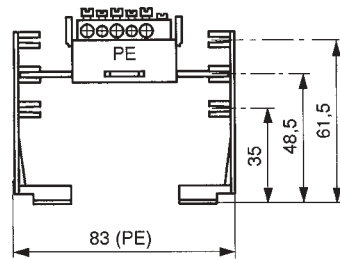
Terminal covers



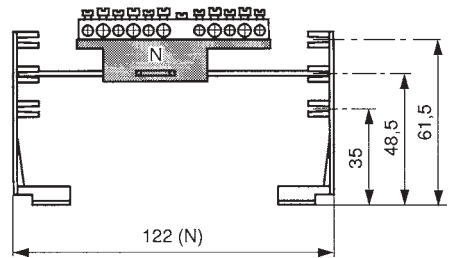
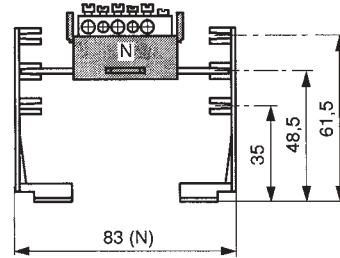
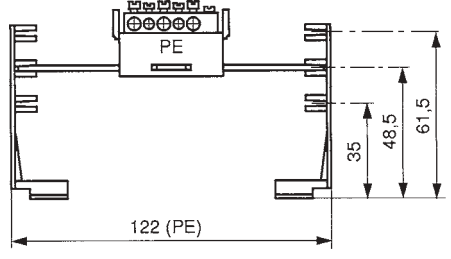
Enclosures of moulded-plastic

N + PE common terminals for QES

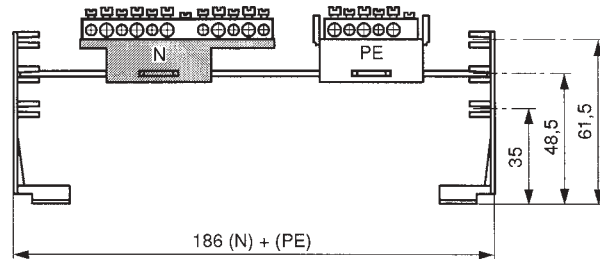
SMO 4



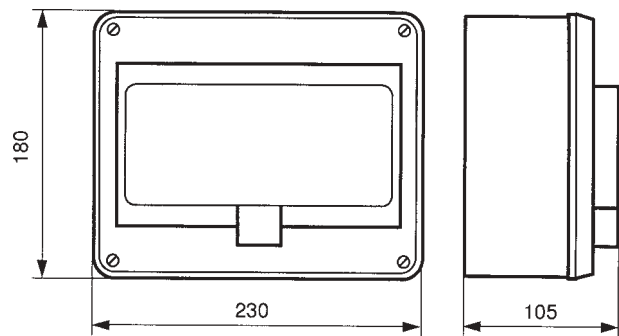
SMO 6



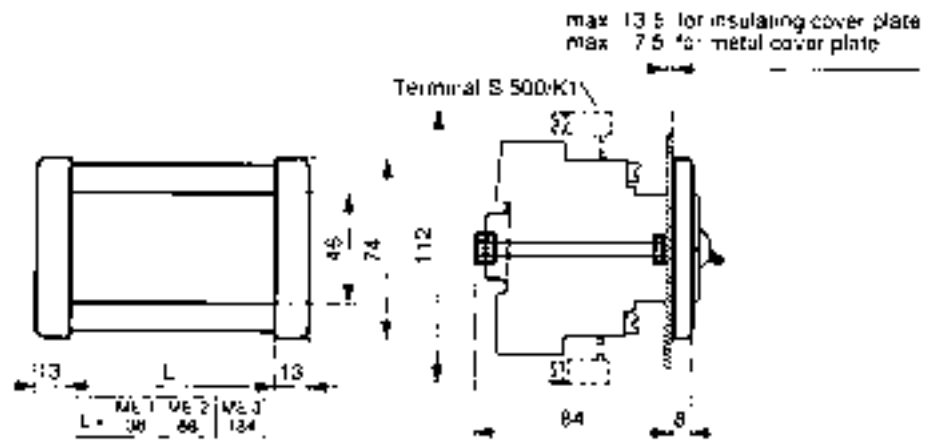
SMO 10



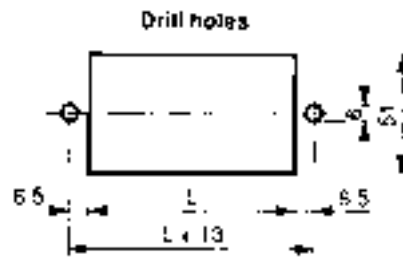
QES 10/3 N



Flush frame

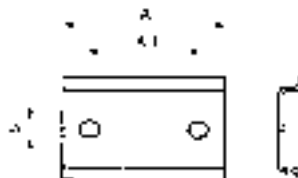


Type	Dim. L	Max. No. of modules (1 module=17.5 mm)
S 500 - ME 1	38 mm	for 2 module
S 500 - ME 2	88 mm	for 5 module
S 500 - ME 3	184 mm	for 10 module



Mounting rails

① In the case of DSW 1,  
the drill holes  
are vertical

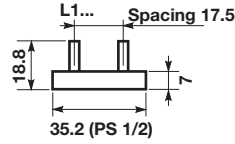


Name	A	A1
DSW	17.5	15
DSW 2	35	20
DSW 3	52.5	37.5
DSW 4	70	55
DSW 6	105	90

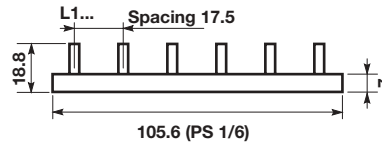


**Busbars**

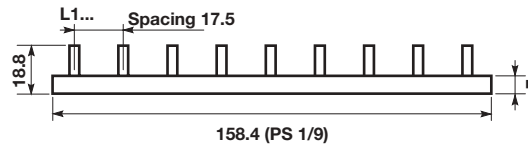
**PS 1/2**



**PS 1/6**



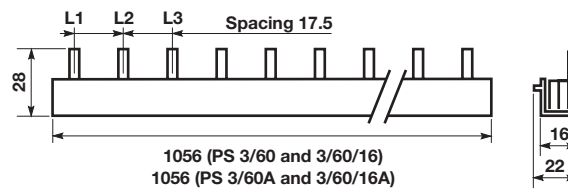
**PS 1/9**



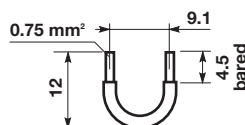
**PS 1/12**



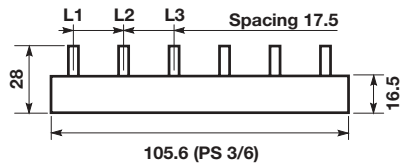
**PS 3/60**



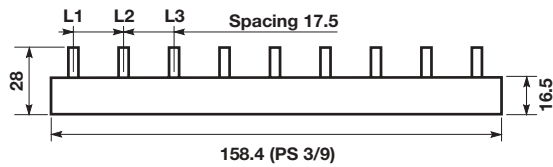
**Auxiliary contact bridge HKB**



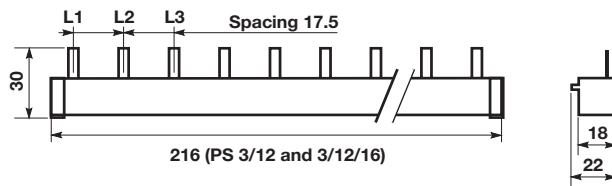
PS 3/6



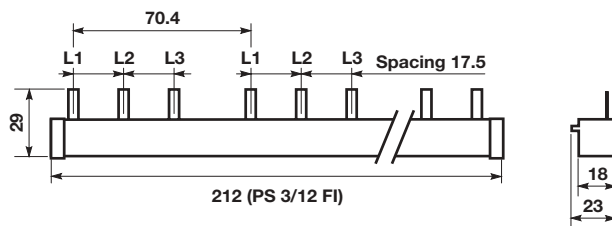
PS 3/9



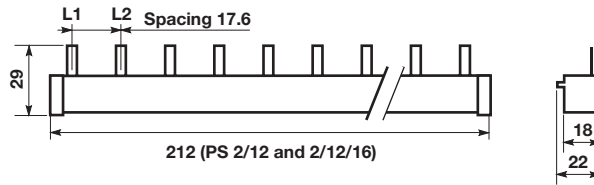
PS 3/12 (2CDL 230 001 R1012)



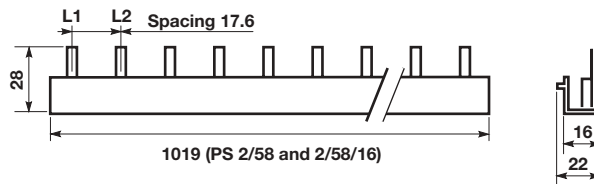
PS 3/12 FI (2CDL 230 002 R1012)



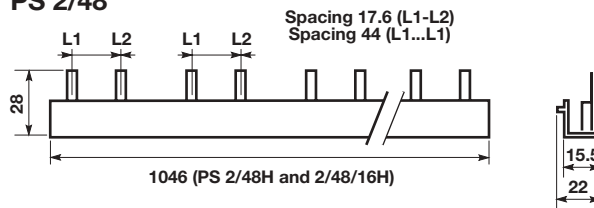
**PS 2/12**



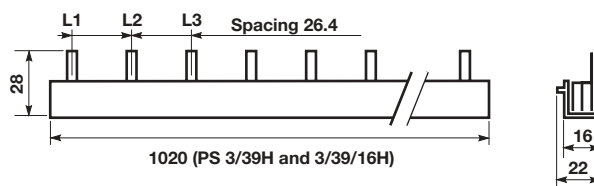
**PS 2/58**



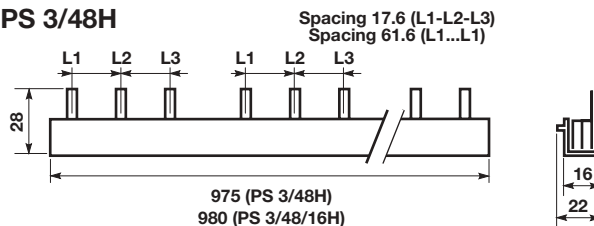
**PS 2/48**



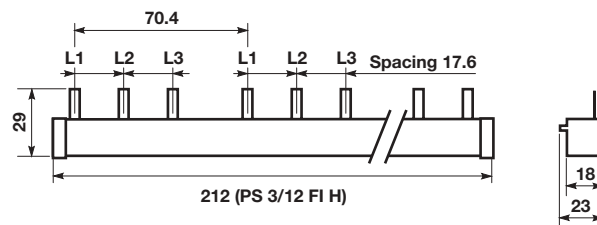
**PS 3/39H**



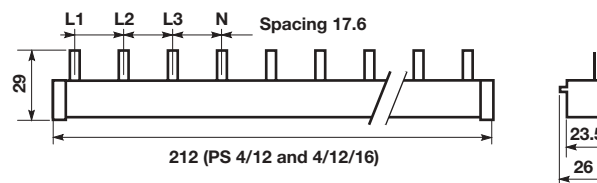
**PS 3/48H**



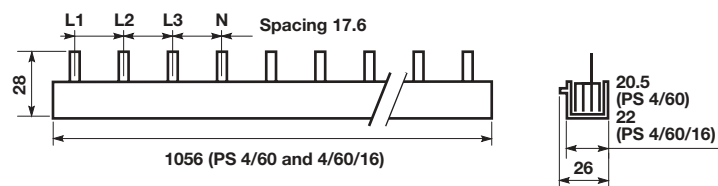
**PS 3/12 FI H**



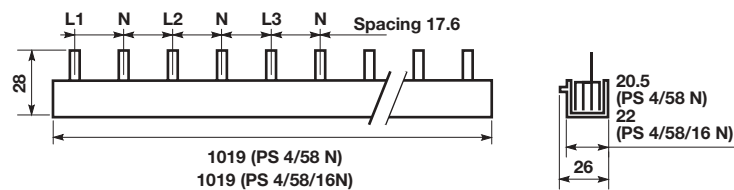
**PS 4/12**



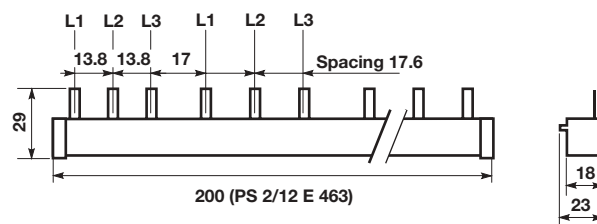
**PS 4/60**



**PS 4/58 N**



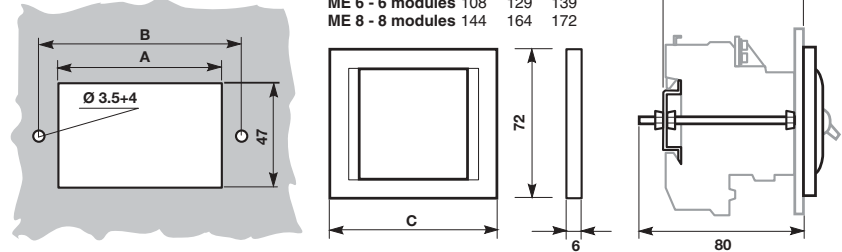
**PS 3/12 E 463**



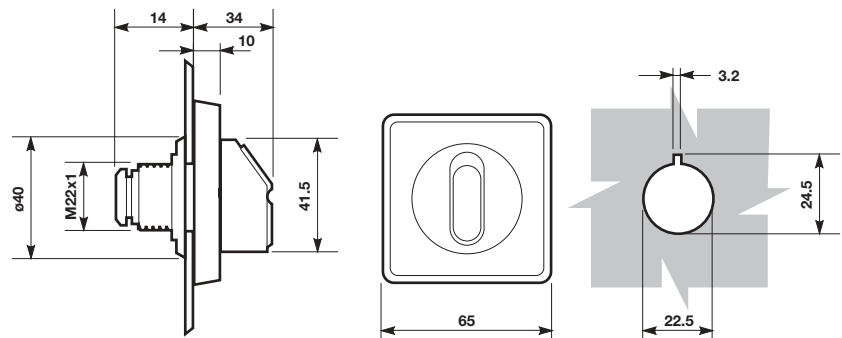
ME flange for rear board mounting

DEPHT D  
57 mm for S 240-S 250-  
S 270-S 280 circuit-breakers  
72 mm for S 210 circuit-breakers

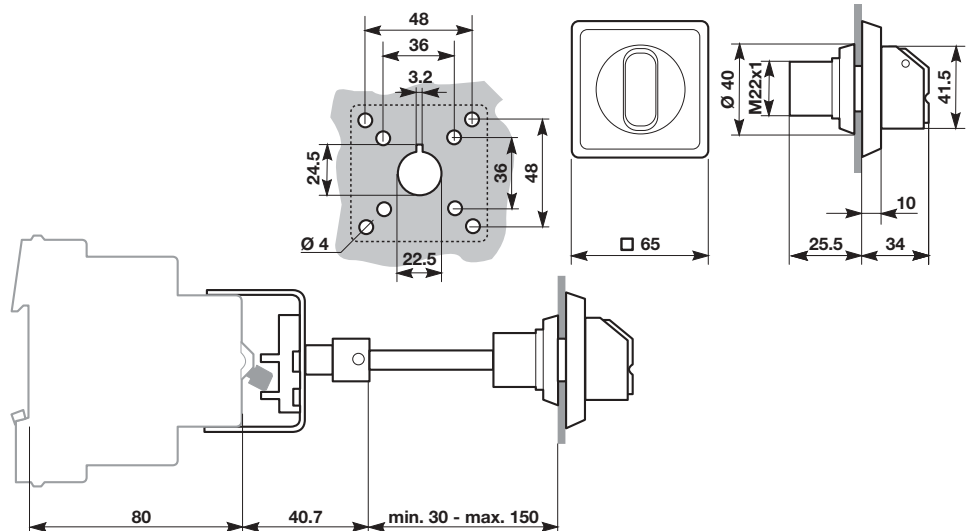
TYPE	A	B	C
ME 1 - 1 module	18	40	50
ME 2 - 2 modules	36	57.5	67
ME 3 - 3 modules	54	75.5	85
ME 4 - 4 modules	72	93	103
ME 6 - 6 modules	108	129	139
ME 8 - 8 modules	144	164	172

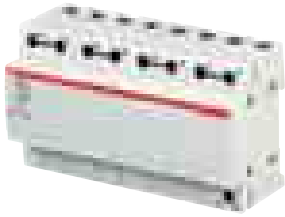


OH\_2A\_

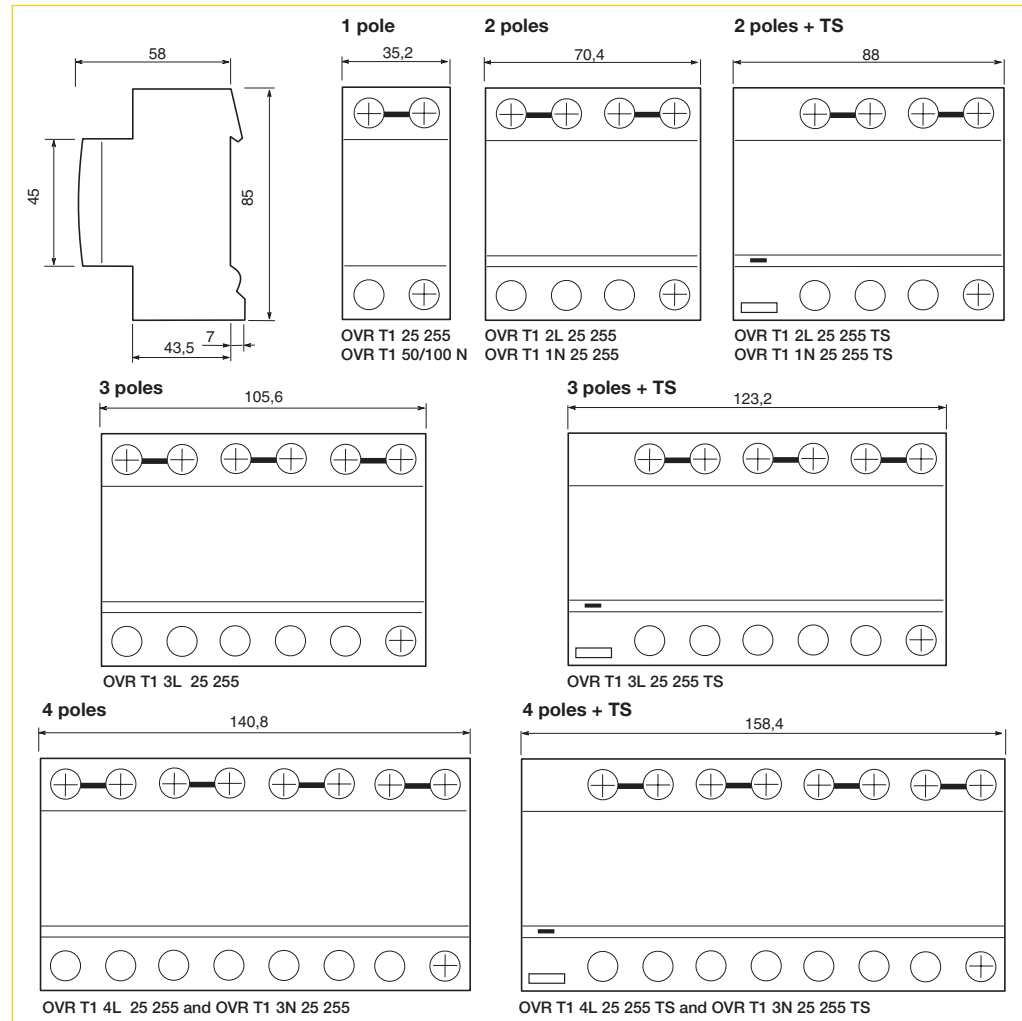


Rotary handle for S 500

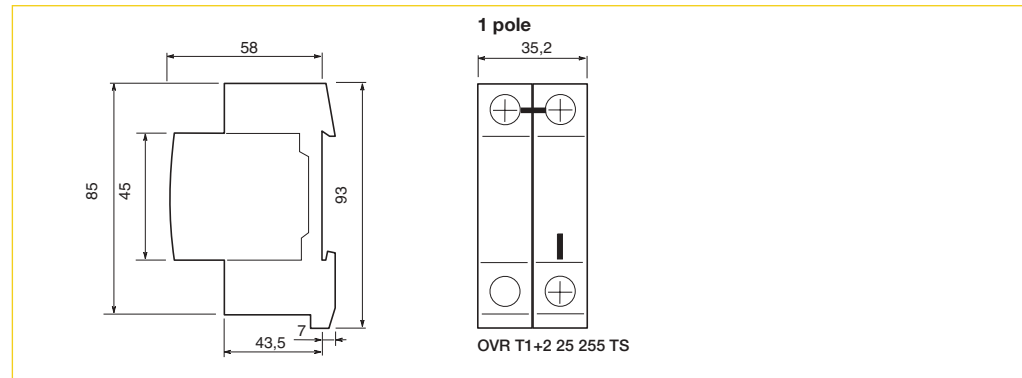




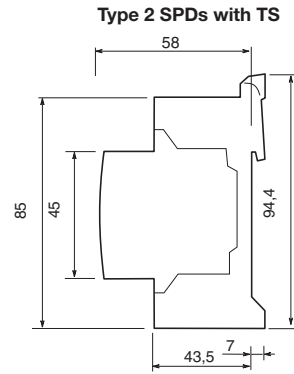
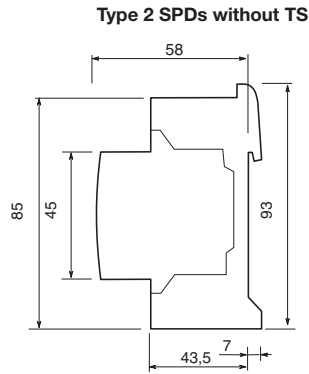
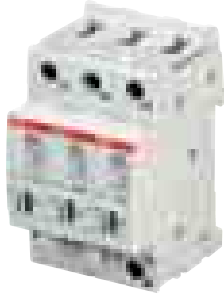
Type 1 Surge Protection Devices



Type 1+2 Surge Protection Devices



**Type 2 Surge Protection Devices**

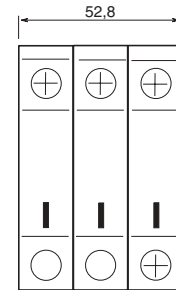


**1 pole**



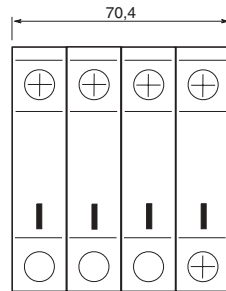
- OVR T2 15 275 P
- OVR T2 15 440 P
- OVR T2 40 275 P
- OVR T2 40 275 s P TS
- OVR T2 40 440 P
- OVR T2 40 440 s P TS
- OVR T2 70 275 s P TS
- OVR T2 70 440 s P TS

**3 phases**



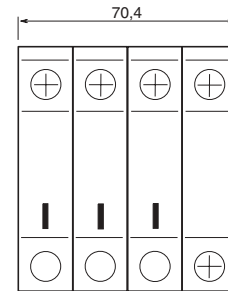
- OVR T2 3L 15 275 P
- OVR T2 3L 40 275 P
- OVR T2 3L 40 275 s P TS
- OVR T2 3L 70 275 s P TS

**4 phases**



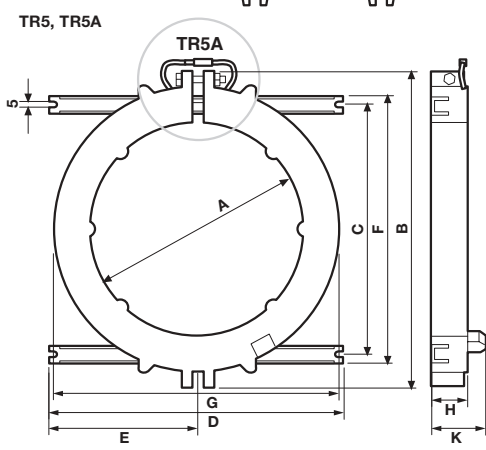
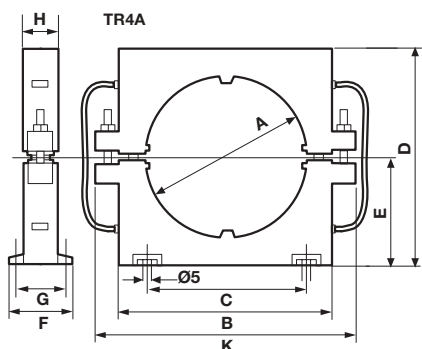
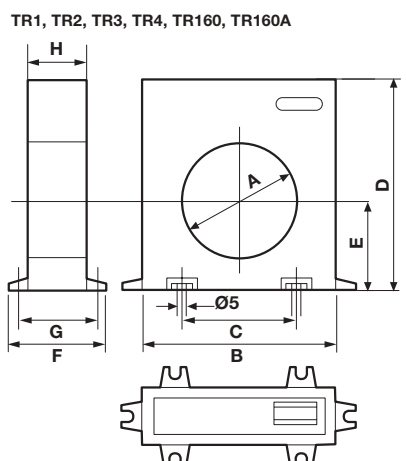
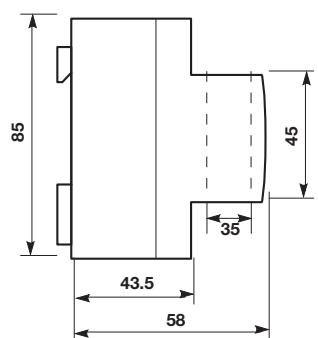
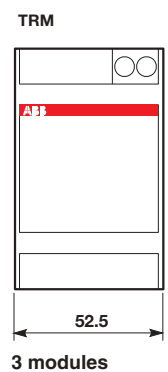
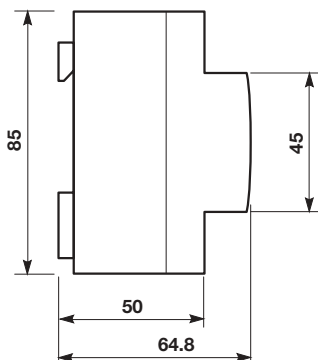
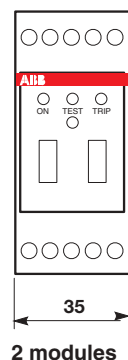
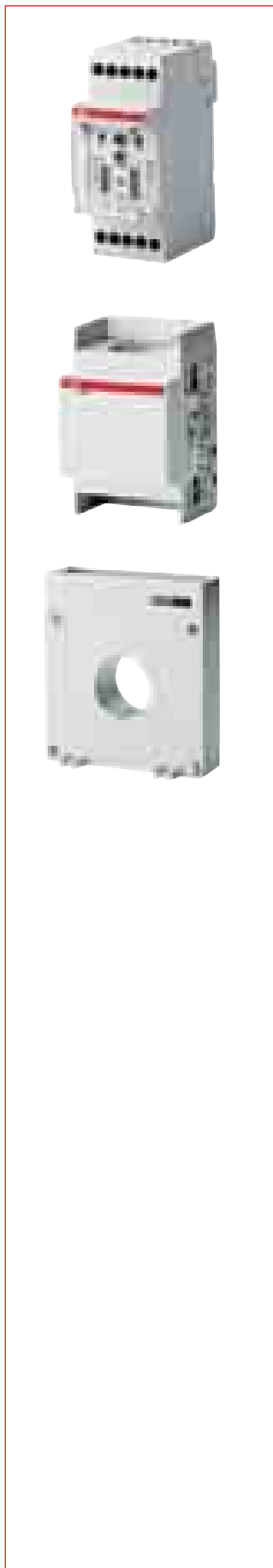
- OVR T2 4L 15 275 P
- OVR T2 4L 40 275 P
- OVR T2 4L 40 275 s P TS
- OVR T2 4L 70 275 s P TS

**3 phases + Neutral**



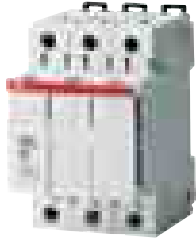
- OVR T2 3N 15 275 P
- OVR T2 3N 40 275 P
- OVR T2 3N 40 275 s P TS
- OVR T2 3N 70 275 s P TS

RD2 residual current monitors and toroidal transformers

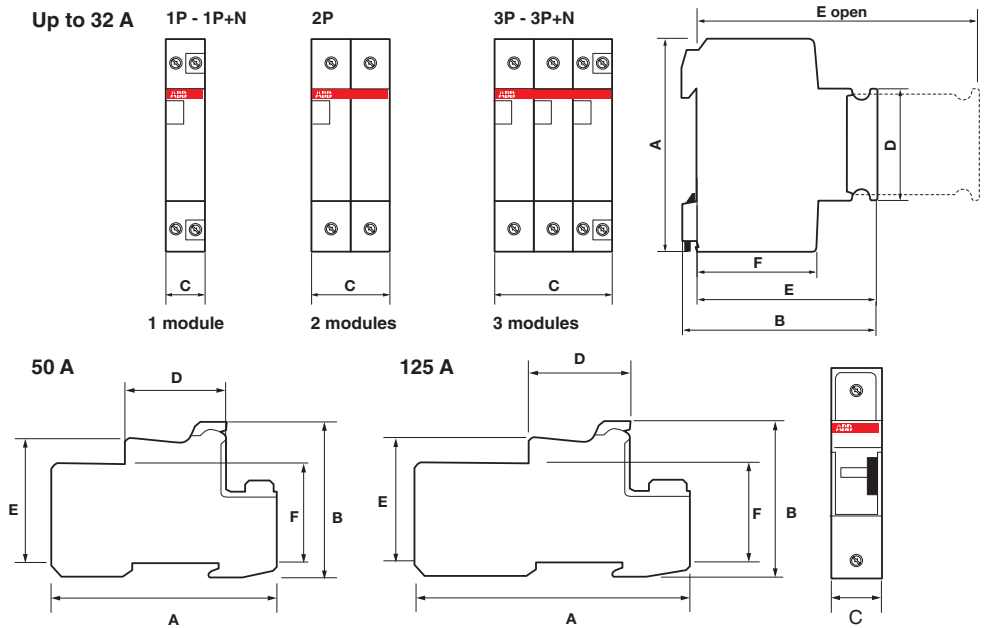


Type	Dimensions (mm)									
	A	B	C	D	E	F	G	H	K	
TR1	35	100	60	110	47	50	43	30	-	
TR2	60	100	60	110	47	50	43	30	-	
TR3	80	150	110	160	70	50	43	30	-	
TR4	110	150	110	160	70	50	43	30	-	
TR4A	110	145	110	150	75	45	38	25	180	
TR160	160	220	156	236	110	64	50	34	-	
TR160A	160	220	156	236	110	64	50	34	-	
TR5	210	310	240	290	145	260	280	36	55	
TR5A	210	310	240	290	145	260	280	36	55	

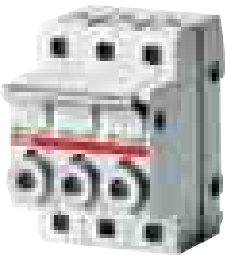




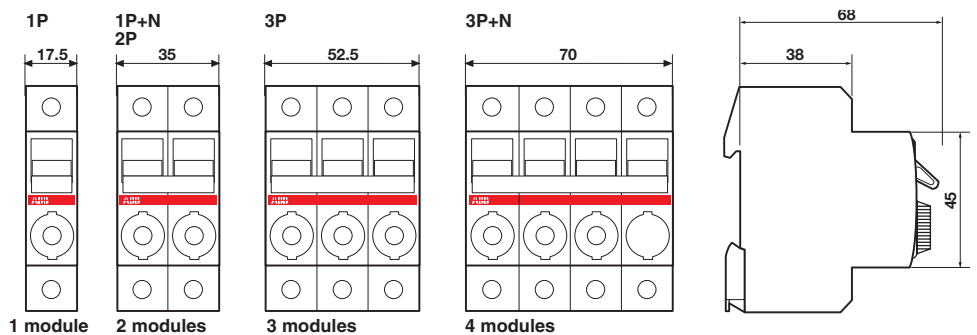
E 930 fuse holders



Type	No. poles	Dimensions of fuse	A	B/B open	C	D	E/E open	F
E 931/20-32	1	8.5x31.5 (32 A: 10.3x38)	83	72/117	17.5	45	66/111	44
E 931N/20-32	1+N	8.5x31.5 (32 A: 10.3x38)	83	72/117	17.5	45	66/111	44
E 932/20-32	2	8.5x31.5 (32 A: 10.3x38)	83	72/117	35	45	66/111	44
E 933/20-32	3	8.5x31.5 (32 A: 10.3x38)	83	72/117	52.5	45	66/111	44
E 933N/20-32	3+N	8.5x31.5 (32 A: 10.3x38)	83	72/117	52.5	45	66/111	44
E 931/50	1	14x51	107	76.5/101.5	26.5	45	60	50
E 931N/50	1+N	14x51	107	76.5/101.5	53	45	60	50
E 932/50	2	14x51	107	76.5/101.5	53	45	60	50
E 933/50	3	14x51	107	76.5/101.5	79.5	45	60	50
E 933N/50	3+N	14x51	107	76.5/101.5	106	45	60	50
E 931/125	1	22x58	126.5	76.5/103.5	35	45	60	50
E 931N/125	1+N	22x58	126.5	76.5/103.5	70	45	60	50
E 932/125	2	22x58	126.5	76.5/103.5	70	45	60	50
E 933/125	3	22x58	126.5	76.5/103.5	105	45	60	50
E 933N/125	3+N	22x58	126.5	76.5/103.5	140	45	60	50

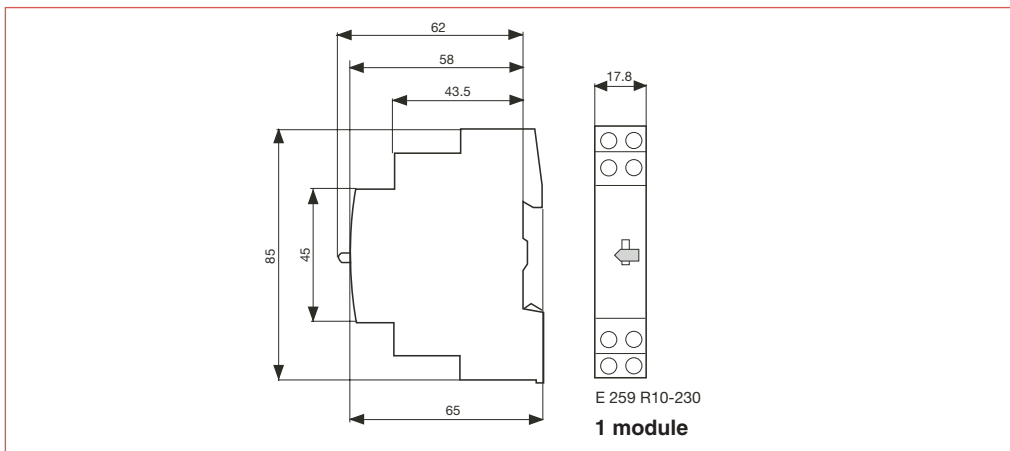


M2160 - M2060 fuse switches

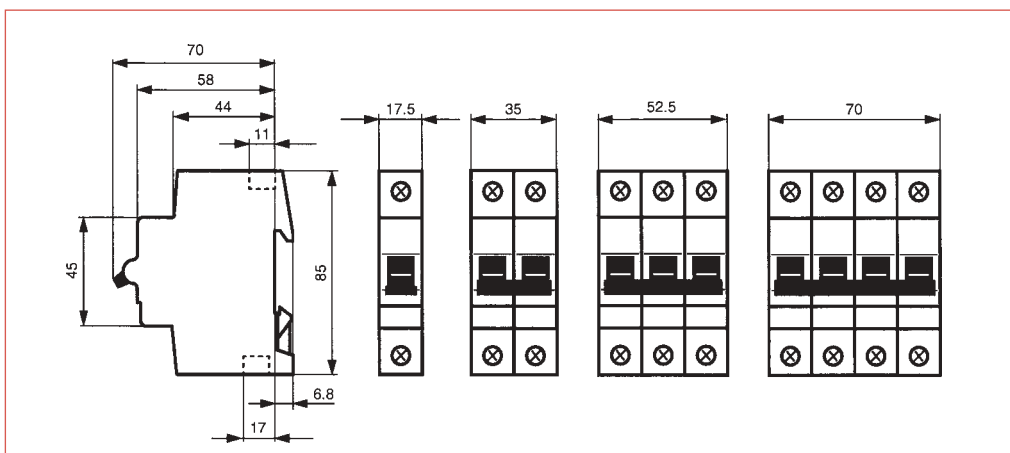




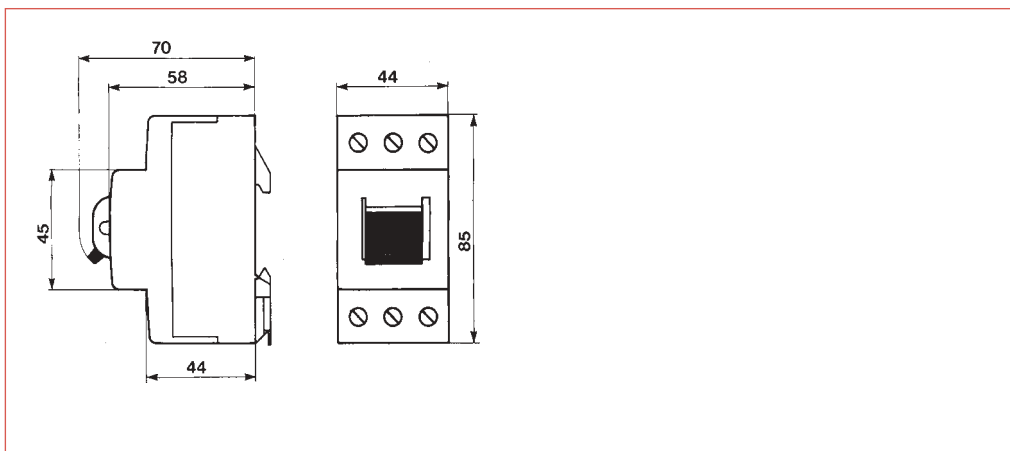
E 259 installation relays



E 200 switches

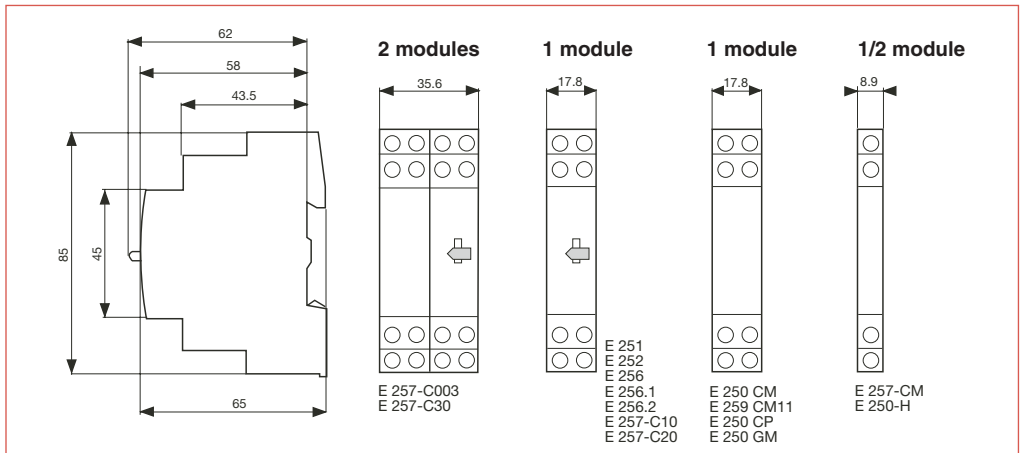


E 463/3-KB, E 480/-KB, E 463/3-SL switches

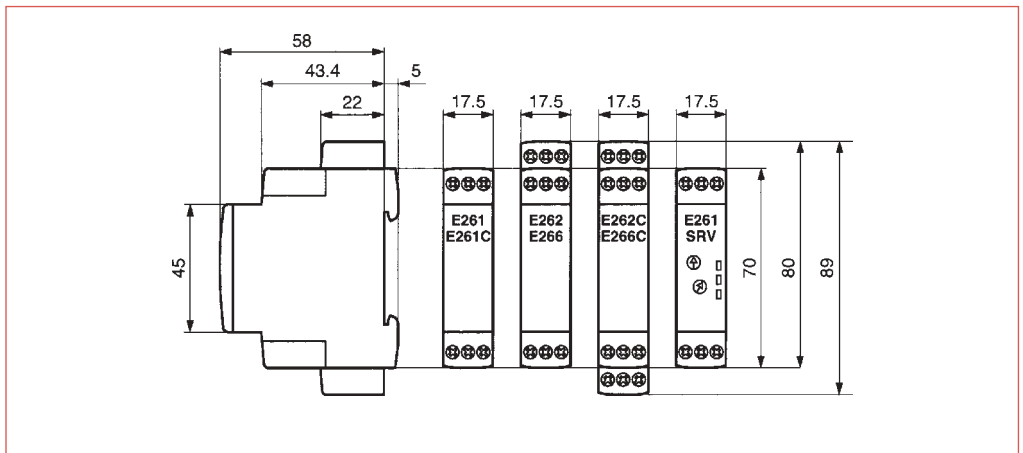




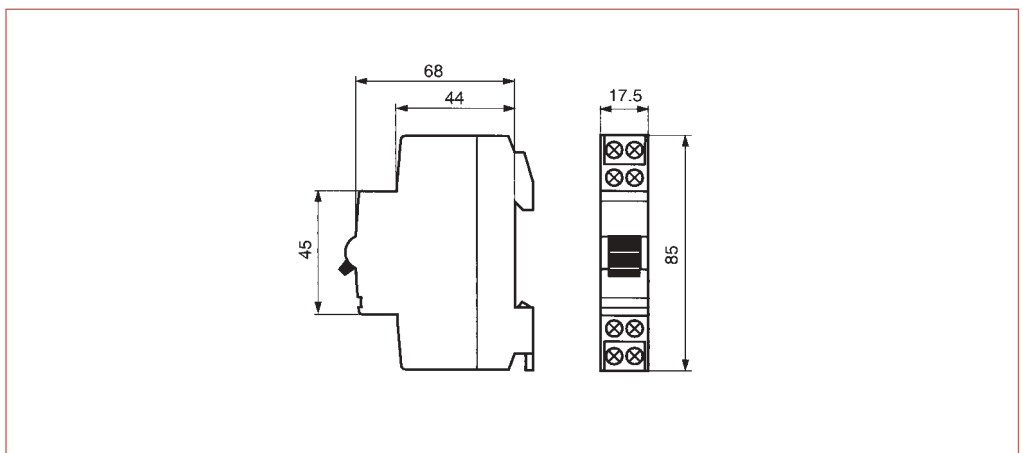
E 250 latching relays



E 260 latching relays

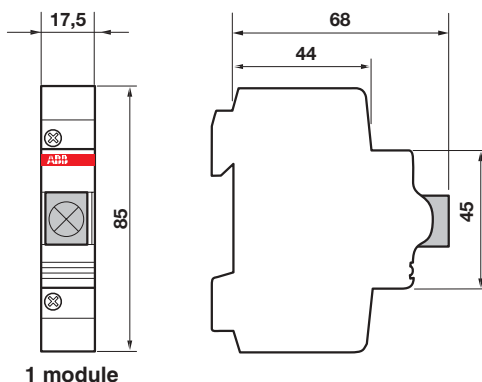


E 220 switches

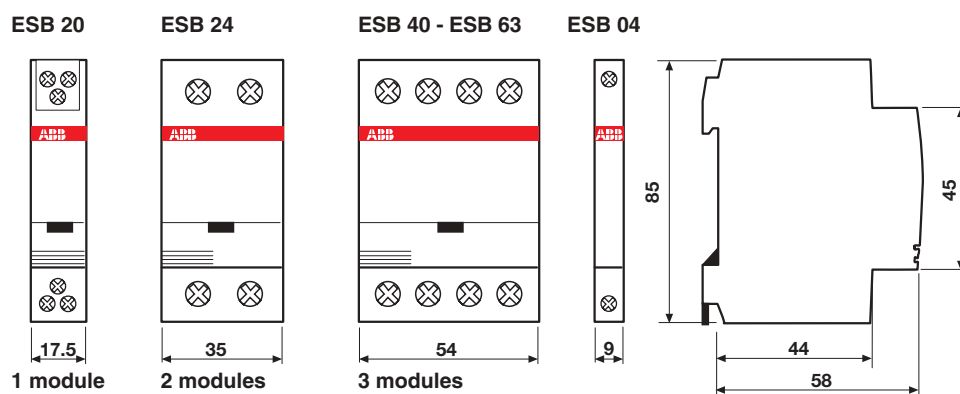




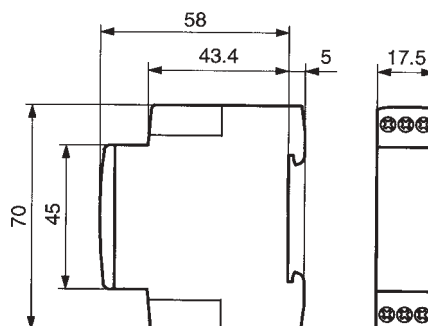
E 220 pushbuttons and indicator lamps



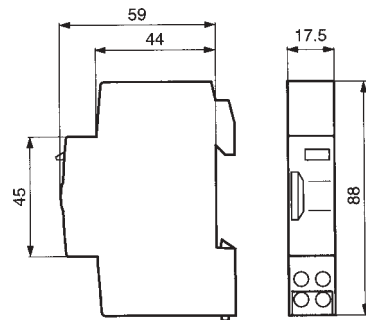
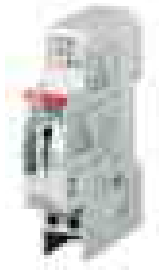
ESB/EN



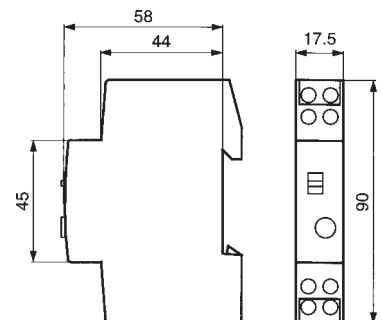
E 234 time delay relays



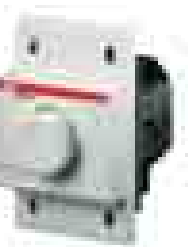
E 232 staircase lighting time delay relays



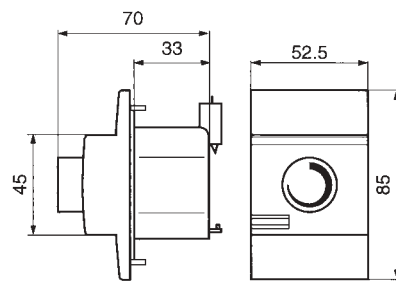
E 232-230



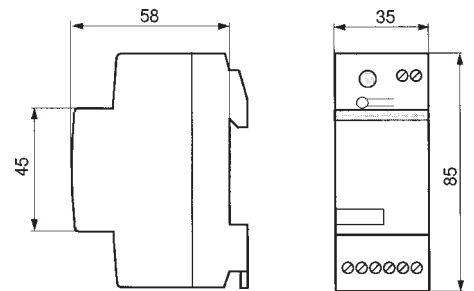
E 232 E  
E 232 HLM



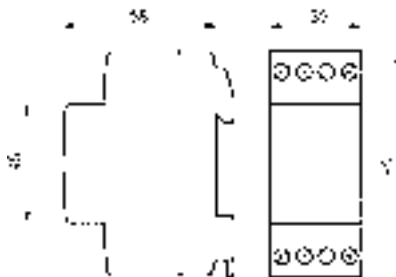
STD dimmers



STD 50  
STD-EP

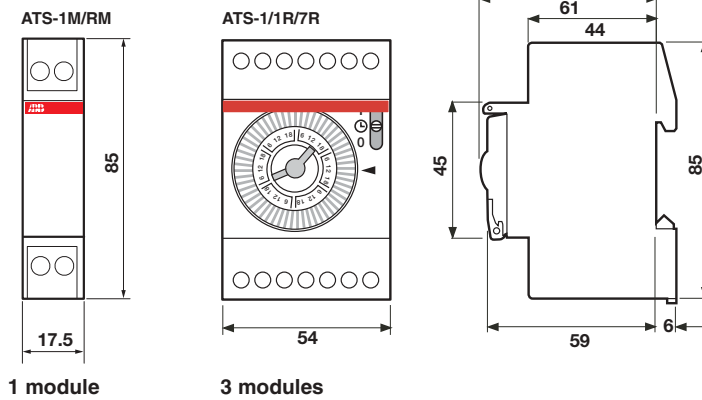


STD-500 MA

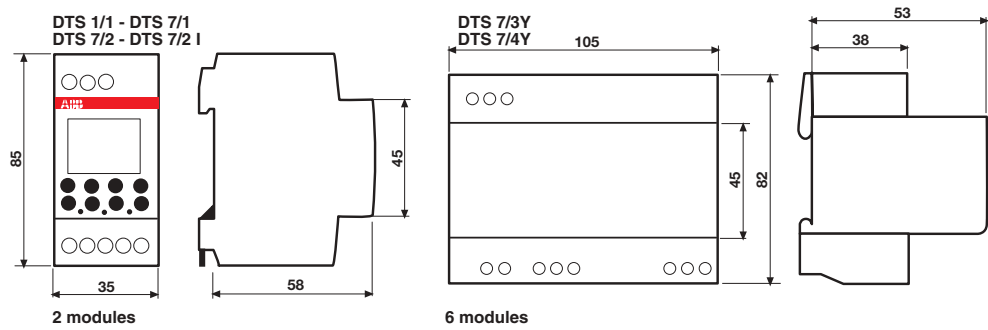


STD-MTS

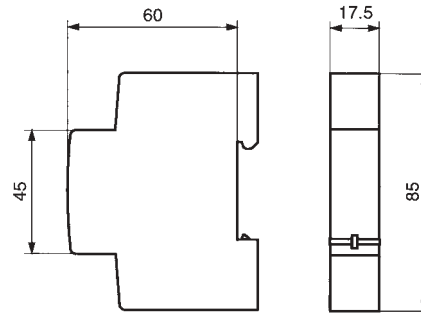
ATS electro-mechanical time switches



DTS digital time switches

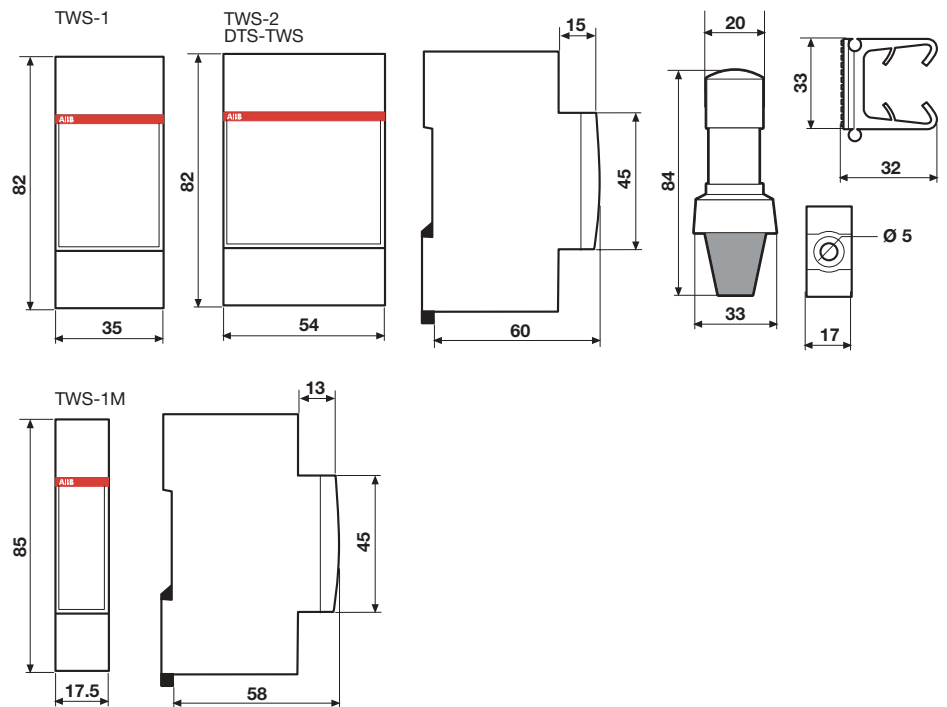


E 450 priority switches



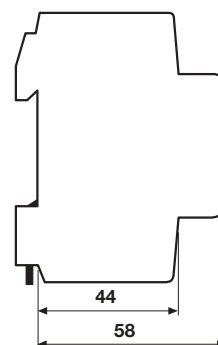
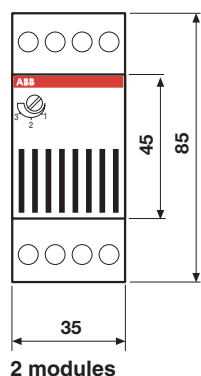
E 451 ...  
E 452 ...

TWS twilight switches

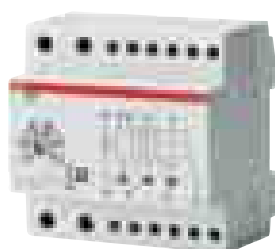
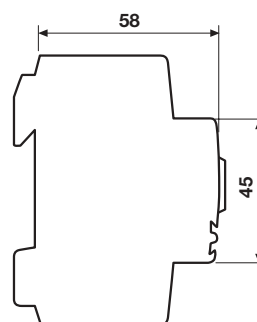
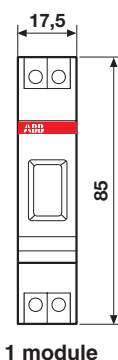




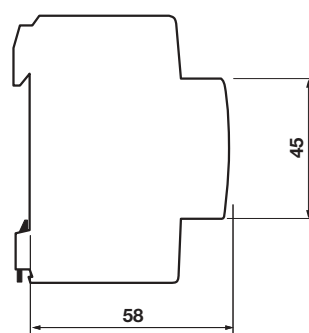
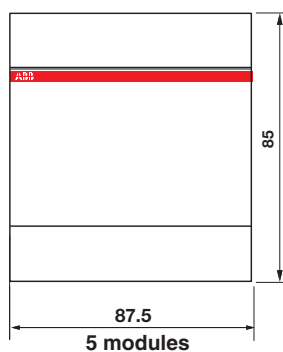
RAL overload alarms



E 228 WM alarm indicators

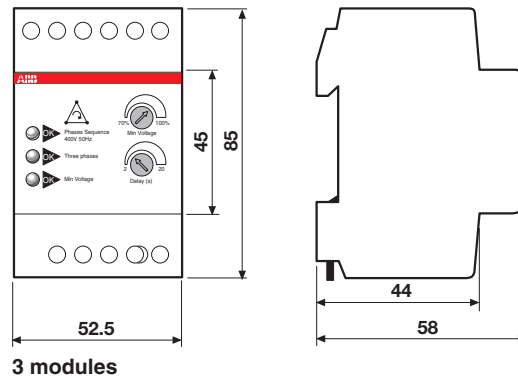
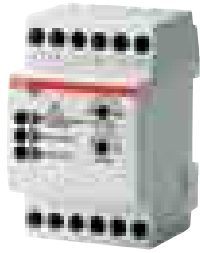


LSS1/2 load shedding switches

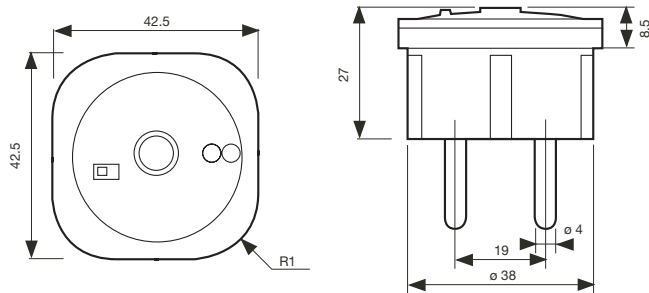




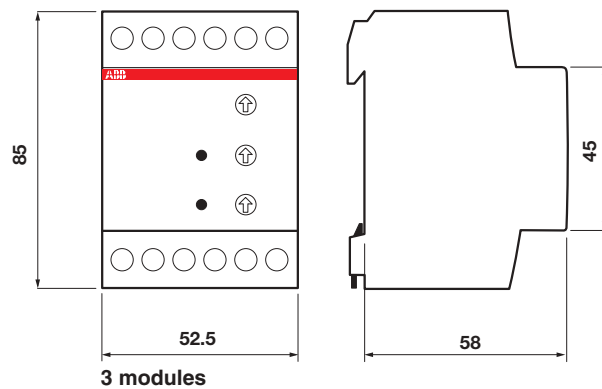
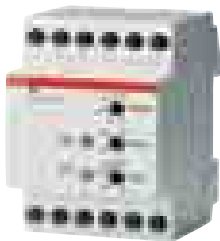
SQZ3 phase and sequence relays



LEE 230 power failure signalling lamp

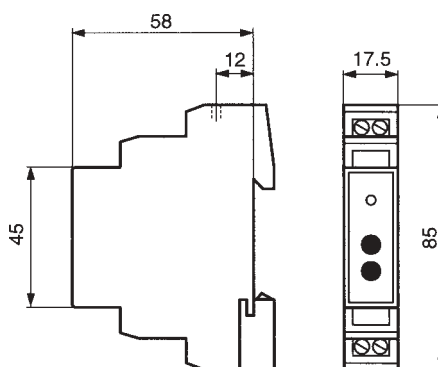


Max./min. current/voltage ammetric and voltmetric relays

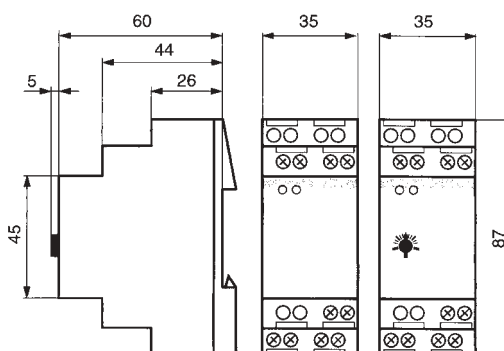




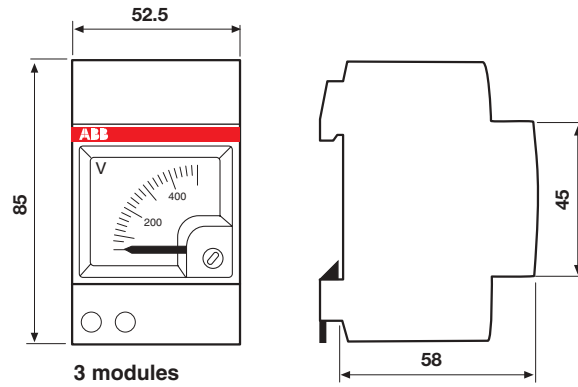
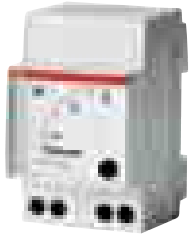
E 235 mains disconnection relays



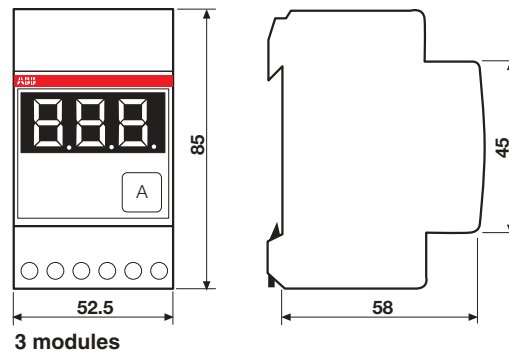
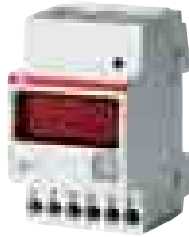
E 236 undervoltage monitoring relays

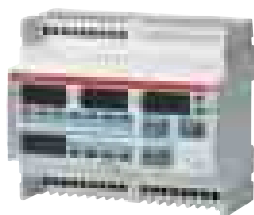


Analogue measurement instruments

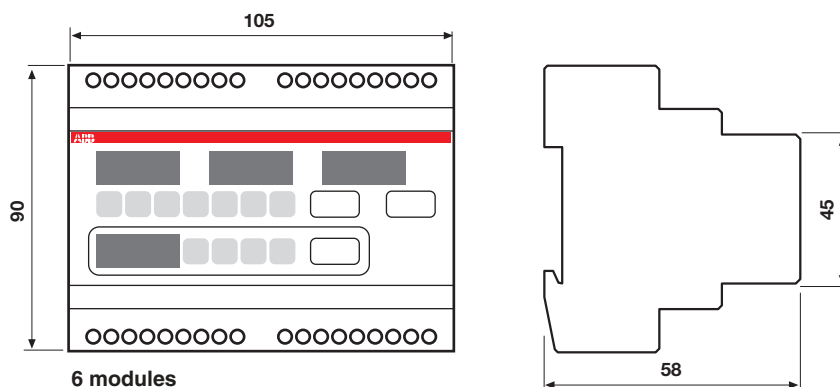


Digital measurement instruments (VLM-D, AMT-D)

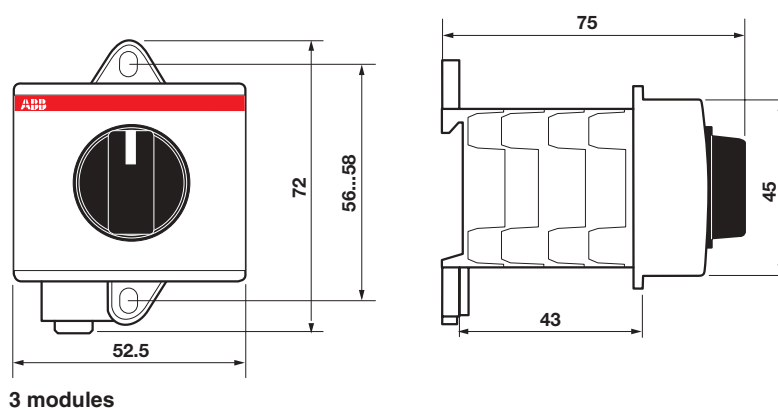




MTM multimeters

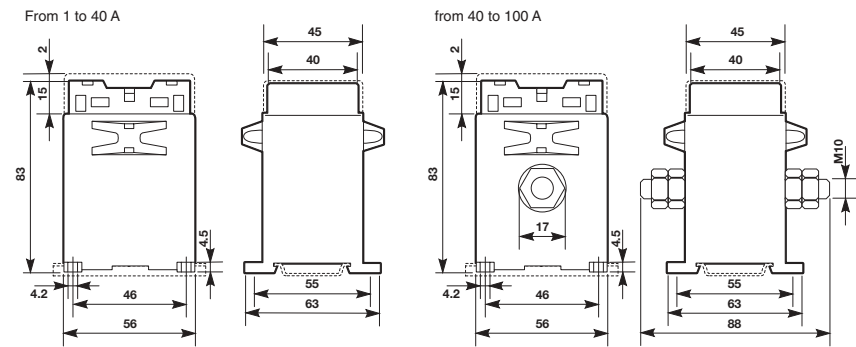


MCV - MCA voltmetric and ammetric switches

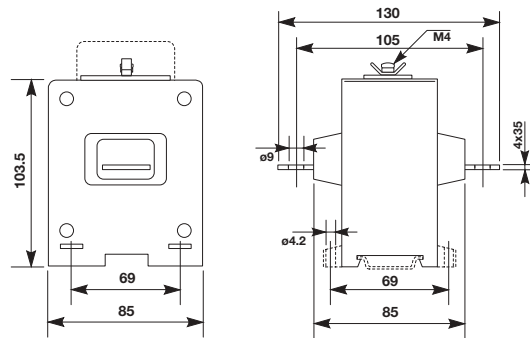


Standard type current transformers

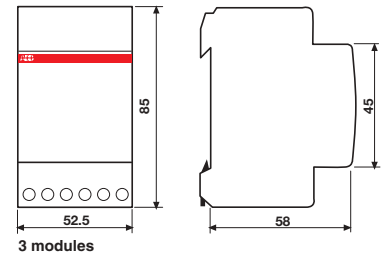
CTA



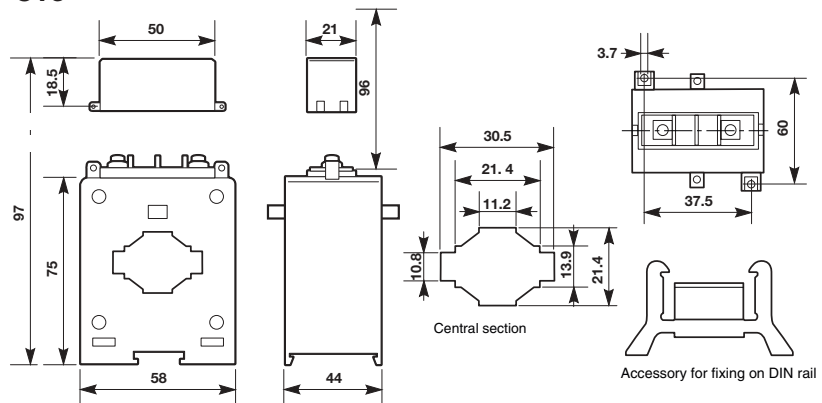
CTA1 and CTA2

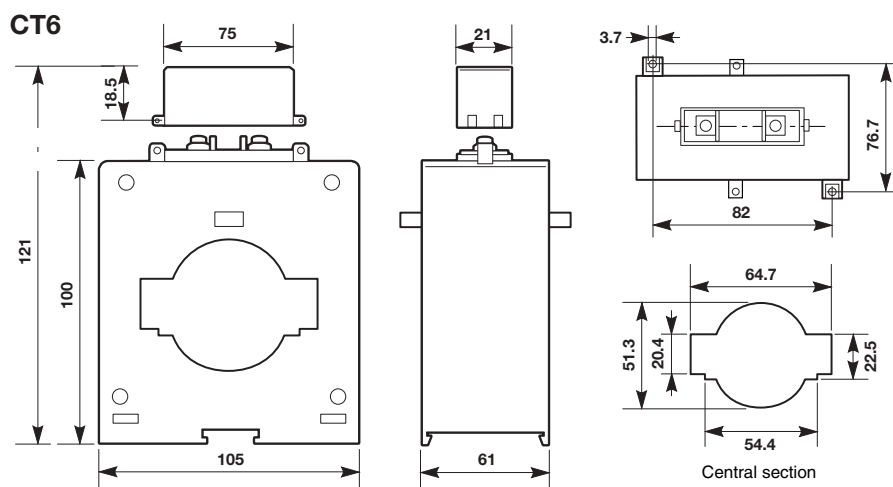
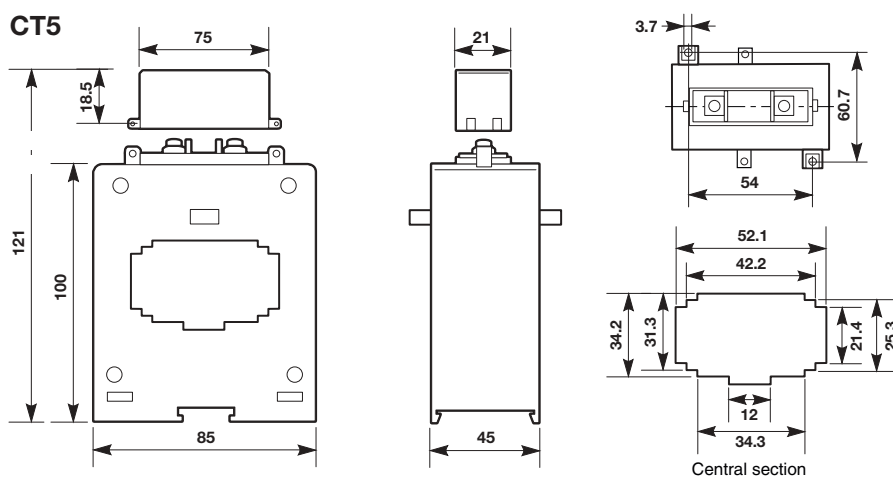
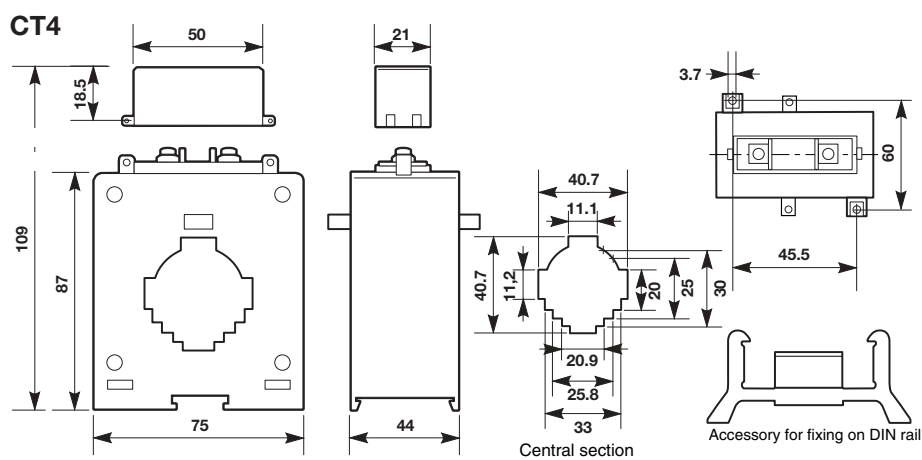


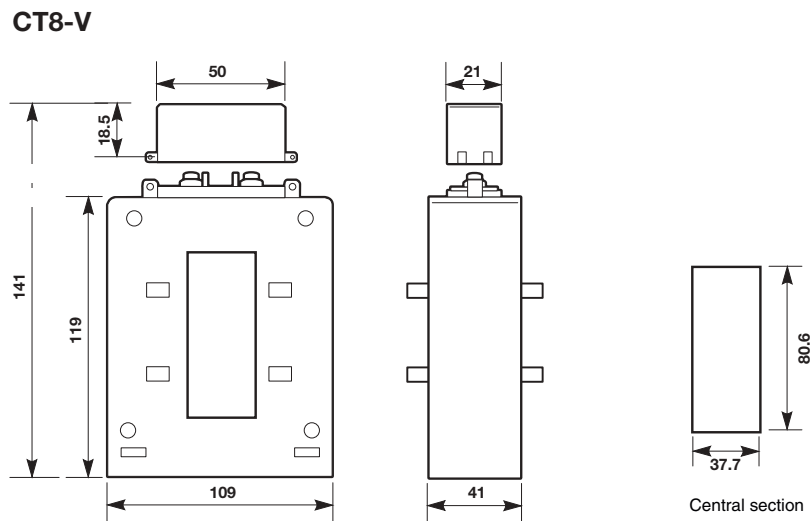
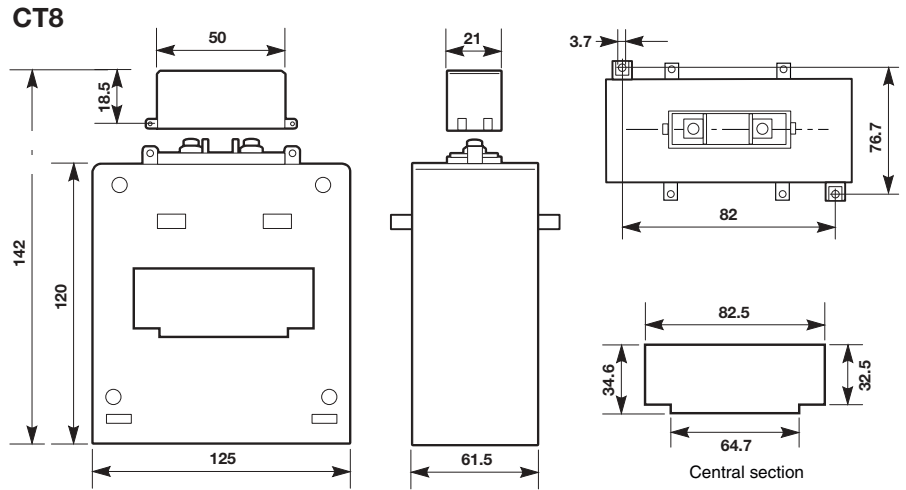
TRFM

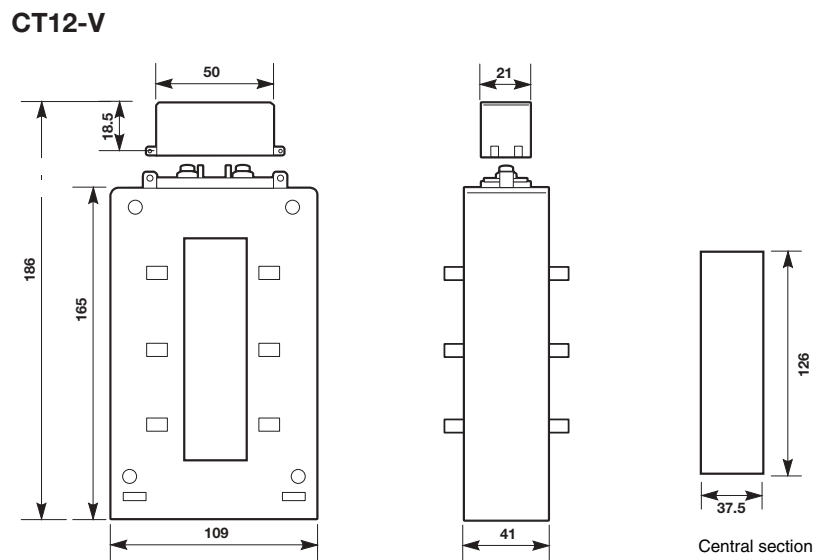
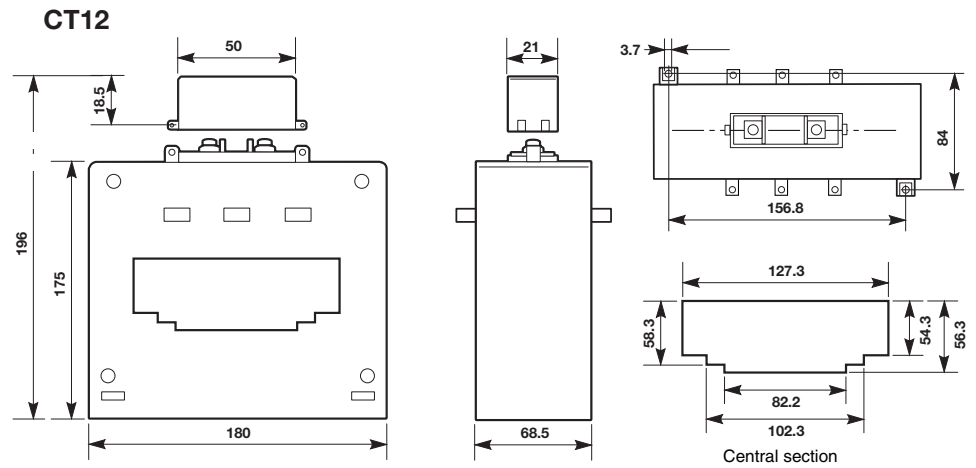


CT3





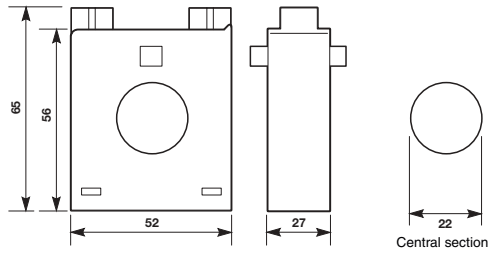




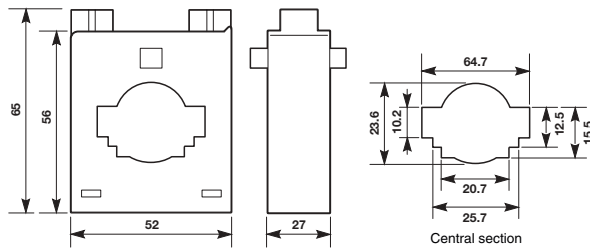


Compact type current transformers

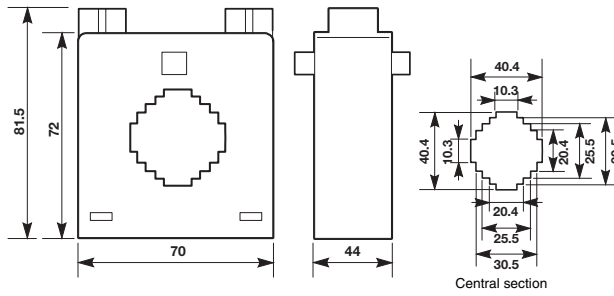
CT-M1



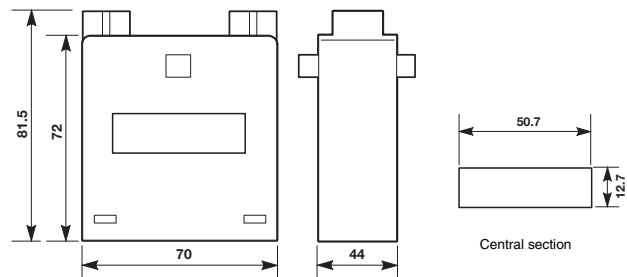
CT-M3



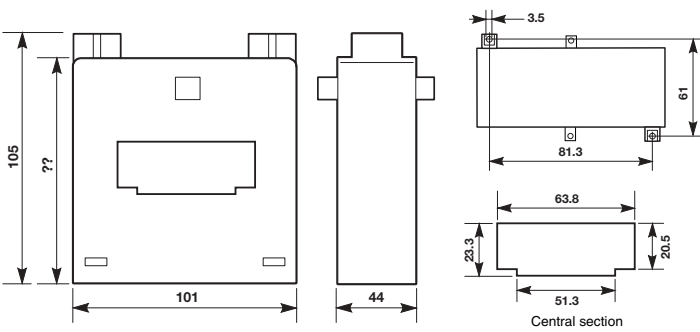
CT-M4



CT-M5

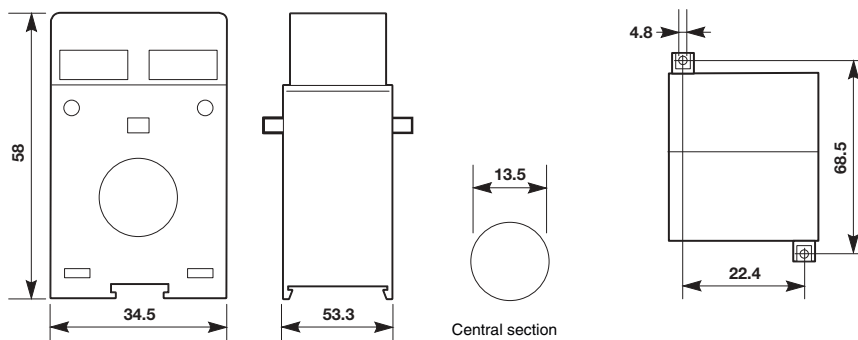


CT-M6

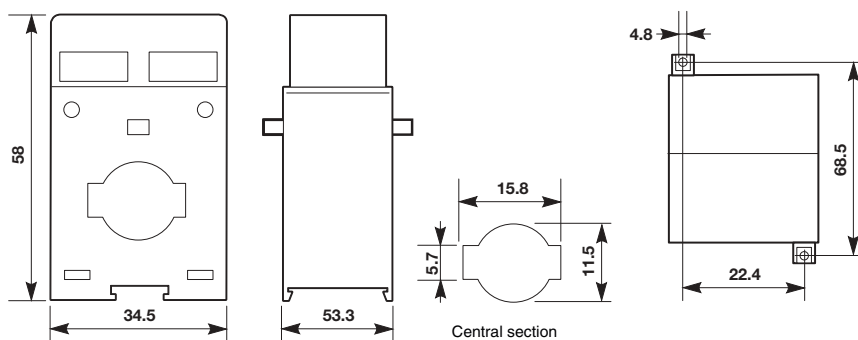


Miniaturized type current transformers

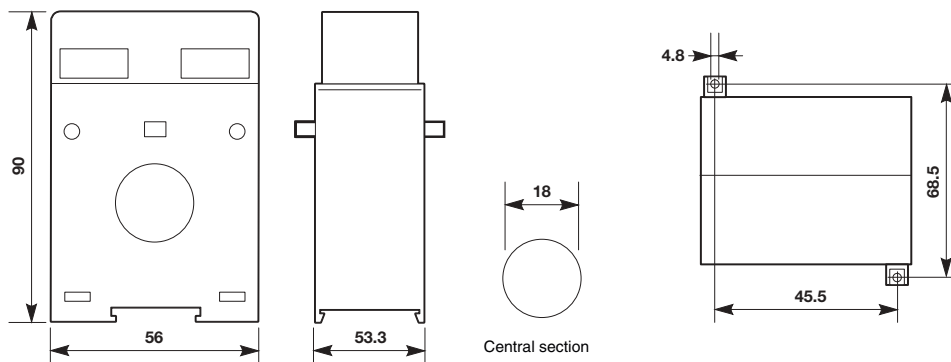
CT-SM1



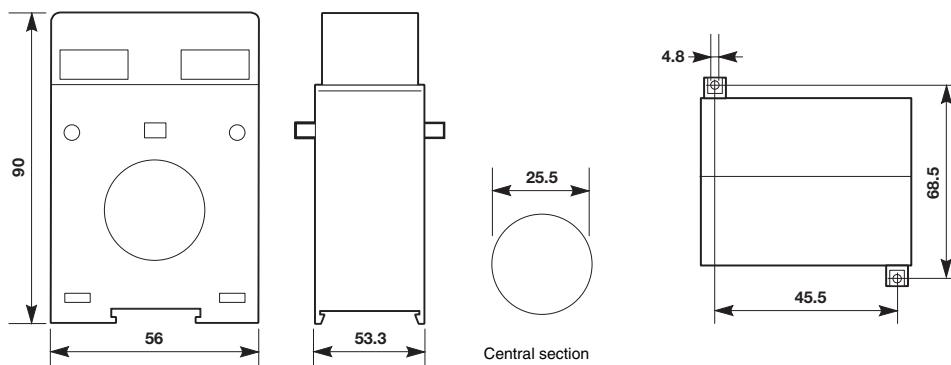
CT-SM2



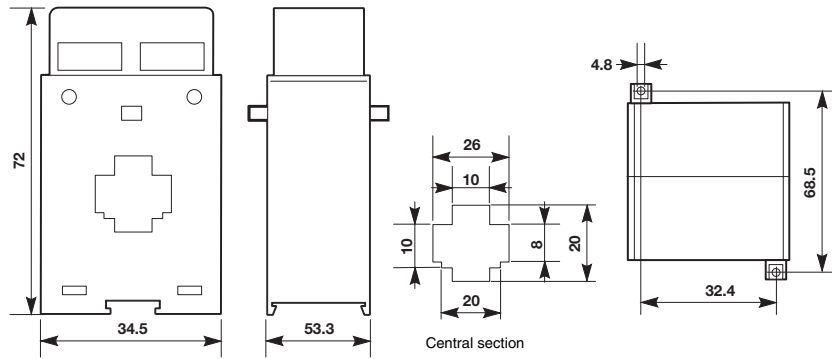
CT-SM3



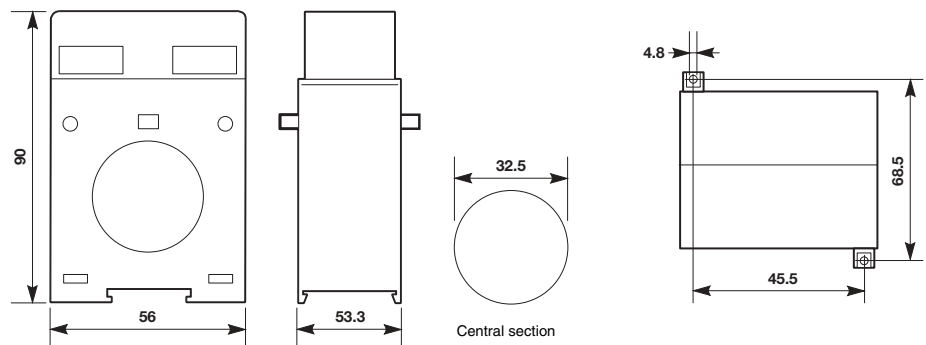
CT-SM4



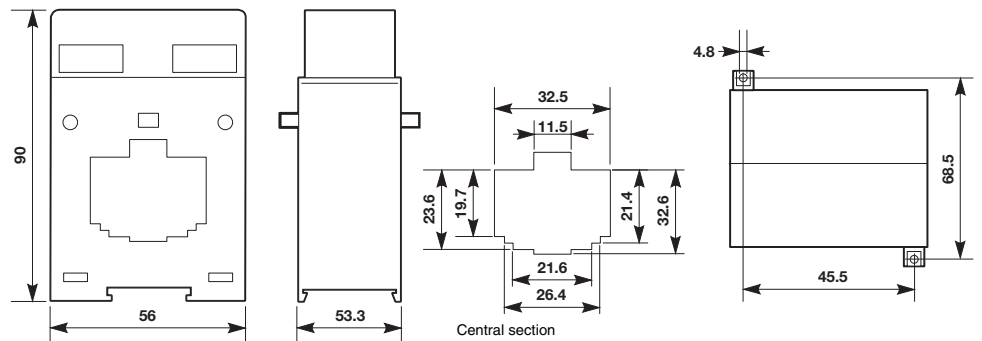
CT-SM5



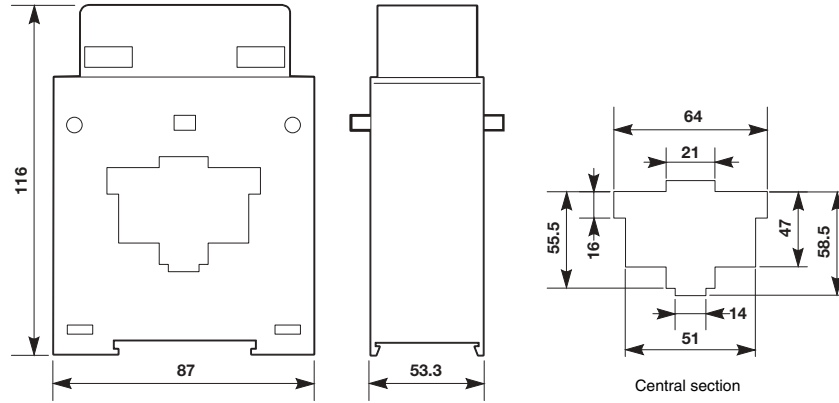
CT-SM6



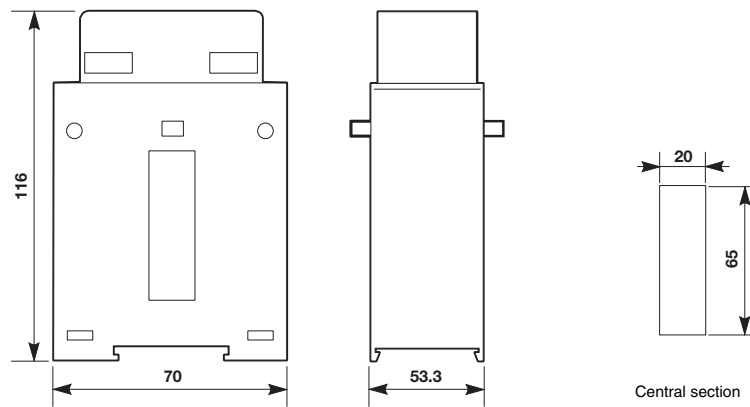
CT-SM7



CT-SM8

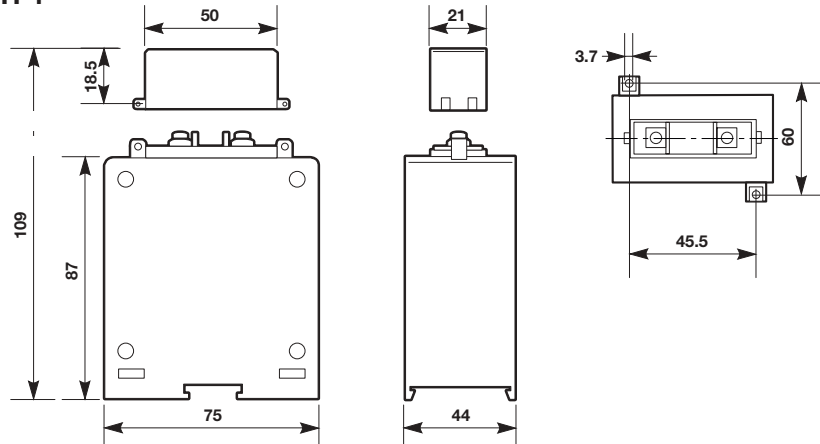


CT-SM9

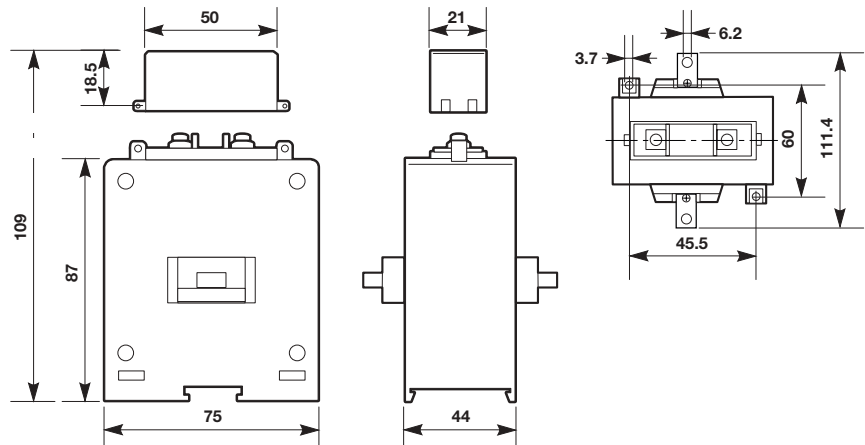


Protection type current transformers

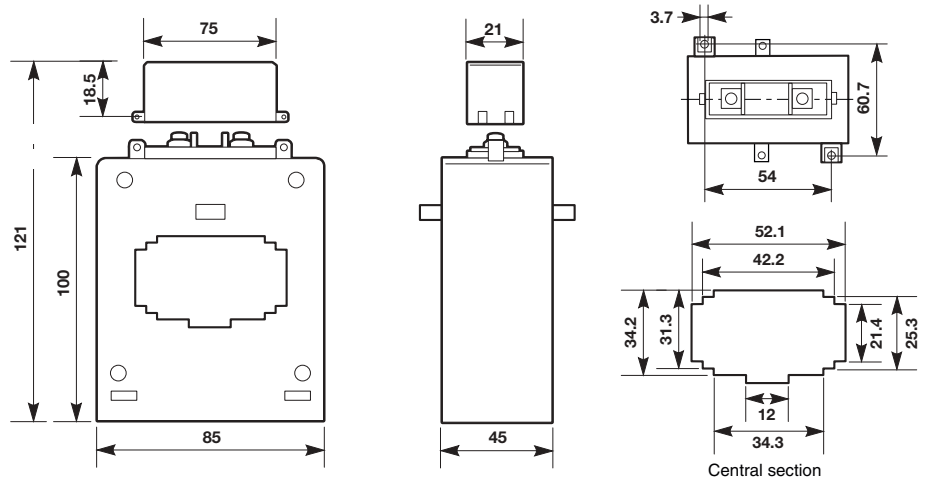
CTP1



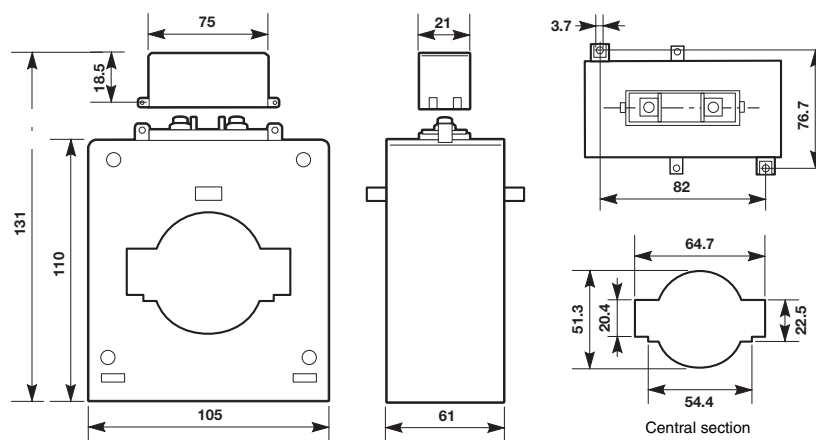
CTP2



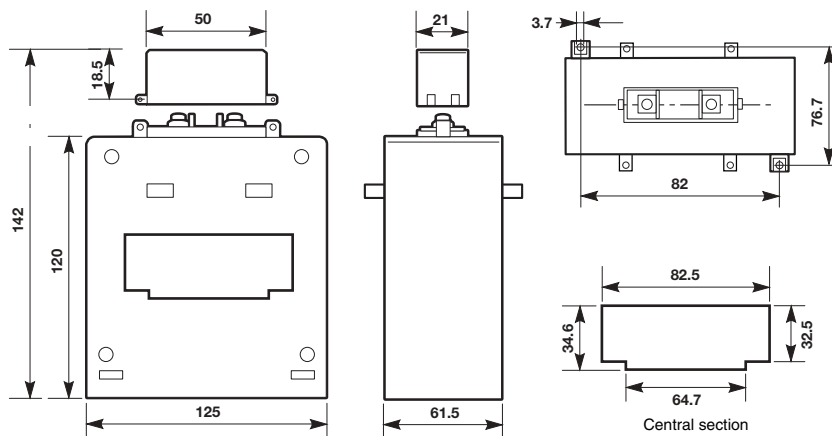
CTP5



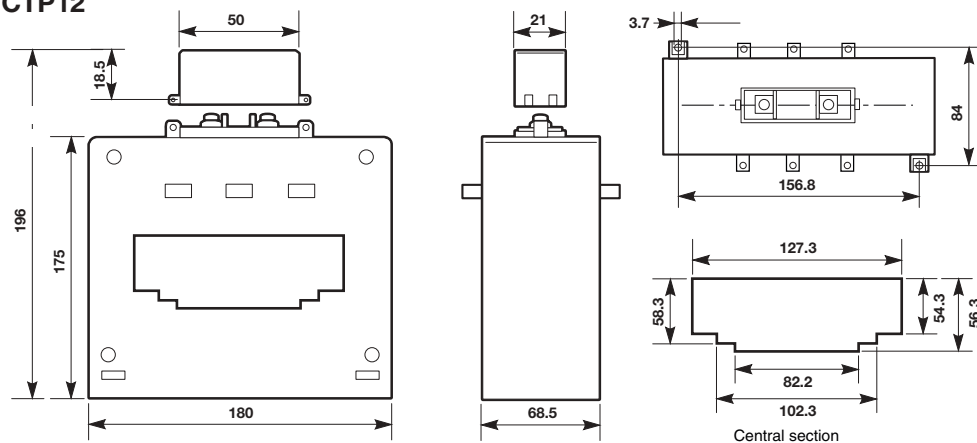
CTP6



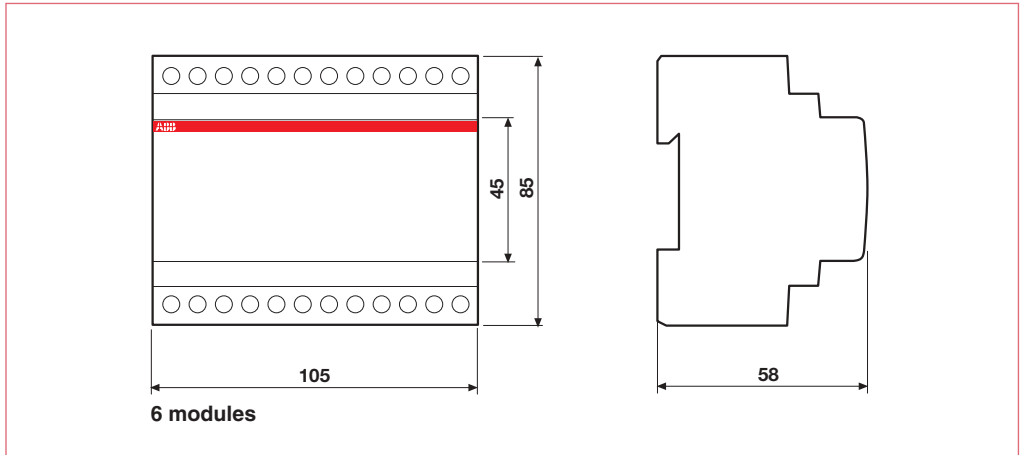
CTP8



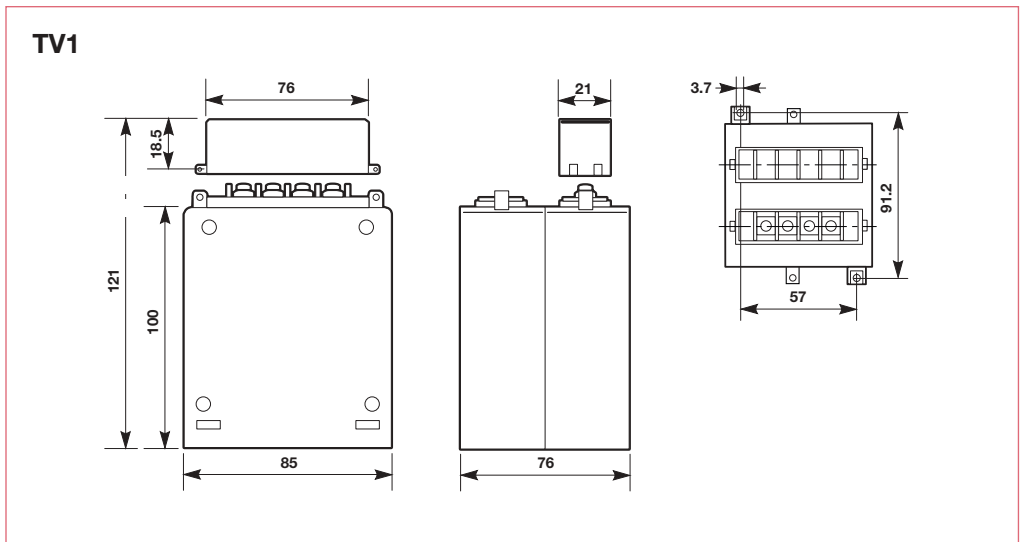
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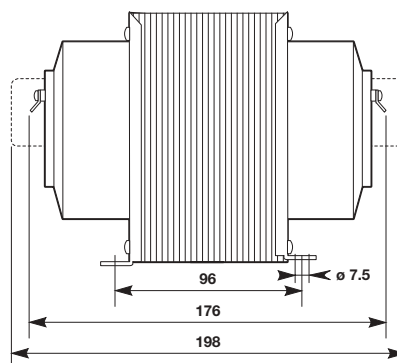
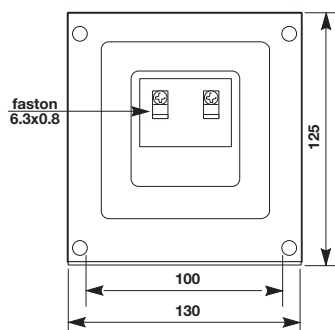
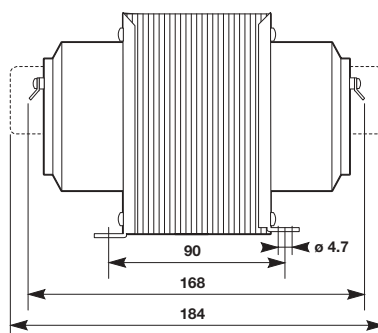
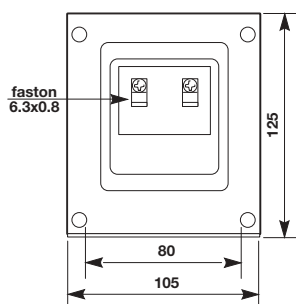
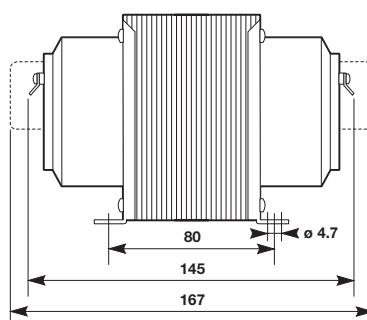
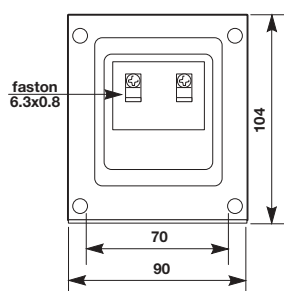
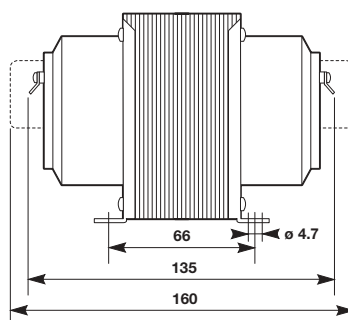
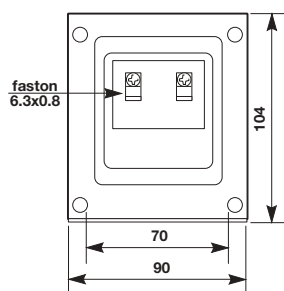


Summing current transformers



Voltage transformers









Shunts

SNT1 - 25 A/60 mV



SNT1 - 25 A/150 mV



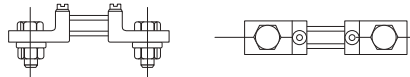
SNT30 - 150 A/60 mV



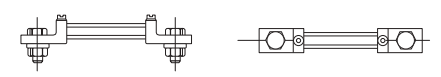
SNT30 - 200 A/150 mV



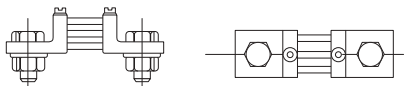
SNT200 - 350 A/60 mV



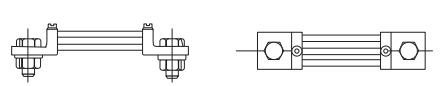
SNT200 - 350 A/150 mV



SNT400 - 700 A/60 mV



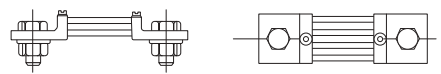
SNT400 - 700 A/150 mV



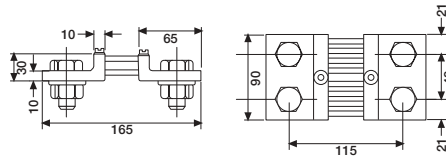
SNT750 - 1000 A/60 mV



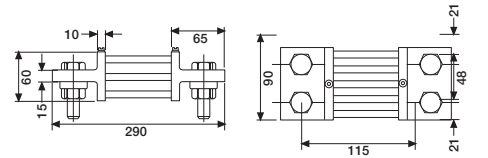
SNT750 - 1000 A/150 mV



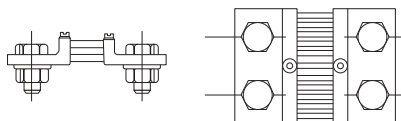
SNT1200 - 1500 A/60 mV



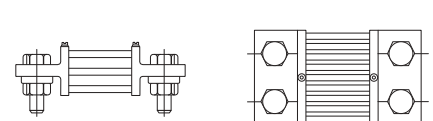
SNT1200 - 1500 A/150 mV



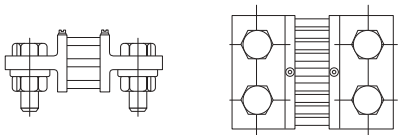
SNT2000 - 2500 A/60 mV



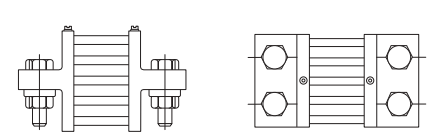
SNT2000 - 2500 A/150 mV



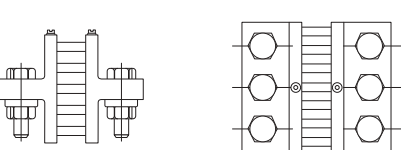
SNT4000 A/60 mV



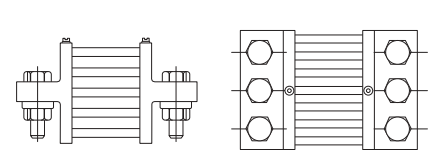
SNT4000 A/150 mV

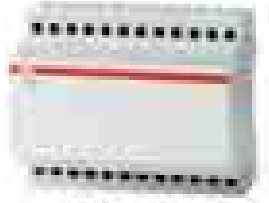


SNT5000 - 6000 A/60 mV

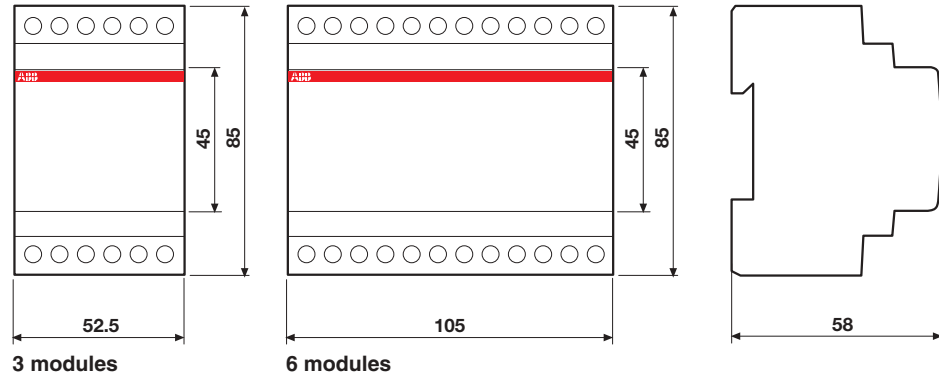


SNT5000 - 6000 A/150 mV

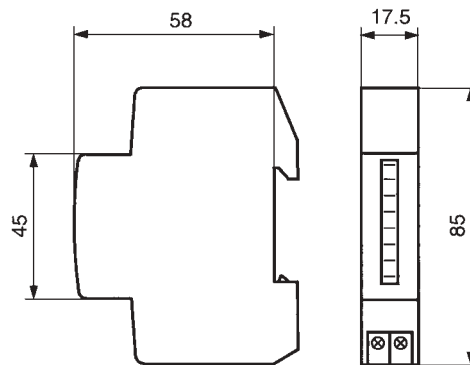




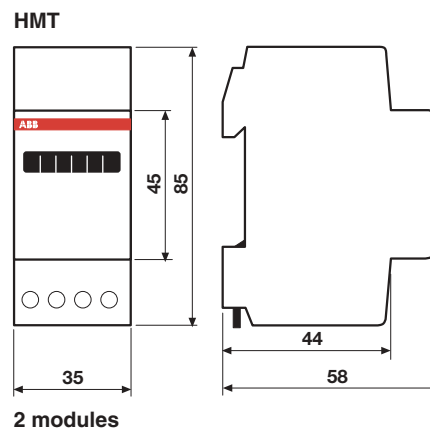
CONV and CNV



E 233 electro-mechanical hour counters

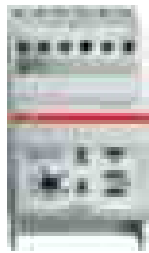
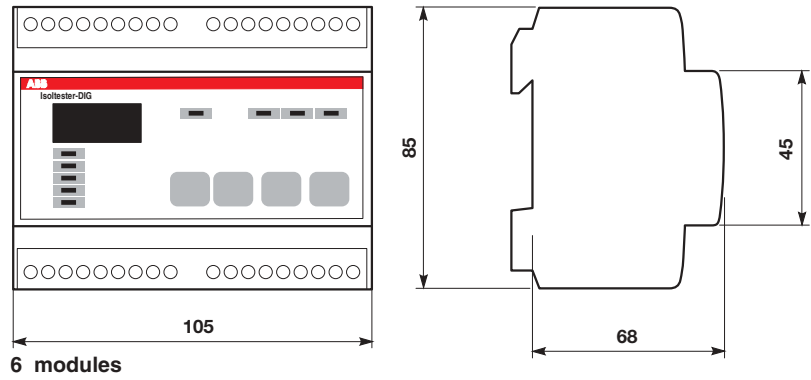


HMT electro-mechanical hour counters

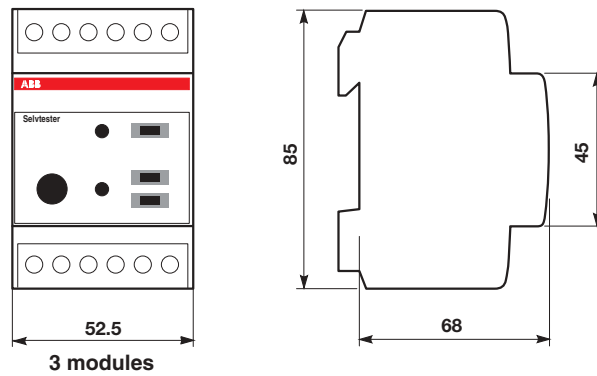




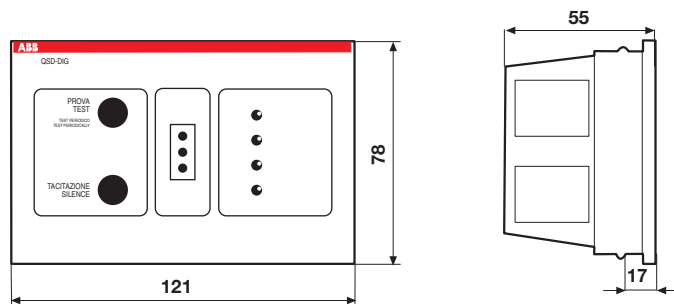
Isoltester-DIG-RZ



Selvtester

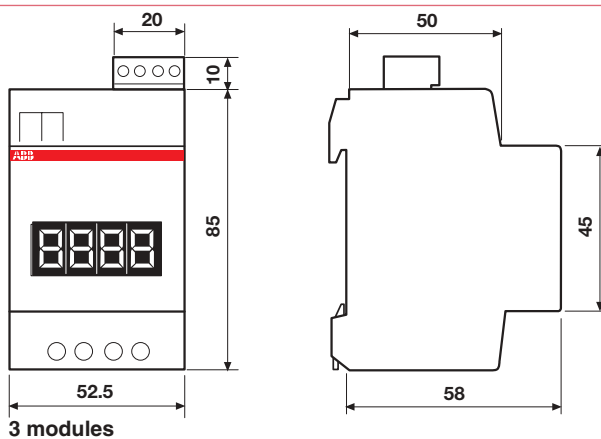


QSD panels for remote signalling

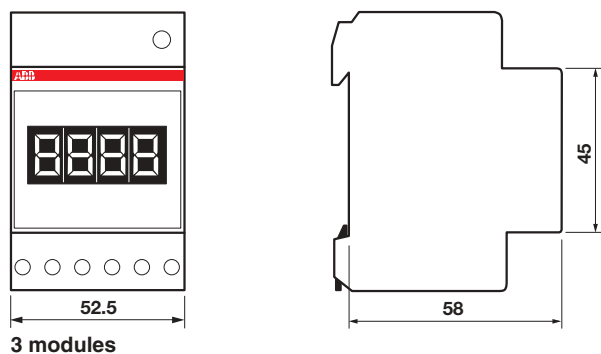


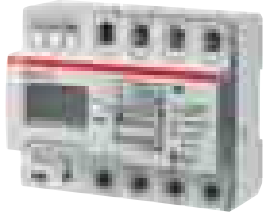


EE MINI METER electronic single phase energy meters

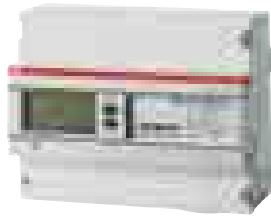
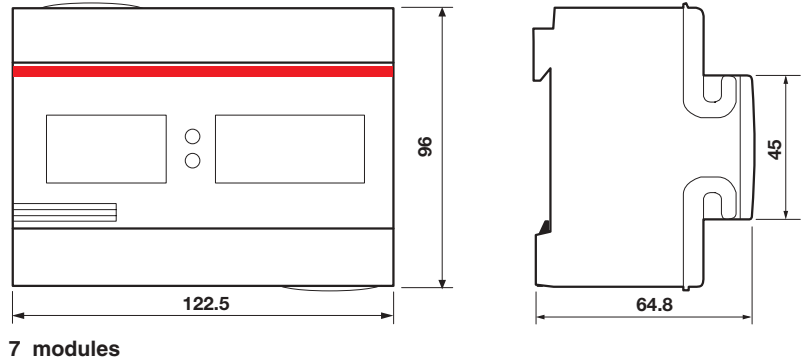


EMT electronic single phase energy meters

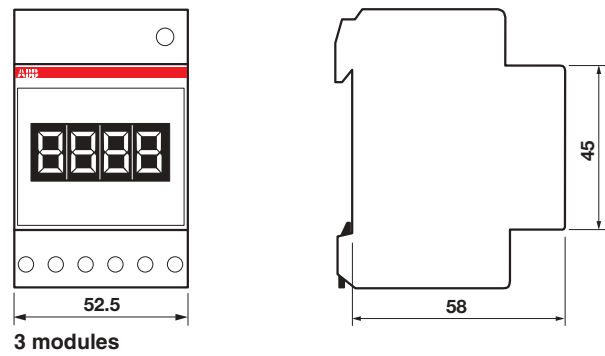




ODIN METER electronic three-phase energy meters

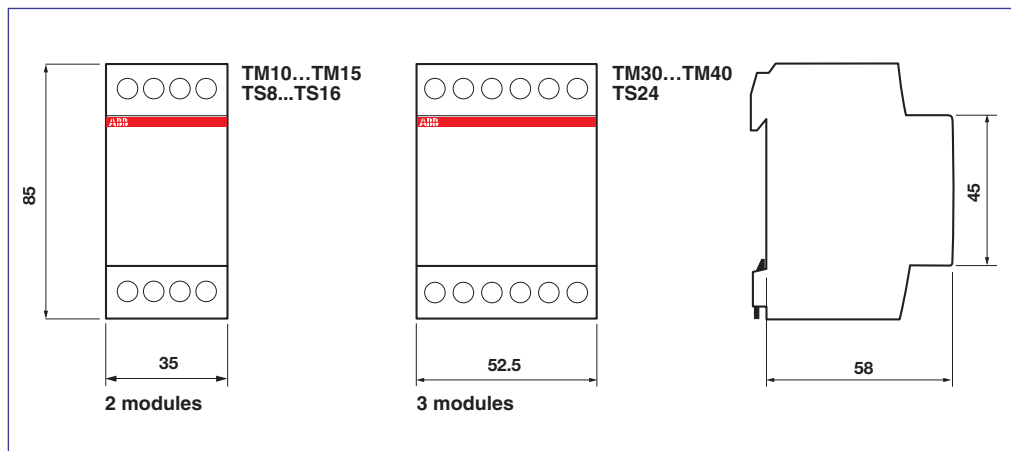


DELTA METER PLUS electronic three-phase energy meters

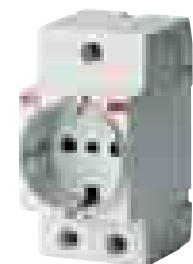
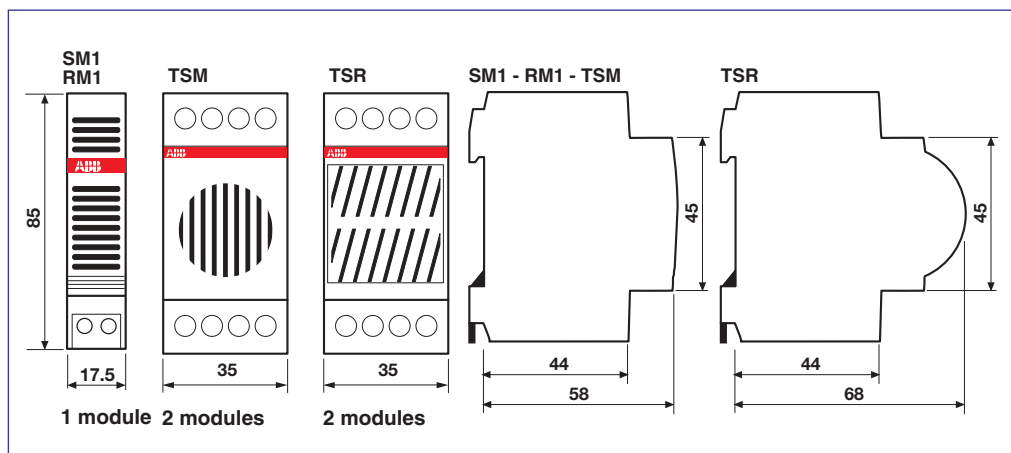




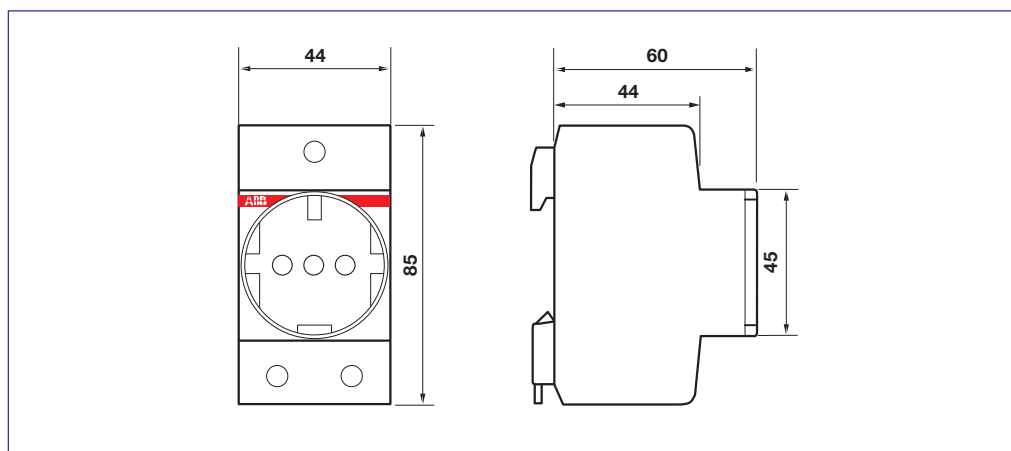
TM/TS bell transformers



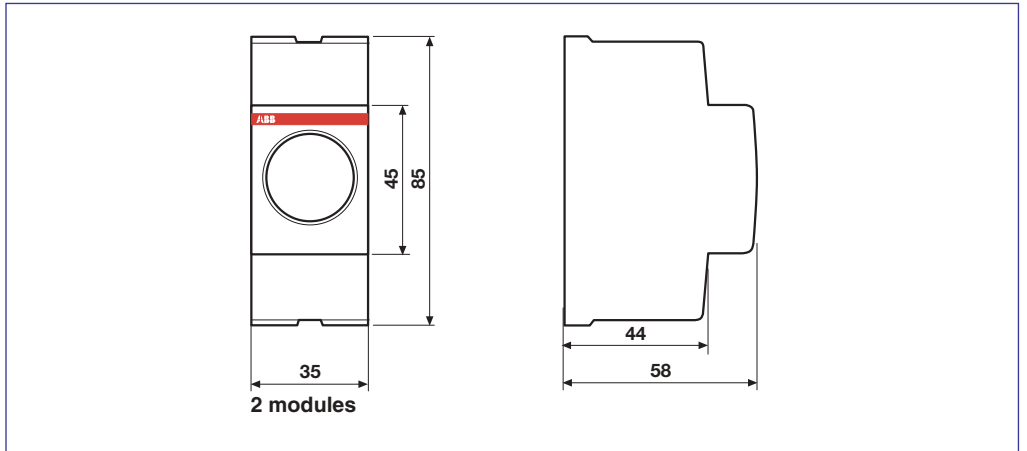
Bells and buzzers



Modular sockets



M9100 modular housing for CBK pushbuttons



## Index

























Worldwide marks and approvals ..... 14/2



# System pro M compact®

## Worldwide marks and approvals

This is the present situation regarding worldwide marks and approvals for ABB System pro M compact range devices. Since at the moment we are still in the launching phase of the range, some certification procedures are still in course of completion. Although some products already obtained some approvals or certificates, they don't necessarily bear the related marks on the product.

	 AENOR Spain 	 APCER Portugal 	 BBJ Poland 	 CCC China 
S 200	■	■	■	
S 200 M	■	■	■	
S 200 P	■	■	■	
S 200 U				
S 200 UP				
S 9..				■
S 280				■
S 290				■
S 500				
F 200 *	■	■		
DDA 200				
FS 201		■	■	
DS 200				
DS 200 M				
DS 9..				■
DS 271				
DDA for S 290				
DDA for S 500				
	 GOST Russia 	 IMQ Italy 	 KEMA Netherland 	 LCIE France 
S 200	■	■	■	■
S 200 M	■	■	■	■
S 200 P	■	■	■	■
S 200 U				
S 200 UP				
S 9..		■	■	■
S 280	■	■		■
S 290				■
S 500				
F 200 *	■	■	■	■
DDA 200		■		
FS 201	■	■	■	■
DS 200				
DS 200 M		■		
DS 9..	■	■	■	■
DS 271				
DDA for S 290				
DDA for S 500				
	 SIQ Slovenia 	 SIRIM Malaysia 	 TICK Australia 	 UL USA 
S 200	■	■	■	■ ①
S 200 M	■	■	■	■
S 200 P	■	■	■	■ ①
S 200 U				■ ②
S 200 UP				■ ②
S 9..				
S 280			■	
S 290				■
S 500				
F 200 *		■	■	■
DDA 200				
FS 201				■
DS 200				
DS 200 M				
DS 9..			■	
DS 271			■	
DDA for S 290				
DDA for S 500				

■ APPROVED    ① SUPPLEMENTARY PROTECTION    ② BRANCH CIRCUIT PROTECTION

# System pro M compact®

## Worldwide marks and approvals



**CEBEC**  
Belgium



**CSA**  
Canada



①  
(≤ 25 A) ①  
②  
②



**DEMKO**  
Denmark



**EVPU**  
Slovakia



**EZU**  
Czech Rep.



**FIMKO**  
Finland



**NEMKO**  
Norway



**OVE**  
Austria



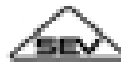
**PSB**  
Singapore



**SABS**  
South Africa



**SEMKO**  
Sweden



**SEV**  
Switzerland



**VDE**  
Germany



**BV**  
France



**DNV**  
Norway



**GL**  
Germany



**LRS**  
Great Britain



**RINA**  
Italy



**RMRS**  
Russia



\* indicated approvals are the envelopment of the approvals for all F 200 versions; contact your LSO to know which are the approvals obtained for each F 200 version



In consideration of modifications to Standards and materials, the characteristics and overall dimensions indicated in this catalogue may be considered binding only following confirmation by ABB

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