

Metal Switch, Switching Voltage up to 250 VAC



Non-illuminated



Ring Illumination RD
blue



Ring illumination
red

See below:
[Approvals and Compliances](#)

Description

- Mechanical switch with stroke MO (Momentary)
- With or without illumination
- With torsion protection for easier positioning
- Equipped with flat plug in terminals to permit fast connection

Unique Selling Proposition

- Attractive tactile feedback
- High quality materials
- Long life span
- Color marking

Characteristics

- Housing material in stainless steel
- Actuator in stainless steel or ceramic
- Housing and actuator material of the ring-illuminated RD version in black anodized aluminum
- Switching voltage from 30 VDC to 250 VAC
- Switching current from 0.1 A to 10 A, with gold 100mA
- All laser marked, ring-illuminated and point-illuminated versions have anti-rotation protection for easy mounting

References

Other versions on request

Weblinks

[pdf data sheet](#), [html datasheet](#), [General Product Information](#), [CAD-Drawings](#), [Product News](#), [Detailed request for product](#)

Technical Data

Electrical Data

Supply Voltage LED	5 VDC - 24 VDC, see table of variants
Micro Switch	see details in table 'Micro Switch'
Impulse Withstand Voltage (ESD)	8 kV contact discharge 15 kV air discharge

Mechanical Data

Actuating Force	4.5 N
Actuating Travel	1.0 mm
Lifetime	1.5 million actuations
Shock Protection	IK08 / IK07 (M30)
Mounting screw torque Plastic Nut	max. 3.5 Nm

Climatical Data

Operating Temperature	-30 to 85 °C (Sub. Microswitch to -40°C)
Storage Temperature	-40 to 85 °C
Protection Class	IP66 / IP67 Front Side
Salt Spray Test (acc. to IEC 60068-2-11)	24 h / 48 h / 96 h Residence Time

Material

Housing	Aluminium / Stainless Steel
Actuator	Aluminium / Stainless Steel / Ceramics
Seal Ring	NBR70
Plastic Nut	PA, UL94





Approvals and Compliances

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [Details about Approvals](#)

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

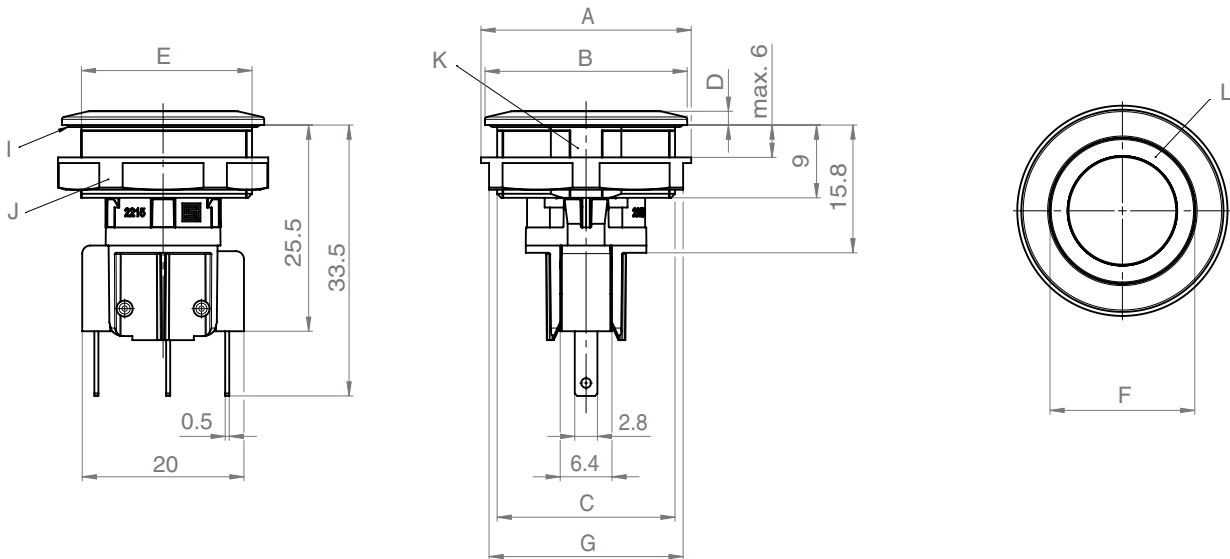
Compliances

The product complies with following Guide Lines

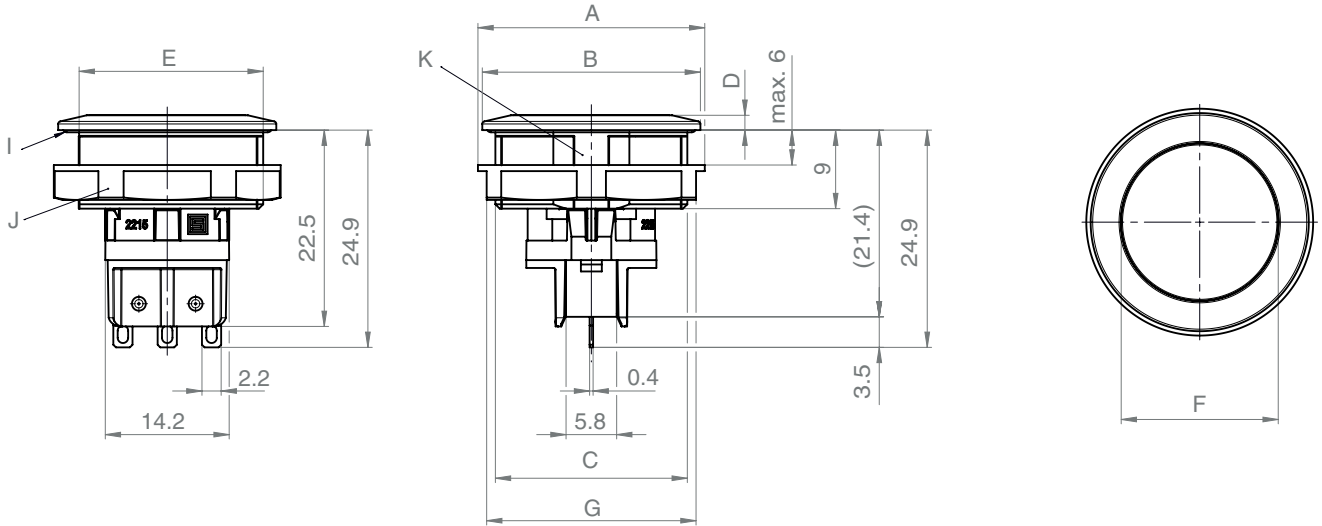
Identification	Details	Initiator	Description
	CE declaration of conformity	SCHURTER AG	The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008.
	UKCA declaration of conformity	SCHURTER AG	The UKCA marking declares that the product complies with the applicable requirements laid down in the British Amendment of Regulation (EC) 765/2008.
	RoHS	SCHURTER AG	Directive RoHS 2011/65/EU, Amendment (EU) 2015/863
	REACH	SCHURTER AG	On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force.

Dimension [mm]

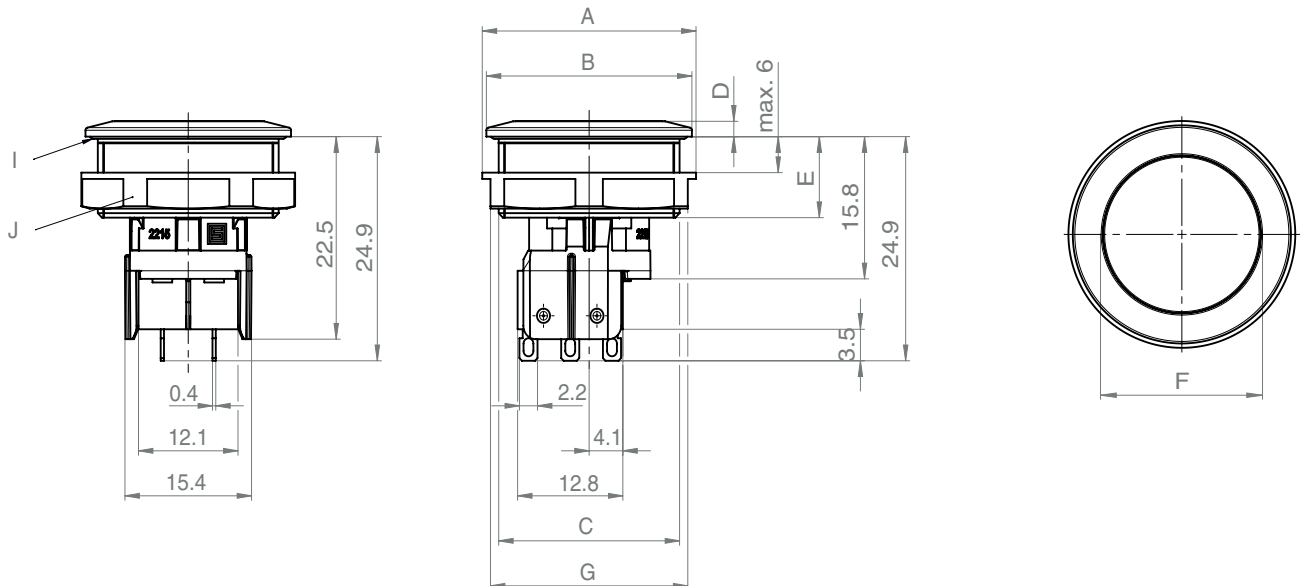
MSM II SPDT



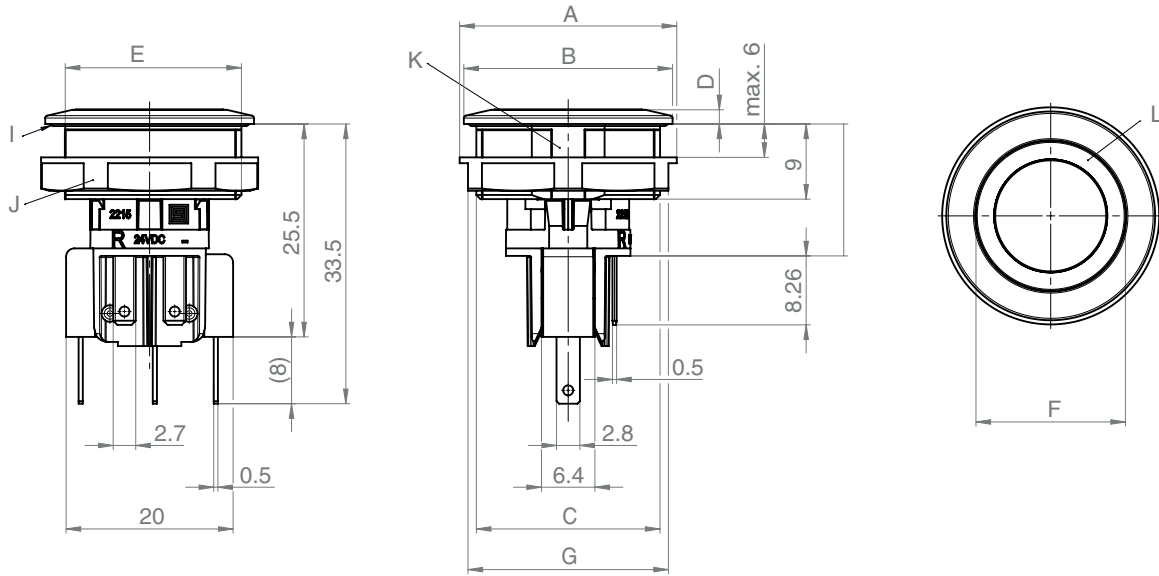
MSM II SPDT Subminiature Microswitch



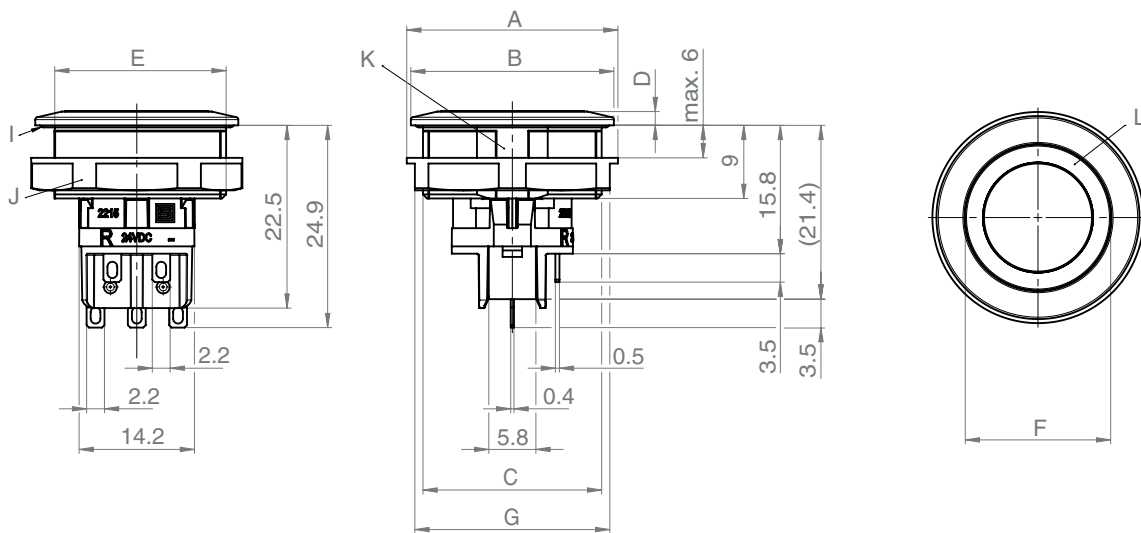
MSM II DPDT Subminiature Microswitch



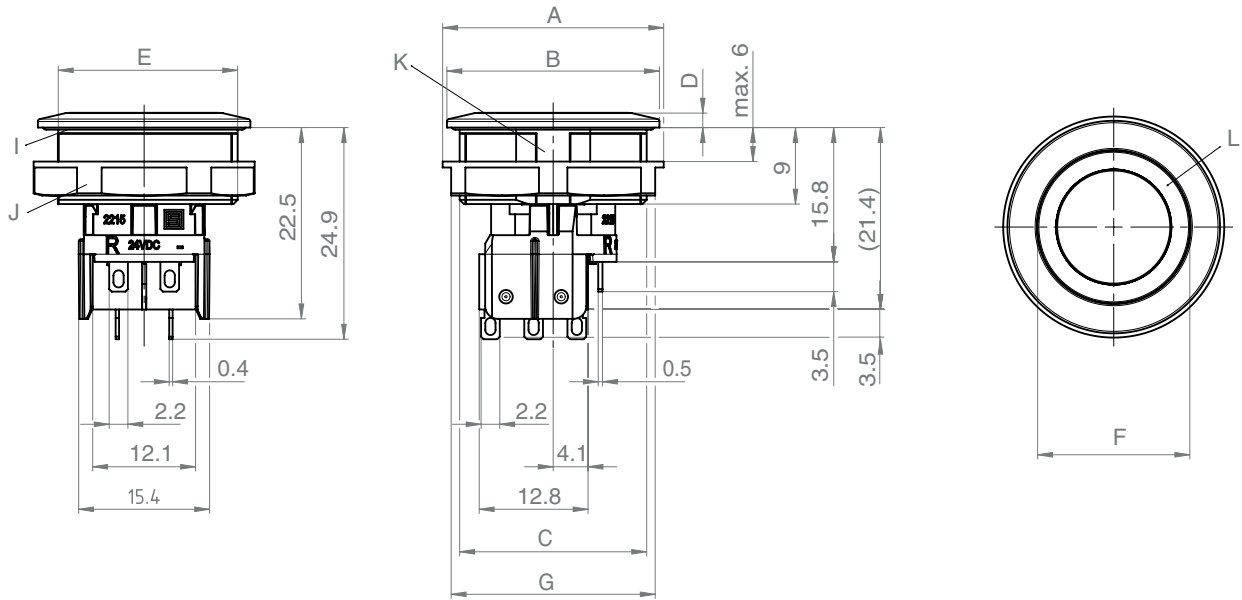
MSM II RI SPDT



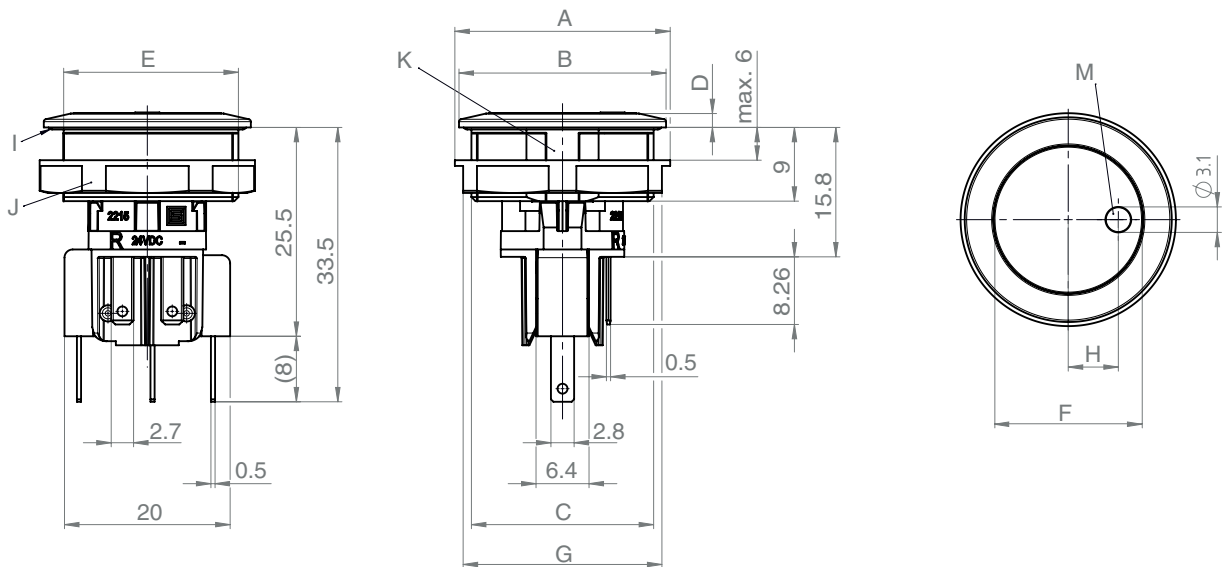
MSM II RI SPDT Subminiature Microswitch



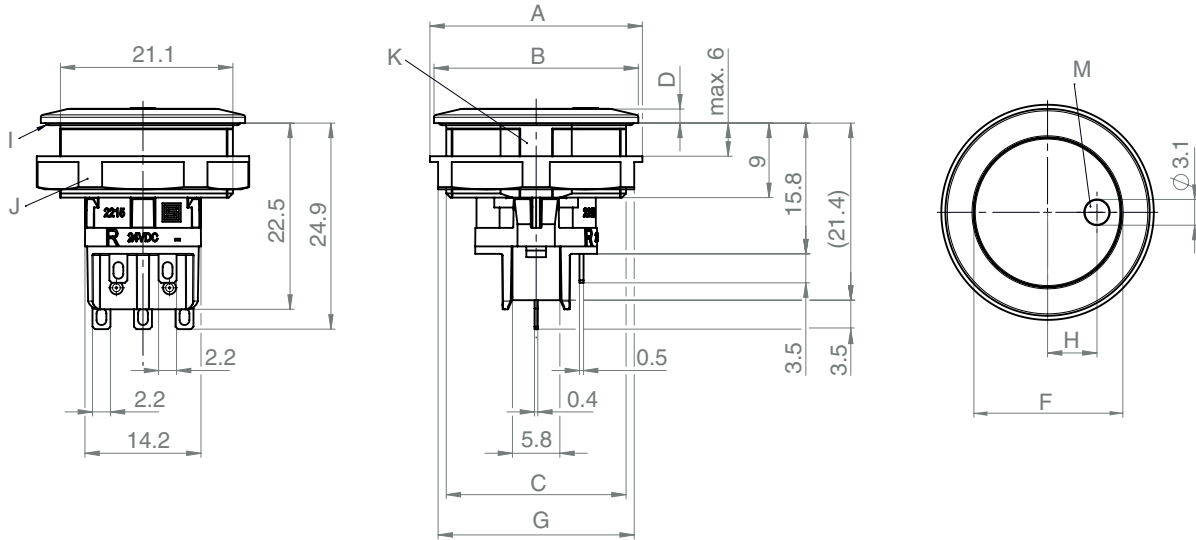
MSM II RI DPDT Subminiature Microswitch



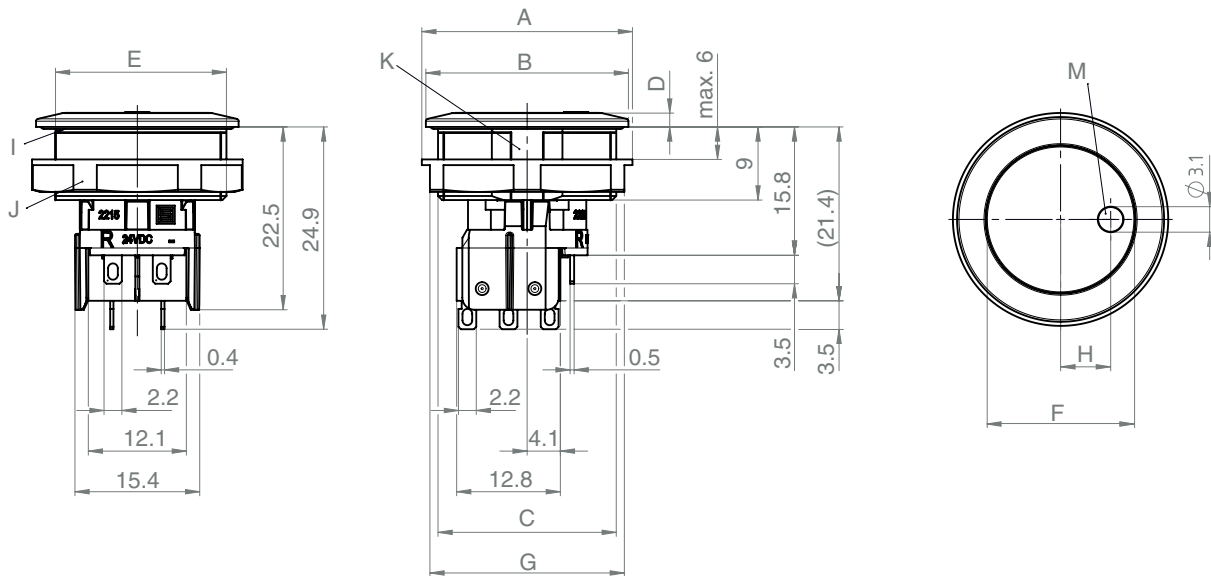
MSM II PI SPDT



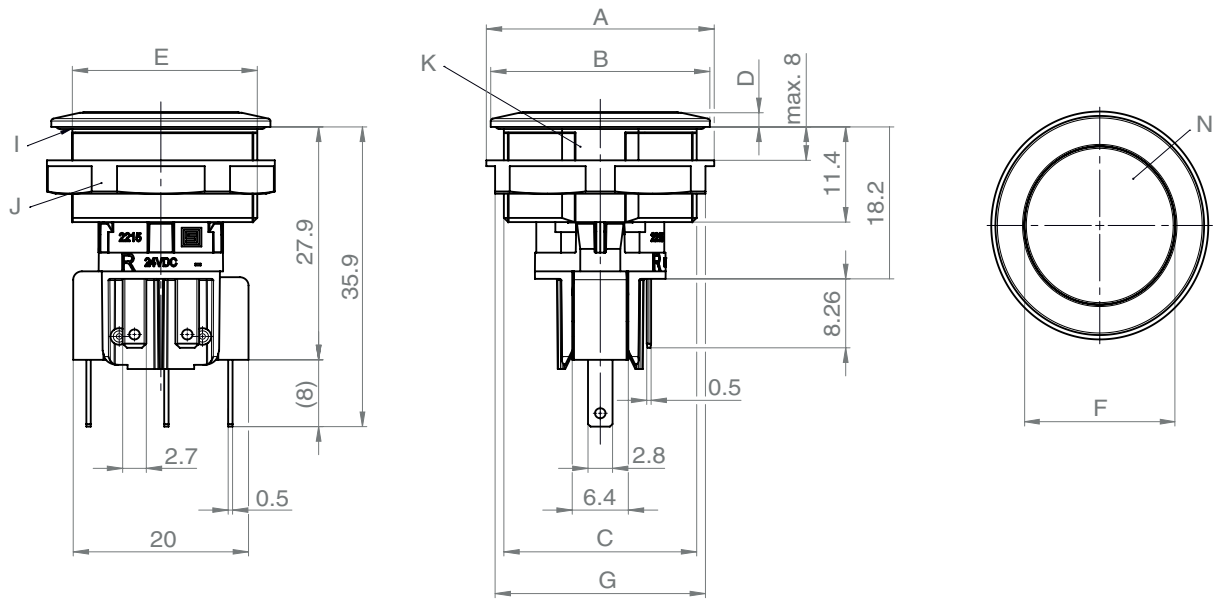
MSM II PI SPDT Subminiature Microswitch



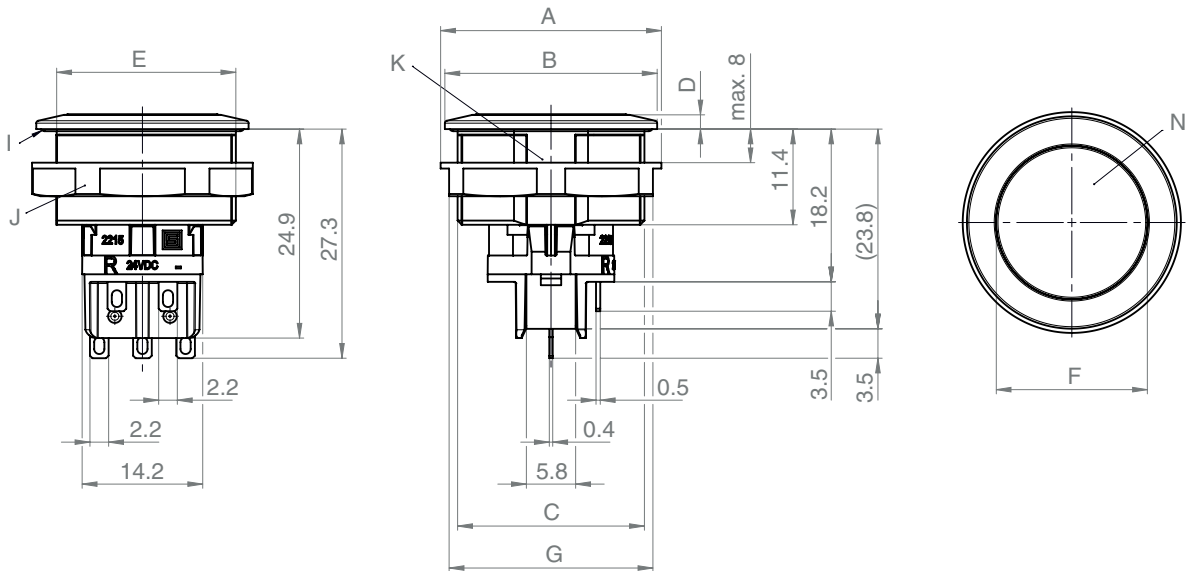
MSM II PI DPDT Subminiature Microswitch



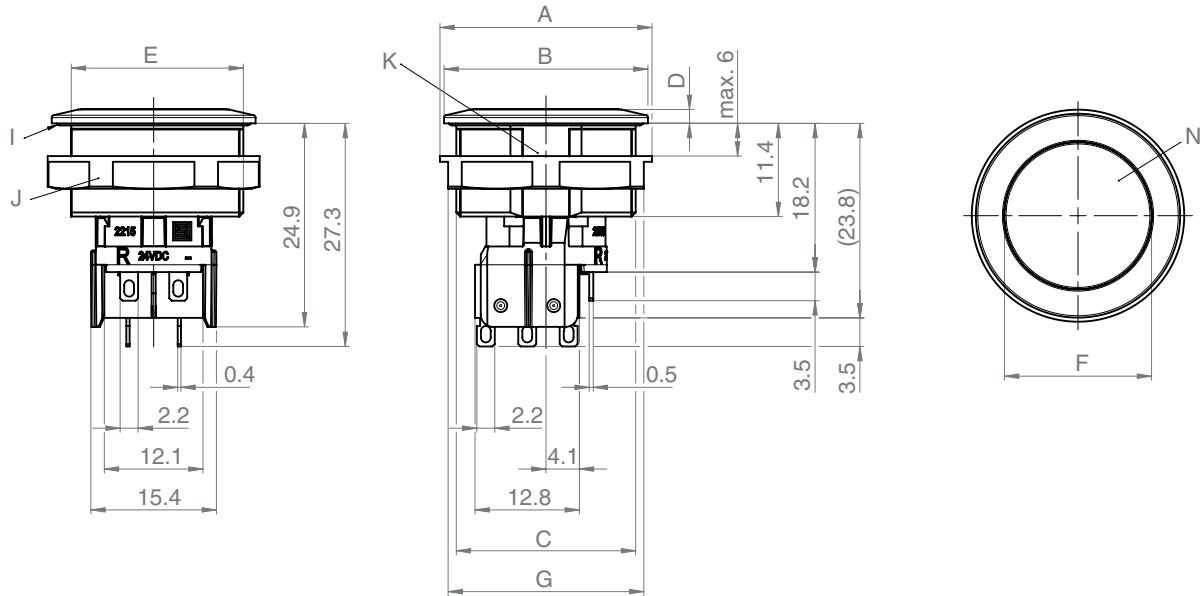
MSM II AI SPDT



MSM II AI SPDT Subminiature Microswitch



MSM II AI DPDT Subminiature Microswitch

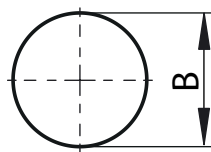
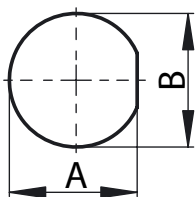


Diameter in mm	16	19	22	30
A	Ø20	Ø24	Ø26	Ø34.5
B	Ø19	Ø22	Ø25	Ø34
C	M16x1	M19x0.75	M22x1	M30x1.5
D	1.7	1.7	1.7	2
E	15.1	18.1	21.1	28.8
F Operating area / illumination area	Ø12.8	Ø15.8	Ø18	Ø25
G	AF19	AF22	AF24	AF32
H	4.3	5.3	6.05	8.4
I	O-Ring			
J	Nut			
K	Anti-rotation lock			
L	Lighting ring			
M	Point illumination			
N	Area illumination			

Dimension

With torsion protection

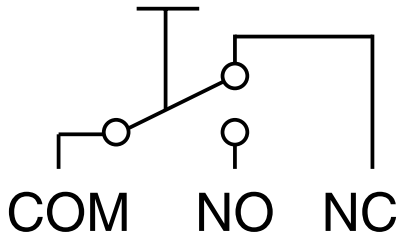
Without torsion protection



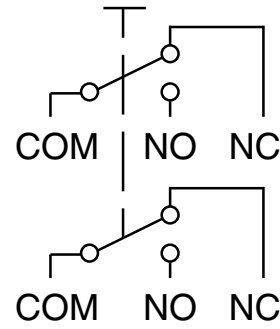
Diameter (mm)	A	B
16	15.15+0.05	16.1+0.1
19	18.15+0.05	19.1+0.1
22	21.15+0.05	22.1+0.1
24	23.50+0.05	24.1+0.1
30	28.85+0.05	30.1+0.1

Diagrams

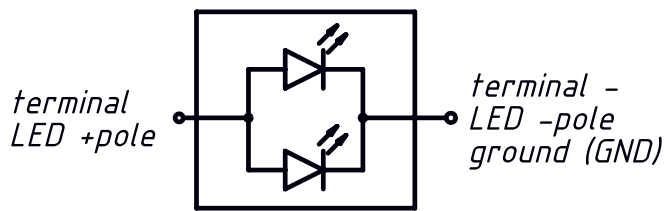
Switching element SPDT



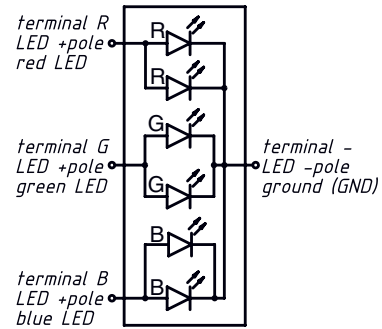
Switching element DPDT



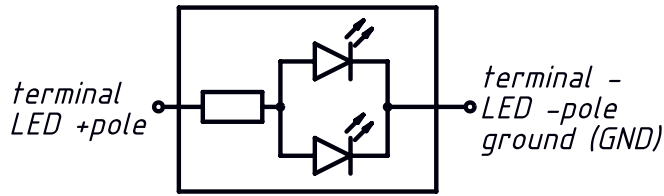
Illumination single color
 Terminal assignment without series resistor



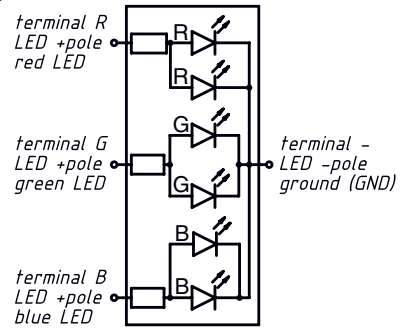
Illumination RGB
 Terminal assignment without series resistor



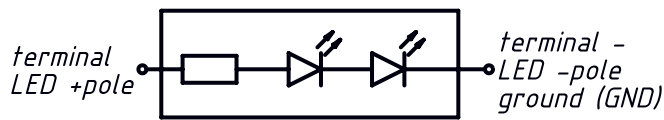
Illumination single color
 Terminal assignment with resistors for 5 VDC



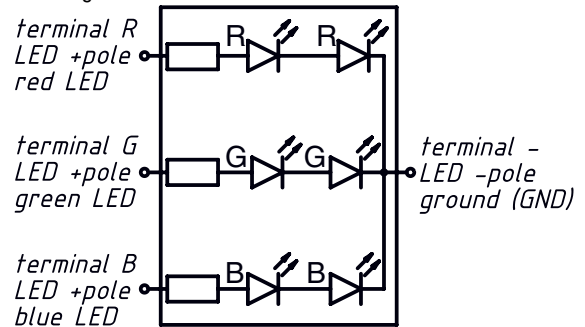
Illumination RGB
 Terminal assignment with resistors for RGB 5 VDC



Illumination single color
 Terminal assignment with resistors for 12 VDC and 24 VDC



Illumination RGB
 Terminal assignment with resistors for RGB 12 VDC and 24 VDC



Micro Switch

Micro Switch	Contact Material	Switching Voltage	Switching current	Rated Switching Capacity	Lifetime	Contact Resistance	Insulation Resistance	Duration of Bounce
0.1 A, IP40	Au	max. 30 VDC	max. 0.1 A	3 W	0.2 Mio.	< 50 mΩ	> 100 MΩ	< 5 ms
0.1 A, IP67		max. 30 VDC	max. 0.1 A	25 W	0.05 Mio.			
5 A / 125 VAC bzw. 3 A / 250 VAC, IP40	Ag	max. 125 / 250 VAC	max. 5 / 3 A	750 W	0.2 Mio.	< 30 mΩ	> 100 MΩ	< 5 ms
6 A, IP67		max. 250 VAC	max. 5 A	1250 W	0.01 Mio.			
10 A, IP40	Ag	max. 250 VAC	max. 10 A	2500 W	0.05 Mio.	< 30 mΩ	> 100 MΩ	< 5 ms
10 A, IP67		max. 250 VAC	max. 10 A	2500 W	0.01 Mio.			

Subminiature Microswitch

Subminiature Microswitch	Contact Material	Switching Voltage	Switching current	Rated Switching Capacity	Lifetime	Contact Resistance	Insulation Resistance	Duration of Bounce
0.1 A, IP40	Au	max. 30 VDC	max. 0.1 A	3 W	0.1 Mio.	< 100 mΩ	> 100 MΩ	< 10 ms
3 A, IP40	Ag	max. 125 VAC	max. 3 A	375 W	0.03 Mio.	< 30 mΩ	> 100 MΩ	< 10 ms

Order number key

M	S	M	II	-	19	-	MO	NX	A10	-	B	1	-	B	A0	-	A	-	PI	0GN	012	A0	-	S0	NC	B	-	S0	WT	NF	-	1	074	-	C
					1							2					3			4	5	6	*	*	*	*		7				*	8	*	

Diameter			1
16 mm ¹⁾	=		16
19 mm	=		19
22 mm	=		22
30 mm	=		30

Switching current/ Design of the switching contact			2
Design	Microswitch SPDT with quick connect		B1
100mA Gold contact	=	A10-B1-B-A0	
3A	=	03A-B1-A-A0	
5A	=	05A-B1-A-A0	
6A	=	06A-B1-B-A0	
10A	=	10A-B1-B-A0	

Design			B2
Design	Subminiature SPDT with solder terminal		B2
100mA Gold contact	=	A10-B2-B-E0	
3A	=	03A-B2-A-E0	

Design			D3
Design	Subminiature DPDT with solder terminal		D3
100mA Gold contact	=	A10-D3-B-E0	
3A	=	03A-D3-A-E0	

Microswitch version			3
IP40 (100mA, 3A, 5A, 10A)	=		A
IP67 (100mA, 3A, 6A, 10A)	=		B

Illumination / Appearance			4
No illumination	=		00
No illumination with colored ring	=		RC
Area illumination	=		AI
Ring illumination	=		RI
Point illumination	=		PI
Ring illumination Discreet/DeadFront	=		RD





Illumination / Color			5
None	=		000
Red	=		0RD
Green	=		0GN
Blue	=		0BL
Yellow	=		0YL
White	=		0WT
Multicolor ¹⁾	=		RGB

Supply voltage illumination			6
None	=		000
5 V	=		005
12 V	=		012
24 V	=		024

Housing material and color				*
Stainless steel ^{1.4305}	=	S0	NC	Silver
Aluminum ^{EN AW-6082 (3.3215)}	=	A0	BK	Black

Actuator material			7
Stainless steel ^{1.4305}	=		S0
Ceramic (only with stainless steel)	=		C0
Aluminum (only on RD version)	=		A0

Lettering type			*
None	=		0
Laser marking	=		1

Marking type			8
None	=		000
Lettering symbol			
STOP	=		057
ON	=		065
OFF	=		066
ON/OFF	=		071
START	=		072
	=		074
	=		075
	=		076
	=		077

further lettering on request

Accessories			*
None	=		0
Hex nut stainless steel ^{with O-ring}	=		A
Hex nut plastic ^{with O-ring}	=		C

1) Not available for DPDT

* Values marked with an asterisk depend on the selected properties.

All Variants

Diameter	Switching current	Electrical contact	Style	IP specification backside	Illumination	Illumination color	Supply Voltage LED	Order Number
16	100mA	SPDT	1)	IP40	non-illuminated	-	-	3-145-122
16	5A	SPDT	1)	IP40	non-illuminated	-	-	3-145-273
19	100mA	SPDT	1)	IP40	RI	red	24VDC	3-145-448
19	100mA	SPDT	1)	IP40	AI	RGB	24VDC	3-145-539
19	5A	SPDT	1)	IP40	non-illuminated with colored ring	red	-	3-145-556
19	5A	SPDT	1)	IP40	non-illuminated with colored ring	green	-	3-145-559
19	5A	SPDT	1)	IP40	RI DeadFront	RGB	24VDC	3-145-567
19	3A	DPDT	3)	IP40	non-illuminated	-	-	3-145-766
19	3A	DPDT	3)	IP40	PI	green	-	3-145-768
19	3A	DPDT	3)	IP40	PI	blue	-	3-146-007
22	5A	SPDT	1)	IP40	non-illuminated	-	-	3-145-478
22	10A	SPDT	1)	IP40	non-illuminated	-	-	3-145-479
22	100mA	SPDT	1)	IP40	RI	red	24VDC	3-145-527
22	100mA	SPDT	1)	IP40	RI	blue	24VDC	3-145-534
22	100mA	SPDT	1)	IP40	RI	yellow	24VDC	3-145-535
22	100mA	SPDT	1)	IP40	RI	RGB	24VDC	3-145-546
22	100mA	SPDT	1)	IP40	RI DeadFront	RGB	24VDC	3-145-729
22	100mA	SPDT	1)	IP40	RI	red	12VDC	3-145-731
22	100mA	SPDT	1)	IP40	RI	green	12VDC	3-145-742
22	100mA	SPDT	1)	IP40	RI	red	5VDC	3-145-746
22	100mA	SPDT	1)	IP40	RI	green	5VDC	3-145-747
22	5A	SPDT	1)	IP40	RI	blue	5VDC	3-145-749
22	100mA	SPDT	1)	IP40	RI	white	5VDC	3-145-751
22	100mA	SPDT	1)	IP40	PI	blue	-	3-145-777
22	3A	DPDT	3)	IP40	non-illuminated	-	-	3-145-879
22	100mA	SPDT	1)	IP40	AI	RGB	24VDC	3-145-891
22	3A	DPDT	3)	IP40	RI	white	24VDC	3-145-920
30	5A	SPDT	1)	IP40	non-illuminated	-	-	3-145-589
30	5A	SPDT	1)	IP40	RI DeadFront	RGB	24VDC	3-145-657
30	3A	DPDT	3)	IP40	RI	red	24VDC	3-146-043
30	3A	DPDT	3)	IP40	RI	green	24VDC	3-146-044

 Most Popular.

Availability for all products can be searched real-time: <https://www.schurter.com/en/Stock-Check/Stock-Check-SCHURTER>

1) Microswitch for SPDT

2) Subminiature Switch for SPDT

3) Subminiature Switch for DPDT

Packaging unit

10 pcs.

In box or packed in air cushion bags



The nut with gasket and micro switch are enclosed in the box.