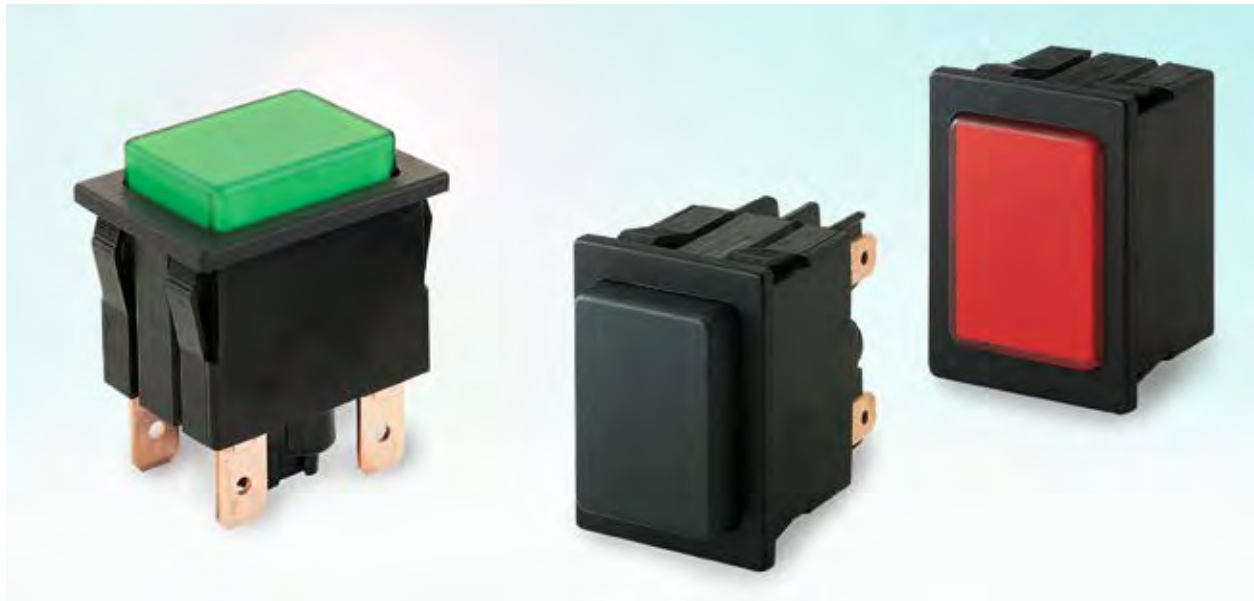




SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC







PRODUCT FEATURES

- Illuminated and non-illuminated pushbutton switches
- Proven jump contact switching system (double interrupting)
- Opening and closing speed independent of the actuating speed
- Product-dependent with external lamp terminal

ON REQUEST


- Other colors
- Other printing variants
- Other terminal types
- Other lamp variants
- Cable assembly


Mechanical life endurance	5E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator housing terminals
	PC (product-dependent) / PA PA / PA glass fiber-reinforced (product-dependent) Cu
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  (product-dependent) / 
Suitable for appliances of protection class II	



SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 single-pole		Lighting voltage (V)	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	16 (4) A 250 V AC	12 (4) A 250 V AC 1E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/6 HP	Terminal type	Terminal description	Contact distance (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)															
1662.0201					o						6.3	≥ 3	Ag		
Normally open contact (SPNO)															
1665.3102	230				o						6.3 / 2 x 4.8	≥ 3	Ag	external lamp terminal	
1662.0101					o						6.3	≥ 3	Ag		o
Changeover switch (SPDT momentary)															
1664.0101						o					4.8	< 3	Ag		






 double-pole		Lighting voltage (V)	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	16 (4) A 250 V AC	12 (4) A 250 V AC 1E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/6 HP	Terminal type	Terminal description	Contact distance (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)															
1660.0201	230				o						6.3	≥ 3	Ag		o
1660.0202	230				o						6.3	≥ 3	Ag		o
1660.3202	230				o						6.3 / 2 x 4.8	≥ 3	Ag	external lamp terminal	
1660.0222	110								o		6.3	≥ 3	Ag		
1661.0220						o	o	o			6.3	≥ 3	Ag		
Normally open contact (DPNO)															
1661.0101					o						6.3	≥ 3	Ag		o
Changeover switch (DPDT momentary)															
1663.0101						o					4.8	< 3	Ag		o

ROTARY SWITCHES
 PUSHBUTTON SWITCHES
 TOGGLE SWITCHES
 SLIDE SWITCHES
 ROTARY SWITCHES
 FOOT SWITCHES
 TACT AND KEY SWITCHES
 MICRO-SIGNAL SWITCHES
 SNAP-ACTION SWITCHES
 MICRO-SIGNAL SWITCHES
 SENSORS
 ECO
 PUSH-IN DRIVE



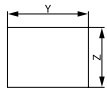
SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 Lamp	Lighting voltage (V)	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	16 (4) A 250 V AC	12 (4) A 250 V AC 1E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/6 HP	Terminal type	Terminal description	Contact distance (mm)	Contact material	Miscellaneous	Stock version
	Lamp													
1667.0101	230									6.3				
1667.0102	230									6.3				

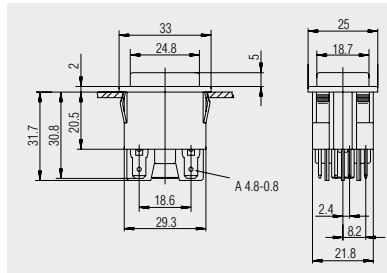



Basic types 1660, 1661 and 1663 double-pole illuminated / non-illuminated

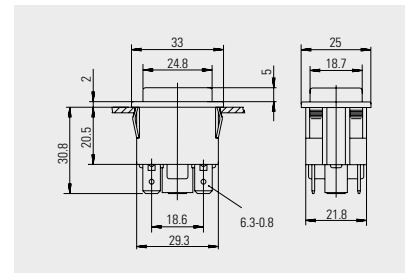



X = Wall thickness

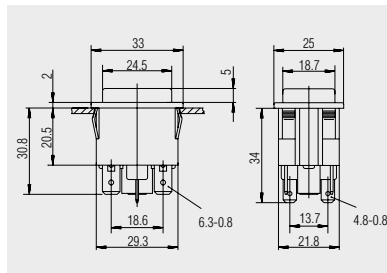
x	y	z
0.75 ... 1.0	30 ^{+0.1}	22.2 ^{+0.2}
1.0 ... 1.5	30.2 ^{+0.1}	22.2 ^{+0.2}
1.5 ... 3.0	30.4 ^{+0.1}	22.2 ^{+0.2}




 Quick-connect terminal 4.8 x 0.8



 Quick-connect terminal 6.3 x 0.8



 Quick-connect terminal 6.3 x 0.8 / 2 x 4.8 x 0.8 with external lamp terminal

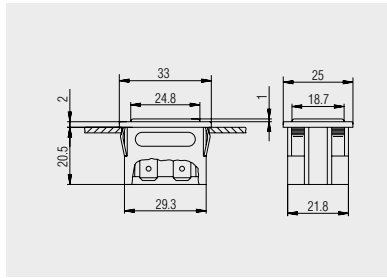


SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

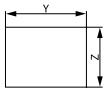
TO 16 (4) A 250 V AC



Basic type 1667
lamp



Quick-connect terminal 6.3 x 0.8

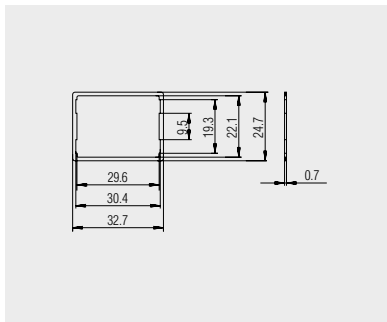


X = Wall thickness

x	y	z
0.75 ... 1.0	30 ^{+0.1}	22.2 ^{+0.2}
1.0 ... 1.5	30.2 ^{+0.1}	22.2 ^{+0.2}
1.5 ... 3.0	30.4 ^{+0.1}	22.2 ^{+0.2}



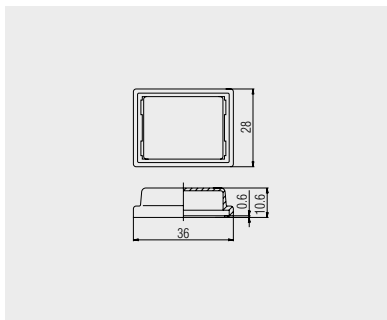
Gasket
340.040.011



Gasket made of EPDM black for sealing between switch and appliance for increased dust and water protection



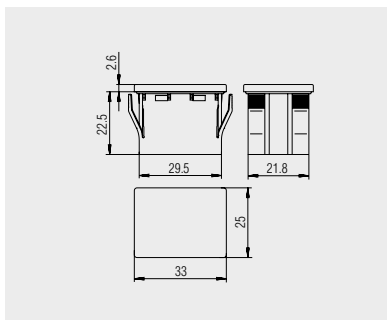
Protection cap
203.201.011



Transparent PVC-protection cap for switches of the basic types 1660, 1662, 1663, 1664, 1665 and 1667. Serves as dust and water protection of the actuation side.



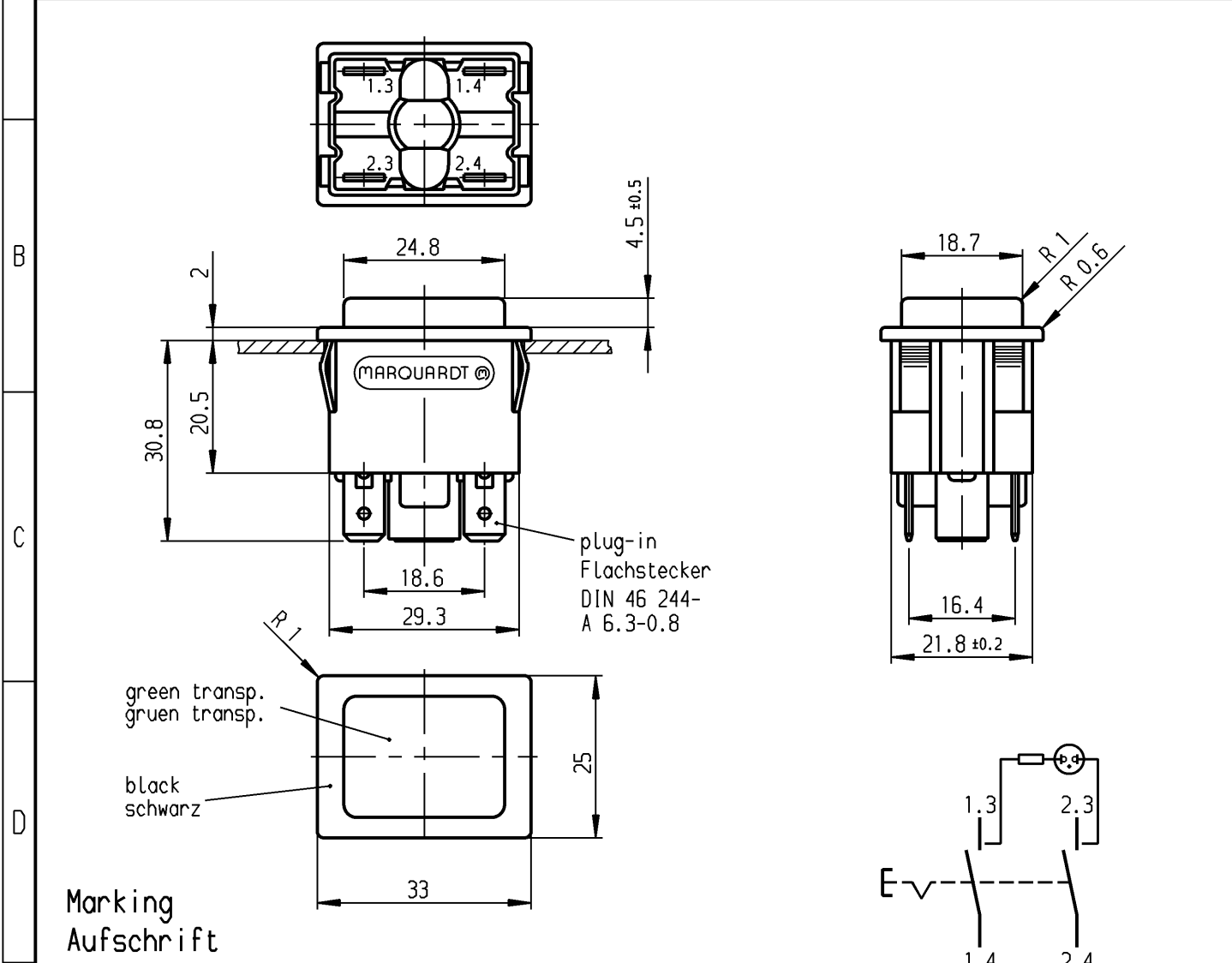
Dummy piece
203.028.013



Dummy piece for size of basic type 1667 made of PA with housing and cover in black and with mounted gasket (340.040.011) for dust and water protection.

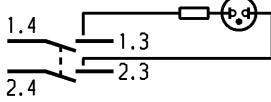
ROCKER SWITCHES
PUSHBUTTON SWITCHES
TOGGLE SWITCHES
SLIDE SWITCHES
ROTARY SWITCHES
FOOT SWITCHES
TACT AND KEY SWITCHES
SMAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES
SENSORS
ECO
PUSH N' DRIVE

	1	2	3	4	
A	recommended cut-out for snap-in fixing (edge opposite to snap-in direction) Empfohlener Ausschnitt für Rastbefestigung (Grat gegenüber Bestückungsseite)		wall thickness Wanddicke	length of cut-out Ausschnittlänge	width of cut-out Ausschnittbreite
			0.75 to / bis 1	30 +0.1	22.2 +0.2
			>1 to / bis 1.5	30.2 +0.1	22.2 +0.2
			>1.5 to / bis 3	30.4 +0.1	22.2 +0.2



**Marking
Aufschrift**

MARQUARDT ©
1660.
16(4)/250~ T85/55



date code of manufacture:
year/week acc. to DIN EN 60062
Herstelljahr/-woche nach DIN EN 60062

**DPST
Ausschalter 2-polig**

neon lamp with R_V for 230 V AC
Glimmlampe mit R_V für 230 V~

total travel 4 ±0.4
Gesamtweg

suitable for appliances of class II
Für Geräte der Klasse II geeignet

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Für Form und Lage FOR SHAPE AND LOC.		Allgemeintoleranzen UNTOLERANCED DIMENSIONS		Pause COPY		Blatt SHEET		Typ K		Zeichn./DRAWING NO. 1660.0202		Index	
Für Winkel FOR ANGLE ± 2°		PROJECTION		Abmasse und Nennmassbereiche Angaben in mm		Original DIN A4		Maßstab SCALE 1:1		Appliance Switch		Geräteschalter	
Ausg. / ISSUE		Änderung / REVISION		gez. / DRAWN BY		0 10 20 30 mm		CAD Medusa		Z		MARQUARDT	
c		g		28075		12.10.99		mut		gez./DRAWN BY 15.08.98		bb	
b		f		26325		15.08.98		bb		gepr./CHECKED BY		rs	
a		e		23500		22.08.95		rs		Ersatz für/REPLACEMENT OF		Zchnq.gL.Nr.v.18.08.82	
h		32547		08.05.02		sig		d		Ersatz für/REPLACEMENT OF		Zchnq.gL.Nr.v.18.08.82	
Ausg. / ISSUE		Änderung / REVISION		gez. / DRAWN BY		Ausg. / ISSUE		Änderung / REVISION		gez. / DRAWN BY		MARQUARDT	
												Marquardt GmbH, D-78604 Rietheim-Weilheim	