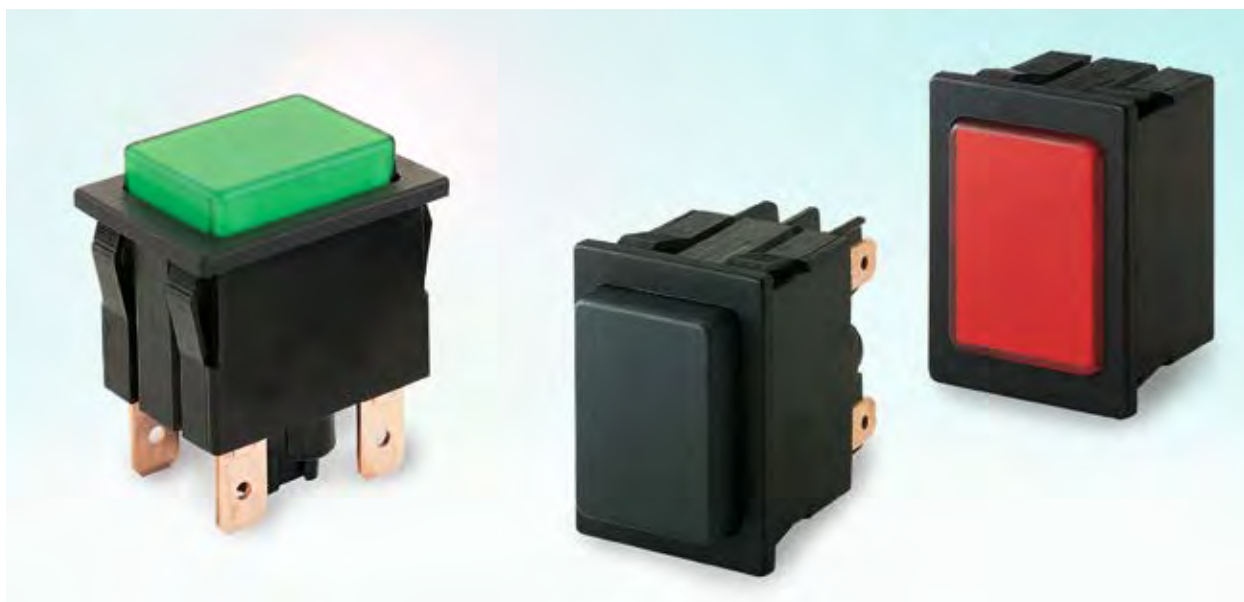




SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



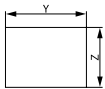
SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

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				

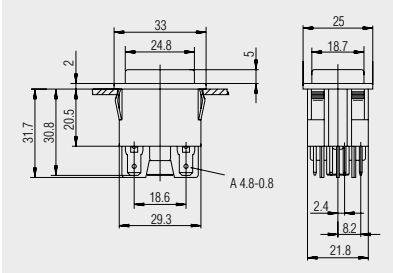


Basic types 1660, 1661 and 1663 double-pole illuminated / non-illuminated

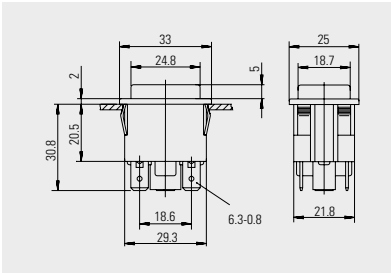


X = Wall thickness

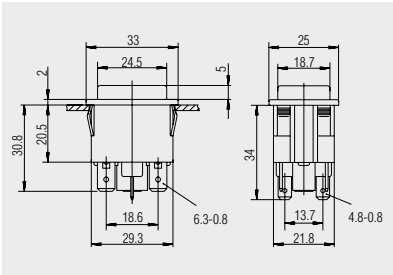
x	y	z
0.75 ... 1.0	30 ^{+0.1}	22.2 ^{+0.2}
1.0 ... 1.5	30.2 ^{+0.1}	22.2 ^{+0.2}
1.5 ... 3.0	30.4 ^{+0.1}	22.2 ^{+0.2}



 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

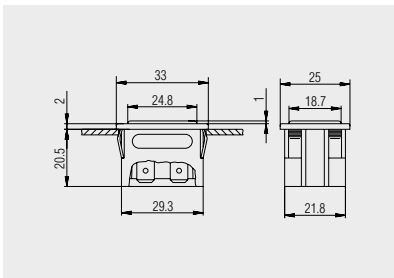


SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

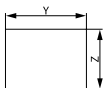
TO 16 (4) A 250 V AC



Basic type 1667
lamp



Quick-connect terminal 6.3 x 0.8

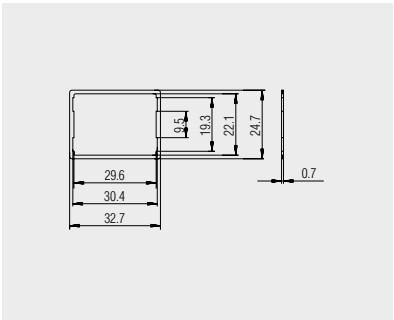


X = Wall thickness

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}



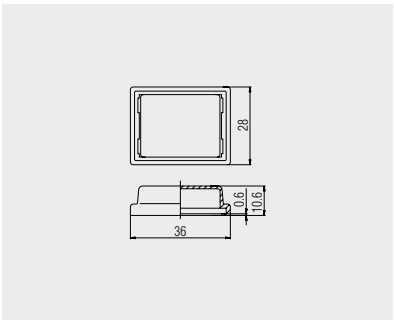
Gasket
340.040.011



Gasket made of EPDM black for seal-
ing between switch and appliance for
increased dust and water protection



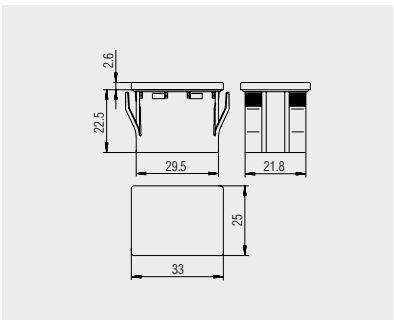
Protection cap
203.201.011



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

SNAP-ACTION SWITCHES

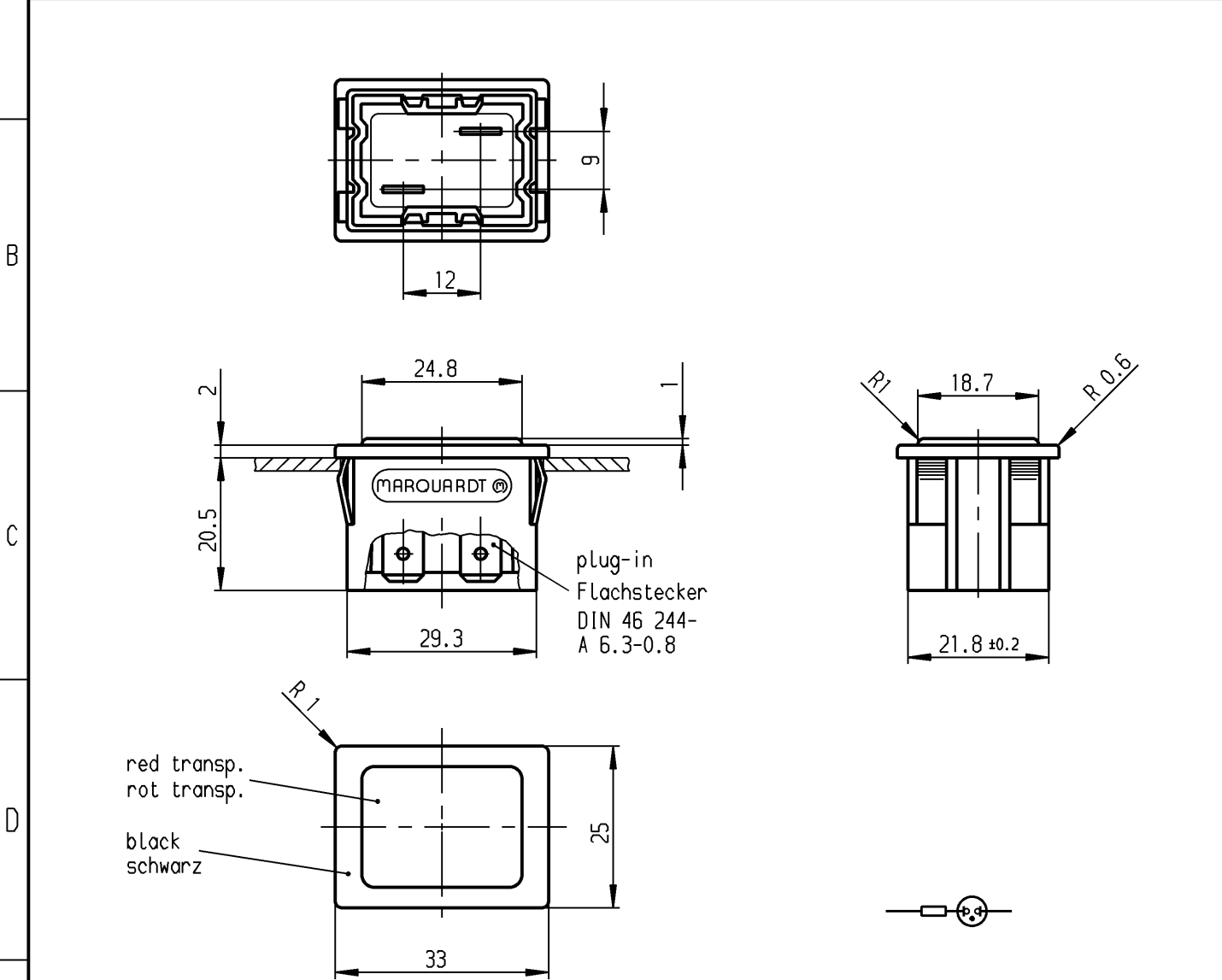
MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

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



Marking
Aufschrift

MARQUARDT ©
1667.
230V~ T85°C

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

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

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

Diese Unterlage ist geistiges Eigentum der Marquardt GmbH. Schutzvermerk nach DIN 34 beachten. Copyright reserved.

Für Form und Lage FOR SHAPE AND LOC.				ALLgemeintoleranzen UNTOLERANCED DIMENSIONS				Pause COPY		Blatt SHEET		Typ K	Zeichn./DRAWING NO. 1667.0101	Index																		
Für Winkel FOR ANGLE ± 2°				PROJECTION 		Abmasse und Nennmassbereiche Angaben in mm ALL DIMENSIONS ARE IN MILLIMETRES		<table><tr><td></td><td>Laengen LENGTH</td><td>Radien RADI</td></tr><tr><td>0-6</td><td>± 0.2</td><td>± 0.2</td></tr><tr><td>>6-15</td><td>± 0.4</td><td>±</td></tr><tr><td>>15-30</td><td>± 0.4</td><td>±</td></tr><tr><td>>30-70</td><td>± 0.6</td><td rowspan="3">±</td></tr><tr><td>>70-120</td><td>±</td></tr><tr><td>>120-200</td><td>±</td></tr></table>			Laengen LENGTH				Radien RADI	0-6	± 0.2	± 0.2	>6-15	± 0.4	±	>15-30	± 0.4	±	>30-70	± 0.6	±	>70-120	±	>120-200	±	Original DIN A4
	Laengen LENGTH	Radien RADI																														
0-6	± 0.2	± 0.2																														
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>70-120	±																															
>120-200	±																															
												Pilot Light Leuchte																				
c		22752		04.05.94 pa		g		CAD Medusa		Z																						
b						f		gez./DRAWN BY 06.06.02 sig				MARQUARDT Marquardt GmbH, D-78604 Rietheim-Weilheim																				
a						e		gepr./CHECKED BY sig																								
						d		32547		06.06.02 sig																						
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										Ersatz für/REPLACEMENT OF Zchnng.gL.Nr.v.07.07.83																						