

Selection table for accessories

Holders for hand-held enabling switches																
		Actuator for safety switches NZ.VZ and TZ with separate safety function														
		Accessories for installation in enabling switch housing G3 and HBE														
		Key-operated switch 2-stage														
		Illuminated pushbutton														
		Selector switch 12-stage														
		EMERGENCY STOP device														
		Plug connectors														
						BD4									3-pin + PE	
							SS4								3-pin + PE	
								C16-1							6-pin + PE	
									SD12						11-pin + PE	
										BS12					11-pin + PE	
											RC12				12-pin	
												RC17			17-pin	
													VP19		19-pin	
														UT23	23-pin	
															TB24 24-pin	
Holders	Actuator	Accessories				Plug connectors										Page
		Key-operated switch	Illuminated push-button	Selector switch	EMERGENCY STOP	BD4	SS4	C16-1	SD12	BS12	RC12	RC17	VP19	UT23	TB24	
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Holders for hand-held enabling switches/actuator for safety switches NZ.VZ and TZ with separate safety function

- ▶ **Magnetic holder**
- ▶ **Screw holder**
- ▶ **Screw holder with cable hook**
- ▶ **Actuator for mounting on the hand-held enabling switch**

Magnetic holder for housing G1

The enabling switches can be attached at any time to any part of the machine due to the magnets fastened to the holder. In this way the enabling switch can be positioned in the activity area as necessary.

Screw holder for housing G1

The holder can be securely fastened to parts of the machine with a wall thickness of max. 15 mm using two screws.

Screw holder for housing G1 with cable hook

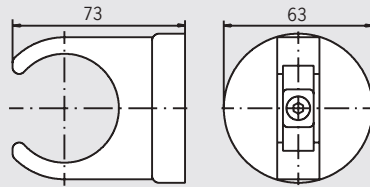
A holder with an additional cable hook for hanging a wound-up cable.

Actuator for safety switch

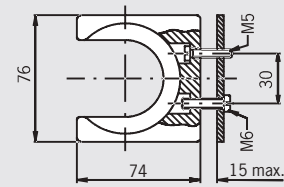
Suitable for fitting, e.g. to the hand-held enabling switch kit. Safe position sampling of the enabling switch can be achieved by fitting the actuator and the use of an appropriate safety switch (NZ.VZ or TZ). By suitable integration of this combination, the signal from the safety switch can be used, e.g., as an operating mode selector switch when the actuator is removed (removal of the enabling switch). Suitable for the kit ZSA.

Magnetic holder

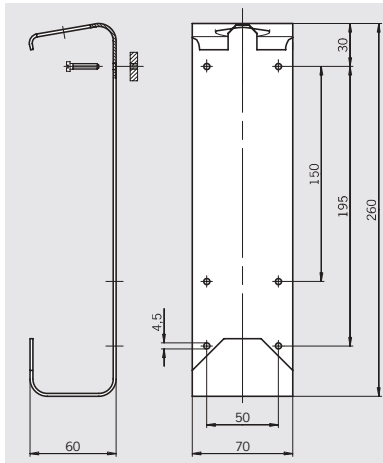
Dimension drawings



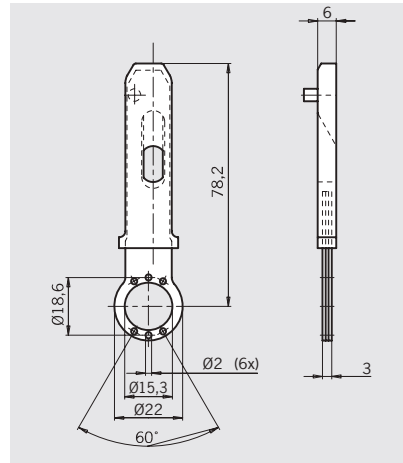
Screw holder



Screw holder with cable hook



Actuator for safety switches series NZ.VZ and TZ



Ordering table

Item	Version	
Magnetic holder		059 340 Magnetic holder
	M5 x 25	052 406 Holder complete
Screw holder	With cable hook	047 820 Cable holder
	M4 x 20	084 833 Actuator-Z-G-C1932

Accessories for installation in enabling switch housing G3 and HBE

- ▶ Key-operated switch 2-stage
- ▶ Illuminated pushbutton
- ▶ Selector switch 12-stage
- ▶ EMERGENCY STOP device

Key-operated switch 2-stage

As an option the key can be removed in both positions or in only one position. Replacement keys for the key-operated switch are available if required. Depending on the application, the key-operated switch can be used to activate the enabling switch or as an operating mode selector switch.

Illuminated pushbutton

The illuminated pushbutton is equipped with a white lamp and a transparent cover. Additional functions can be run directly at the enabling switch using the button.

EMERGENCY STOP device

The emergency stop switch can be fitted with two switching elements (available separately), for redundant evaluation. With the additional EMERGENCY STOP device, an EMERGENCY STOP function can be initiated directly at the enabling switch. At least one switching element must be ordered at the same time. Red emergency stop button.

Selector switch 12-stage

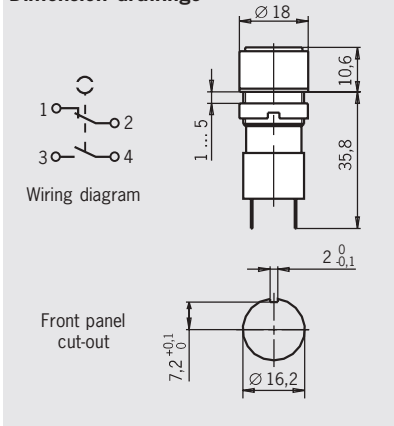
The 12-stage, binary coded selector switch is supplied complete with rotary knob with position indicator. As required the 2 - 12 adjustable detent positions can, e.g. be used for axis, speed or range selection.

Detent position	Output			
	8	4	2	1
1	0	0	0	0
2	0	0	0	1
3	0	0	1	0
4	0	0	1	1
5	0	1	0	0
6	0	1	0	1
7	0	1	1	0
8	0	1	1	1
9	1	0	0	0
10	1	0	0	1
11	1	0	1	0
12	1	0	1	1

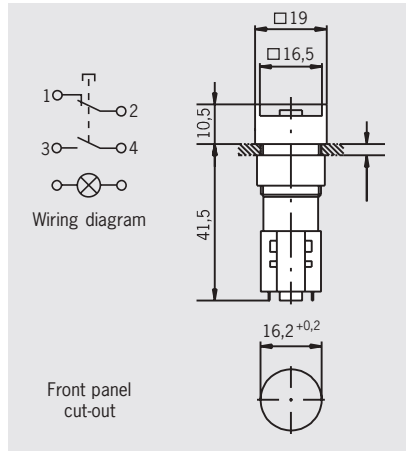
All outputs are open between the detent positions

Key-operated switch 2-stage

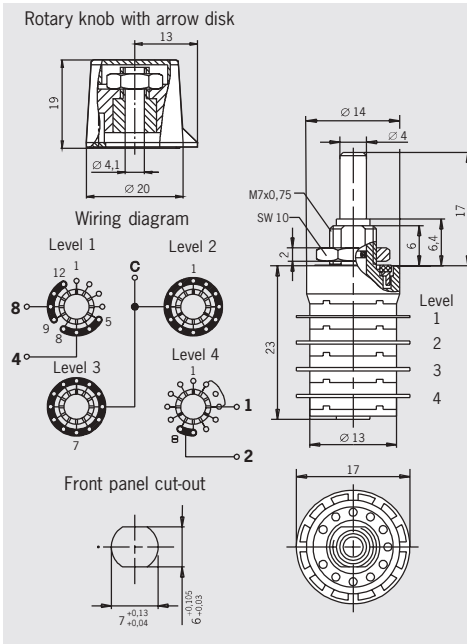
Dimension drawings



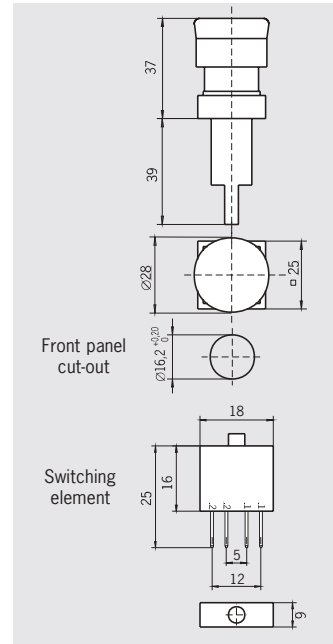
Illuminated pushbutton



Selector switch 12-stage



EMERGENCY STOP device



Ordering table

Item	Version	
Key-operated switch	Removal position: 0 1 NC + 1 NO	072 604 Key-operated switch
	Removal position: 0 + 1 1 NC + 1 NO	076 930 Key-operated switch removal position 0/1
Replacement key for key-operated switches	-	075 387 Key for key-operated switch
Illuminated pushbutton	Installation \varnothing 16.2 mm	070 520 Illuminated pushbutton complete
Selector switch	12-stage	052 874 Selector switch with rotary knob
EMERGENCY STOP device	Installation \varnothing 28 mm for max. 2 switching elements	083 637 Emergency stop actuating element
Switching element for EMERGENCY STOP device	1 NC \ominus	083 638 Emergency stop switching element 1 NC \ominus

Plug connectors

- ▶ Female flange connector BD4
- ▶ Male connector SS4
- ▶ Female connector C16-1
- ▶ Male flange connector SD12
- ▶ Female connector BS12
- ▶ Extension cable

Female flange connector BD4
Female flange connector for male connector SS4 on the enabling switch.

Male connector SS4
Male connector for enabling switch for connection to safety switch TZ...C1662 (see catalog NZ/TZ).

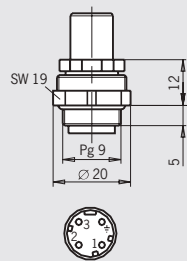
Female connector C16-1¹⁾
Female connector for hand-held enabling switches.

Male flange connector SD12
Male connector for female connector BS12. For the connection of hand-held and HBE enabling switches.

Female connector BS12
Female connector for male flange connector SD12. For connection, e.g. to enabling switch.

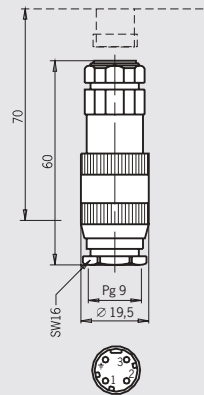
Female flange connector BD4 3-pin + PE

Dimension drawings



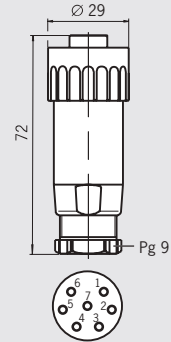
View of connection side, socket

Male connector SS4 3-pin + PE



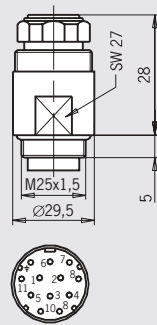
View of connection side, plug

Female connector C16-1 6-pin + PE



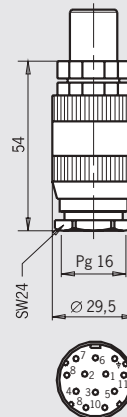
View of connection side, socket

Male flange connector SD12 11-pin + PE



View of connection side, socket

Female connector BS12 11-pin + PE



View of connection side, socket

Ordering table

Item	Connection	Version	
BD4 3-pin + PE	Soldered contact	Female flange connector for male connector SS4 on the enabling switch	002 786 BD4
SS4 3-pin + PE	Soldered contact	Male connector for flange connector BD4 (e.g. TZ...C1662)	002 787 SS4
C16-1 6-pin + PE	Crimp contact ¹⁾	Female connector	043 861 Cable socket 6+PE
SD12 11-pin + PE	Soldered contact	Male flange connector for female connector BS12 on the enabling switch	085 648 SD12-M
BS12 11-pin + PE	Soldered contact	Female connector, straight, for flange connector SD12	002 763 BS12
BS12 11-pin + PE	-	Extension cable 5 m	071 362 BS12
	-	Extension cable 10 m	079 835 BS12

For information on crimp contacts see page 39.

1) Crimp contacts are included.

Plug connectors

- ▶ Female flange connector RC12
- ▶ Male connector RC12
- ▶ Dummy plug RC12
- ▶ Female flange connector RC17
- ▶ Male connector RC17

Female flange connector RC12¹⁾
For front panel mounting for connection of hand-held and P20 enabling switch. Fitted with soldered contacts. Rubber seal included.

Male connector RC12¹⁾
For connection, e.g. to enabling switches.

Dummy plug RC12¹⁾
For covering the flange connector RC12. As an option, bridges can be fitted to the individual contacts at the customer, or a pre-wired version (coded) used.
Coding: bridge from pin 1 to pin 2 and from pin 9 to pin 10.

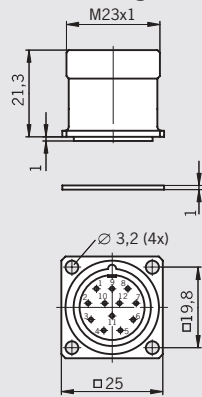
Flange connector RC17¹⁾
For front panel mounting for connection of enabling switches. Rubber seal included. Fitted with soldered contacts.

Male connector RC17¹⁾
For connection, e.g. to enabling switches.

Dummy plug RC17¹⁾
For covering the flange connector RC17. As an option, bridges can be fitted to the individual contacts at the customer, or a pre-wired version (coded) used.

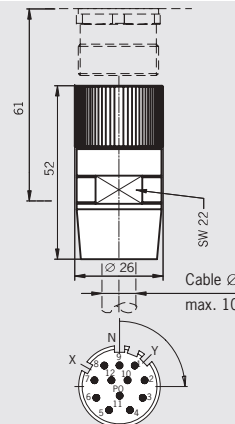
Female flange connector RC12
12-pin

Dimension drawings



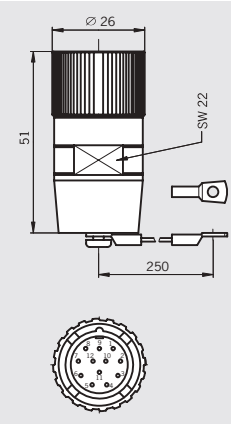
View of connection side, socket

Male connector RC12
12-pin



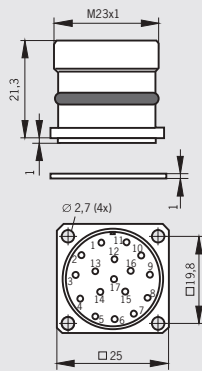
View of connection side, plug

Dummy plug RC12
12-pin



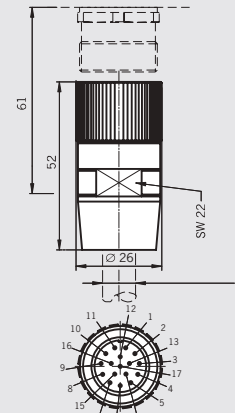
View of connection side, plug

Female flange connector RC17
17-pin



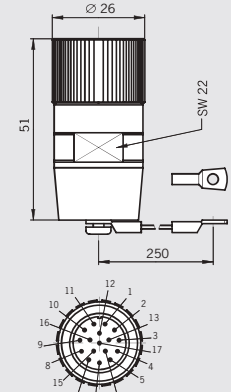
View of connection side, socket

Male connector RC17
17-pin



View of connection side, plug

Dummy plug RC17
17-pin



View of connection side, plug

Ordering table

Item	Connection	Version	
RC12 12-pin	Soldered connection	Female flange connector	073 290 Flange connector 12-pin
	Crimp contact ¹⁾	Male connector	073 294 Plug connector 12-pin
	Crimp contact ¹⁾	Dummy plug (with bridges) e.g. in combination with ZS...C1770	073 291 Dummy plug complete 12-pin
	Crimp contact ¹⁾	Dummy plug (without bridges)	073 293 Dummy plug 12-pin
RC17 17-pin	Soldered connection	Female flange connector	077 502 Flange connector 17-pin17
	Crimp contact ¹⁾	Male connector	096 481 Plug connector 17-pin
	Crimp contact ¹⁾	Dummy plug (without bridges)	096 159 Dummy plug 17-pin

For information on crimp contacts see page 39.
1) Crimp contacts are included.

Plug connectors

- ▶ Female flange connector VP19
- ▶ Female flange connector UT23
- ▶ Dummy plug UT23 with chain
- ▶ Female flange connector TB24
- ▶ Dummy plug TB24 with chain

Female flange connector VP19
Female flange connector for male connector VP19 on the enabling switch.

Dummy plug VP19 with chain
Dummy plug for female flange connector VP19.

Female flange connector UT23 ¹⁾
Female flange connector for plug UT23 on enabling switch ...C1715.

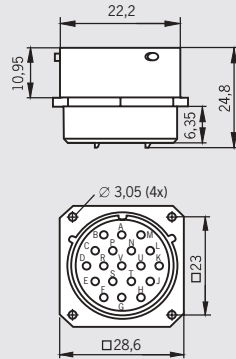
Dummy plug UT23 with chain ¹⁾
Dummy plug for female flange connector UT23.

Female flange connector TB24 ¹⁾
Female flange connector for plug TB24 on enabling switch 072851.

Dummy plug TB24 with chain ¹⁾
Dummy plug for female flange connector TB24.

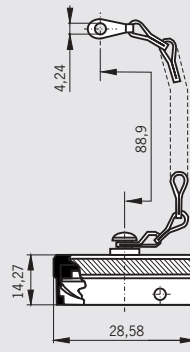
Female flange connector VP19 19-pin

Dimension drawings

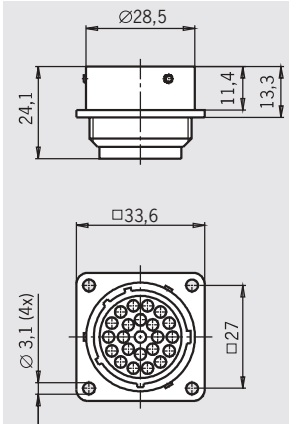


View of connection side, socket

Dummy plug VP19 with chain

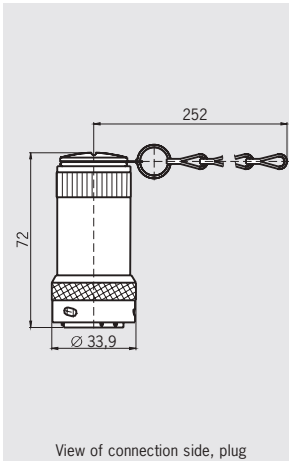


Female flange connector UT23 23-pin



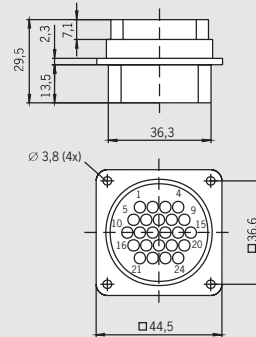
View of connection side, socket

Dummy plug UT23 with chain



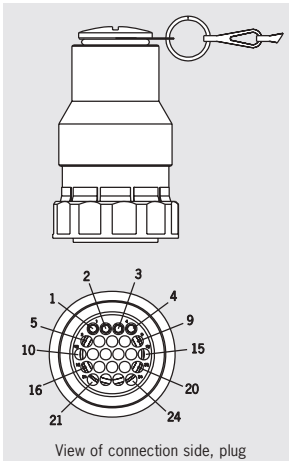
View of connection side, plug

Female flange connector TB24 24-pin



View of connection side, socket

Dummy plug TB24 with chain



View of connection side, plug

Ordering table

Item	Connection	Version	
VP19 19-pin		Female flange connector	073 296 Female flange connector 19-pin
		Dummy plug with chain	073 297 Dummy plug with chain
UT23 23-pin	Crimp contacts ¹⁾	Female flange connector for enabling switch ..C1715	074 384 Flange connector / 23-pin / metal version
		Dummy plug with chain (3 bridges included)	083 457 Short-circuit plug with chain
TB24 24-pin	Crimp contacts ¹⁾	Female flange connector for enabling switch 072 851 incl. dummy plug with chain (with bridges)	072 937 Connection box and short-circuit plug

For information on crimp contacts see page 39.

1) Crimp contacts are included.

List of plug connector suppliers

We provide no guarantee for the completeness and correctness of the ordering data given. The data was valid in October 2004. The related manufacturers reserve the right to make changes without notice. The plug connectors and accessories listed are also available from other manufacturers.

► Plug connectors and accessories

Item	Version	Manufacturer's designation	
SVM5 5-pin	Female connector M12	99-0436-57-05 Cable socket	Binder www.binder-connector.de
	Female flange connector M12	09-3442-700-05 Flange connector with wires	
	Dummy plug M12	08-2425-000-000 Protective cap for socket with retaining strap	
CE5 3-pin + N + PE	Mating connector (socket)	CEE plug as per CEE standard	
C16-1 6-pin + PE	Female flange connector	T3107 500 Female receptacle	Amphenol-Tuchel www.amphenol-tuchel.com
	Socket crimp contacts for C16-1, VPE 100 pcs.	VN02 016 0002 (1) Single contact, silver, 0.5-1.5 mm ²	
	Dummy plug	T6483 000 Protective cap for female receptacle	
MR 7, 8, 9, 10 and 12-pin	Straight female connector (7-pin), pre-assembled for built-in connector MR7	MIN-7FPX-.. Female plugs with cable	MENCOM www.mencomcorp.com
	Straight female connector (8-pin), pre-assembled for built-in connector MR8	MIN-8FPX-.. Female plugs with cable	
	Straight female plug (9-pin), pre-assembled for built-in connector MR9	MIN-9FP-.. Female plugs with cable	
	Straight female connector (10-pin), pre-assembled for built-in connector MR10	MIN-10FP-.. Female plugs with cable	
	Straight female connector (12-pin), pre-assembled for built-in connector MR12	MIN-12FP-.. Female plugs with cable	
HAN10 10-pin + PE	Flange connector 1 cable exit	19 20 010 0251 Socket housing 1 cable exit	Harting www.harting.com
	Socket contacts (installation for flange connector)	09 20 010 3101 Socket contact insert crimp connection	
	Socket contacts for crimping	09 33 000 6220 Socket crimp contacts 0.5 mm ²	
	Dummy plug	09 20 010 5425 Cover	
RC17-Y coded 17-pin	Female flange connector, can be soldered to male connector RC17Y	RC-17S1Y122000 Flange plug connector 17-pin	Continers www.continers.com

► Crimp and extraction tools

For plug connector	Function	Manufacturer's designation	
SR6 and SR11	Crimp tool	932 507-001 XCZ 0700	Hirschmann www.hirschmann.com
	Extraction tool	931 812-001 XWA 164	
C16-1	Crimp tool	TA0500 + TA0000163 + TA0002016001 Crimp pliers, jaws and contact receptacle	Amphenol-Tuchel www.amphenol-tuchel.com
	Extraction tool	FG 0300 1461 Extraction tool	
RC12	Crimp tool	RC-Z 2378 Crimp pliers for machined contacts	Continers www.continers.com
	Removal tool	RC-Z 2097 Extraction tool/insertion tool	
RC18	Crimp tool	RC-Z 2378 Crimp pliers for machined contacts	Continers www.continers.com
	Extraction tool	RC-Z 2274 Extraction tool	
VP19	Crimp tool	T98143 DAK 83S-30 / 11-7576T3 Insertion tool	Liton/Veam www.litonveam.com
	Extraction tool	46592-MT50 / 11-7576T3 Removal tool	
UT23	Crimp tool	Y16RCM Crimping tool for machined contacts	Burndy www.burndy.com
	Extraction tool	RX2025GE1 Extraction tool	
TB24	Crimp tool	WT10-04 Crimp tool	Thomas & Betts www.tbts.com
	Extraction tool	TRT16 Contact removal tool	



Key-operated switch

Parameter	Value	Unit
Housing material	PA black	
Ambient temperature	-25 to + 70	°C
Degree of protection, front (installed)	IP 65	
Switching principle	Slow-action contact element	
Switching element	1 x NC + 1 x NO	
Max. switching current	250	mA
Switching voltage	30	V
Contact resistance	≤ 200	mΩ
Connection	Tinned circuit board connection	

Selector switch

Parameter	Value	Unit
Degree of protection, front (installed)	IP 65	
Single-hole bushing mounting	M7 x 0.75	
Detent	Max. 12, stop can be adjusted as required from 2 to 12 detent positions	
Output code	Binary-coded	
Max. switching current	0.5	A
Max. switching voltage	AC 115 V, DC 24 V on installation in P2 or HB.. housing	
Max. breaking capacity	10	VA
Contact resistance	≤ 6	mΩ
Connection	Soldered connection	

Illuminated pushbutton

Parameter	Value	Unit
Housing material	PA6 black	
Cover material	PC, transparent	
Ambient temperature	-25 to +70	°C
Degree of protection, front (installed)	IP 65	
Switching principle	Snap-action contact element	
Switching element	NC + NO	
Max. switching current	4	A
Switching voltage	250 V, 12 ... 24 V on installation in P2 or HB.. housing	V
Contact resistance	≤ 200	mΩ
Connection	Soldered connection	
Lighting	Incandescent lamp, white, 21 mA 24 V	

Emergency stop switch

Parameter	Value	Unit
Color of actuating head	Red	
Color of bottom shell	Yellow	
Ambient temperature	-25 to +60	°C
Max. number of switching elements	2	
Degree of protection	IP 65	

Emergency stop switching element

Parameter	Value	Unit
Contact element	1 x positively driven contact	
Utilization category according to IEC 947-5-1	DC-13 U _e 24 V I _e 3 A	
Connection	Soldered connection	

Plug connector series SS4 and BD4

Parameter	Value	Unit
Housing material	Brass matt chromium plated	
Number of pins	4 (3 + PE)	
Cable diameter	6 - 8	mm
Nominal voltage max.	250	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 67	
Connection	Soldered connections 1.0 mm ²	

Plug connector series C16-1

Parameter	Value	Unit
Housing material	Polyamide 6.6	
Number of pins	7 (6 + PE)	
Cable diameter max.	9.5	mm
Nominal voltage max.	230	V
Degree of protection according to IEC 60529 (inserted)	IP 67	
Connection	Crimp contacts 0.5 - 1.5 mm ²	

Plug connector series BS12

Parameter	Value	Unit
Housing material	Brass matt chromium plated	
Number of pins	12 (11 + PE)	
Cable diameter	12 - 14	mm
Nominal voltage max.	250	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 67	
Connection	Soldered connections 1.0 mm ²	

Plug connector series RC12

Parameter	Value	Unit
Housing material	Metal	
Number of pins	12 (screen on the housing)	
	Male connector	Flange connector
Cable diameter max.	10	mm
Connection	Crimp contacts 0.14 - 0.56 mm ²	Soldered connections 1.0 mm ²
Nominal voltage max.	230	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 67	

Plug connector series RC17

Parameter	Value	Unit
Housing material	Metal	
Number of pins	17 (screen on the housing)	
	Male connector	Flange connector
Cable diameter max.	10	mm
Connection	Crimp contacts 0.14 - 0.56 mm ²	Soldered connections 1.0 mm ²
Nominal voltage max.	230	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 67	

Plug connector series VP19

Parameter	Value	Unit
Housing material	Metal	
Number of pins	19	
Nominal voltage max.	500	V AC
Degree of protection according to IEC 60529 (inserted)	IP 65	
Connection	Crimp contacts 1.0 mm ²	

Plug connector series UT23

Parameter	Value	Unit
Housing material	Metal	
Number of pins	23	
Nominal voltage max.	230	V AC
Degree of protection according to IEC 60529 (inserted)	IP 67	
Connection	Crimp contacts 0.3 - 0.5 mm ²	

Plug connector series TB24

Parameter	Value	Unit
Housing material	Plastic	
Number of pins	24	
Nominal voltage max.	230	V AC
Degree of protection according to IEC 60529 (inserted)	IP 65	
Connection	Crimp contacts 0.25 - 0.5 mm ²	