

## Selection table for accessories

Holders for hand-held enabling switches																
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		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

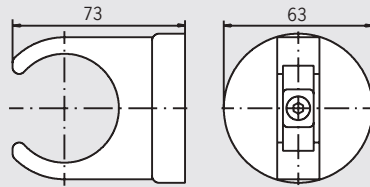
A holder with an additional cable hook for hanging a wound-up cable.

### Actuator for safety switch

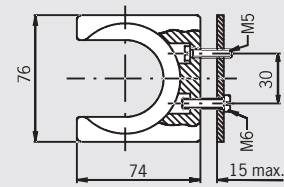
Suitable for fitting, e.g. to the hand-held enabling switch kit. Safe position sampling of the enabling switch can be achieved by fitting the actuator and the use of an appropriate safety switch (NZ.VZ or TZ). By suitable integration of this combination, the signal from the safety switch can be used,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

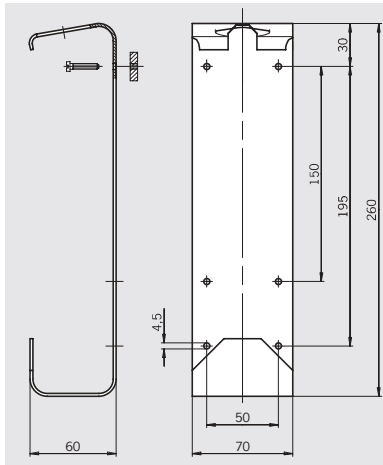
#### Dimension drawings



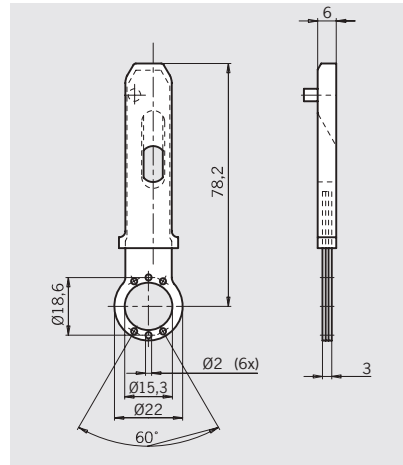
### Screw holder



### Screw holder with cable hook



### Actuator for safety switches series NZ.VZ and TZ



### Ordering table

Item	Version	
Magnetic holder		<b>059 340</b> Magnetic holder
	M5 x 25	<b>052 406</b> Holder complete
Screw holder	With cable hook	<b>047 820</b> Cable holder
	M4 x 20	<b>084 833</b> 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

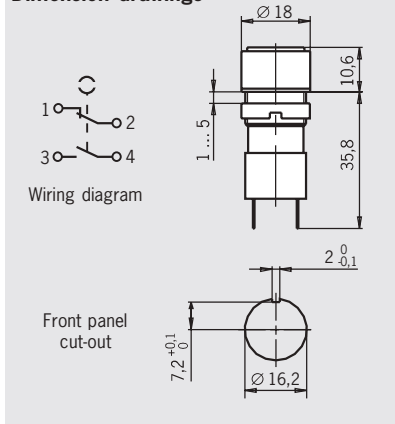
The 12-stage, binary coded selector switch is supplied complete with rotary knob with position indicator. As required the 2 - 12 adjustable detent positions can, e.g. be used for axis, speed or range selection.

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

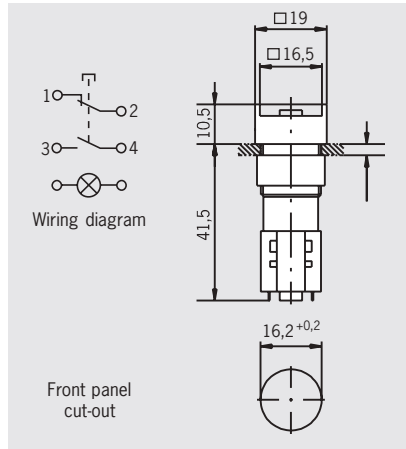
All outputs are open between the detent positions

### Key-operated switch 2-stage

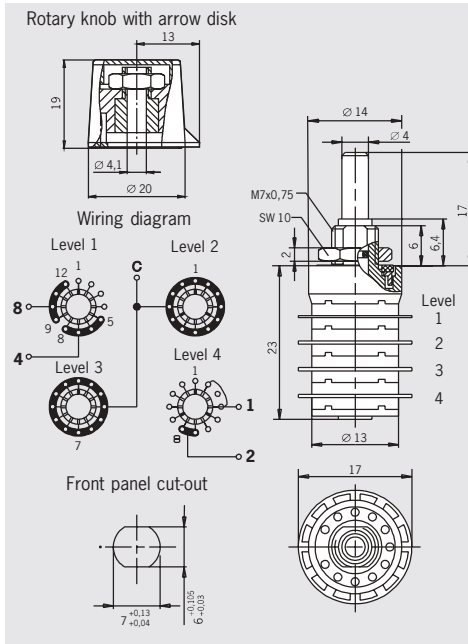
#### Dimension drawings



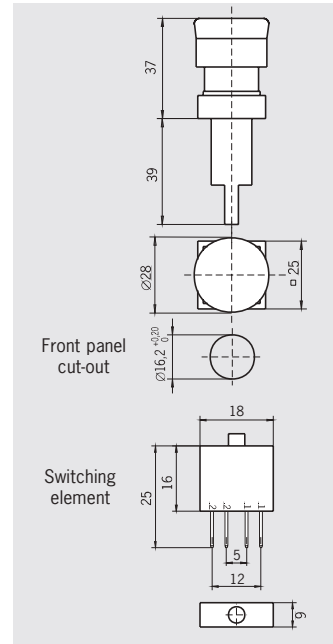
### Illuminated pushbutton



### Selector switch 12-stage



### EMERGENCY STOP device



### Ordering table

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

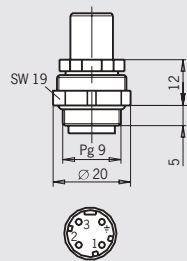
**Female connector C16-1**<sup>1)</sup>  
Female connector for hand-held enabling switches.

**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.

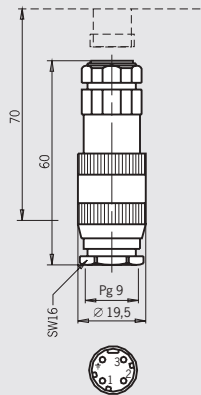
### Female flange connector BD4 3-pin + PE

#### Dimension drawings



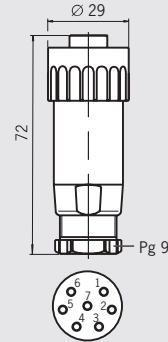
View of connection side, socket

### Male connector SS4 3-pin + PE



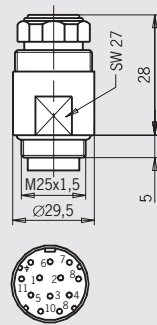
View of connection side, plug

### Female connector C16-1 6-pin + PE



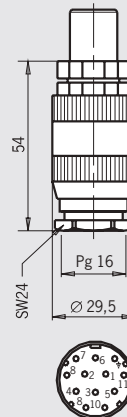
View of connection side, socket

### 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	
<b>BD4</b> 3-pin + PE	Soldered contact	Female flange connector for male connector SS4 on the enabling switch	<b>002 786</b> BD4
<b>SS4</b> 3-pin + PE	Soldered contact	Male connector for flange connector BD4 (e.g. TZ...C1662)	<b>002 787</b> SS4
<b>C16-1</b> 6-pin + PE	Crimp contact <sup>1)</sup>	Female connector	<b>043 861</b> Cable socket 6+PE
<b>SD12</b> 11-pin + PE	Soldered contact	Male flange connector for female connector BS12 on the enabling switch	<b>085 648</b> SD12-M
<b>BS12</b> 11-pin + PE	Soldered contact	Female connector, straight, for flange connector SD12	<b>002 763</b> BS12
<b>BS12</b> 11-pin + PE	-	Extension cable 5 m	<b>071 362</b> BS12
	-	Extension cable 10 m	<b>079 835</b> 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 RC12<sup>1)</sup>**  
For front panel mounting for connection of hand-held and P20 enabling switch. Fitted with soldered contacts. Rubber seal included.

**Male connector RC12<sup>1)</sup>**  
For connection, e.g. to enabling switches.

**Dummy plug RC12<sup>1)</sup>**  
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.

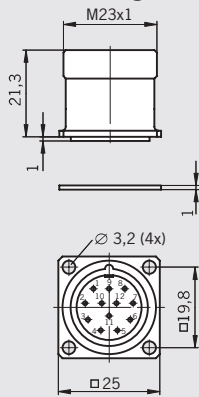
**Flange connector RC17<sup>1)</sup>**  
For front panel mounting for connection of enabling switches. Rubber seal included. Fitted with soldered contacts.

**Male connector RC17<sup>1)</sup>**  
For connection, e.g. to enabling switches.

**Dummy plug RC17<sup>1)</sup>**  
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.

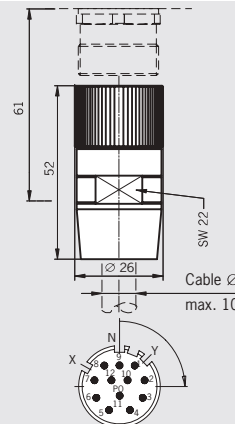
**Female flange connector RC12**  
12-pin

**Dimension drawings**



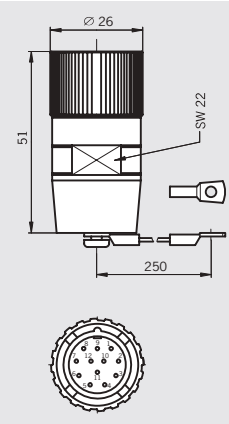
View of connection side, socket

**Male connector RC12**  
12-pin



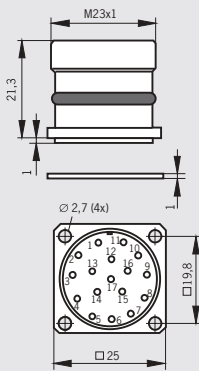
View of connection side, plug

**Dummy plug RC12**  
12-pin



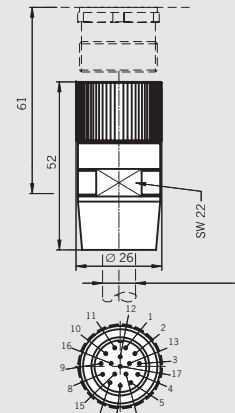
View of connection side, plug

**Female flange connector RC17**  
17-pin



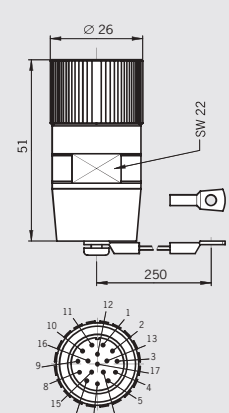
View of connection side, socket

**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	<b>073 290</b> Flange connector 12-pin
	Crimp contact <sup>1)</sup>	Male connector	<b>073 294</b> Plug connector 12-pin
	Crimp contact <sup>1)</sup>	Dummy plug (with bridges) e.g. in combination with ZS...C1770	<b>073 291</b> Dummy plug complete 12-pin
	Crimp contact <sup>1)</sup>	Dummy plug (without bridges)	<b>073 293</b> Dummy plug 12-pin
RC17 17-pin	Soldered connection	Female flange connector	<b>077 502</b> Flange connector 17-pin17
	Crimp contact <sup>1)</sup>	Male connector	<b>096 481</b> Plug connector 17-pin
	Crimp contact <sup>1)</sup>	Dummy plug (without bridges)	<b>096 159</b> 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** <sup>1)</sup>  
Female flange connector for plug UT23 on enabling switch ...C1715.

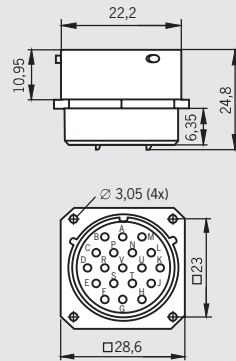
**Dummy plug UT23 with chain** <sup>1)</sup>  
Dummy plug for female flange connector UT23.

**Female flange connector TB24** <sup>1)</sup>  
Female flange connector for plug TB24 on enabling switch 072851.

**Dummy plug TB24 with chain** <sup>1)</sup>  
Dummy plug for female flange connector TB24.

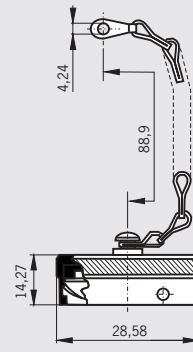
### Female flange connector VP19 19-pin

#### Dimension drawings

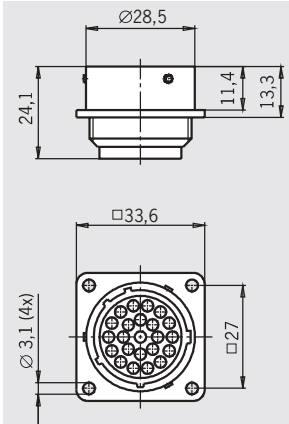


View of connection side, socket

### Dummy plug VP19 with chain

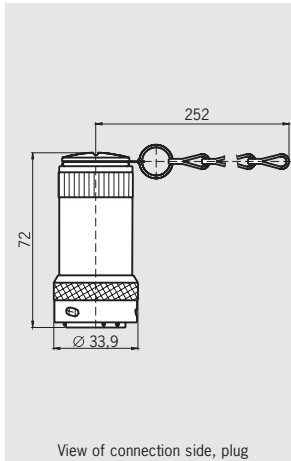


### Female flange connector UT23 23-pin



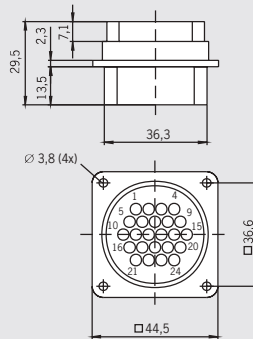
View of connection side, socket

### Dummy plug UT23 with chain



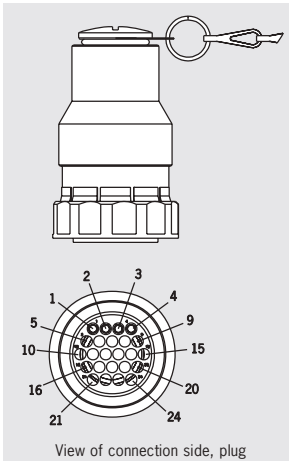
View of connection side, plug

### 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	<b>073 296</b> Female flange connector 19-pin
		Dummy plug with chain	<b>073 297</b> Dummy plug with chain
UT23 23-pin	Crimp contacts <sup>1)</sup>	Female flange connector for enabling switch ..C1715	<b>074 384</b> Flange connector / 23-pin / metal version
		Dummy plug with chain (3 bridges included)	<b>083 457</b> Short-circuit plug with chain
TB24 24-pin	Crimp contacts <sup>1)</sup>	Female flange connector for enabling switch 072 851 incl. dummy plug with chain (with bridges)	<b>072 937</b> 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	
<b>SVM5</b> 5-pin	Female connector M12	<b>99-0436-57-05</b> Cable socket	<b>Binder</b> www.binder-connector.de
	Female flange connector M12	<b>09-3442-700-05</b> Flange connector with wires	
	Dummy plug M12	<b>08-2425-000-000</b> Protective cap for socket with retaining strap	
<b>CE5</b> 3-pin + N + PE	Mating connector (socket)	<b>CEE plug as per CEE standard</b>	
<b>C16-1</b> 6-pin + PE	Female flange connector	<b>T3107 500</b> Female receptacle	<b>Amphenol-Tuchel</b> www.amphenol-tuchel.com
	Socket crimp contacts for C16-1, VPE 100 pcs.	<b>VN02 016 0002 (1)</b> Single contact, silver, 0.5-1.5 mm <sup>2</sup>	
	Dummy plug	<b>T6483 000</b> Protective cap for female receptacle	
<b>MR</b> 7, 8, 9, 10 and 12-pin	Straight female connector (7-pin), pre-assembled for built-in connector MR7	<b>MIN-7FPX-..</b> Female plugs with cable	<b>MENCOM</b> www.mencomcorp.com
	Straight female connector (8-pin), pre-assembled for built-in connector MR8	<b>MIN-8FPX-..</b> Female plugs with cable	
	Straight female plug (9-pin), pre-assembled for built-in connector MR9	<b>MIN-9FP-..</b> Female plugs with cable	
	Straight female connector (10-pin), pre-assembled for built-in connector MR10	<b>MIN-10FP-..</b> Female plugs with cable	
	Straight female connector (12-pin), pre-assembled for built-in connector MR12	<b>MIN-12FP-..</b> Female plugs with cable	
<b>HAN10</b> 10-pin + PE	Flange connector 1 cable exit	<b>19 20 010 0251</b> Socket housing 1 cable exit	<b>Harting</b> www.harting.com
	Socket contacts (installation for flange connector)	<b>09 20 010 3101</b> Socket contact insert crimp connection	
	Socket contacts for crimping	<b>09 33 000 6220</b> Socket crimp contacts 0.5 mm <sup>2</sup>	
	Dummy plug	<b>09 20 010 5425</b> Cover	
<b>RC17-Y coded</b> 17-pin	Female flange connector, can be soldered to male connector RC17Y	<b>RC-17S1Y122000</b> Flange plug connector 17-pin	<b>Continers</b> www.continers.com

### ► Crimp and extraction tools

For plug connector	Function	Manufacturer's designation	
<b>SR6 and SR11</b>	Crimp tool	<b>932 507-001</b> XCZ 0700	<b>Hirschmann</b> www.hirschmann.com
	Extraction tool	<b>931 812-001</b> XWA 164	
<b>C16-1</b>	Crimp tool	<b>TA0500 + TA0000163 + TA0002016001</b> Crimp pliers, jaws and contact receptacle	<b>Amphenol-Tuchel</b> www.amphenol-tuchel.com
	Extraction tool	<b>FG 0300 1461</b> Extraction tool	
<b>RC12</b>	Crimp tool	<b>RC-Z 2378</b> Crimp pliers for machined contacts	<b>Continers</b> www.continers.com
	Removal tool	<b>RC-Z 2097</b> Extraction tool/insertion tool	
<b>RC18</b>	Crimp tool	<b>RC-Z 2378</b> Crimp pliers for machined contacts	<b>Continers</b> www.continers.com
	Extraction tool	<b>RC-Z 2274</b> Extraction tool	
<b>VP19</b>	Crimp tool	<b>T98143 DAK 83S-30 / 11-7576T3</b> Insertion tool	<b>Liton/Veam</b> www.litonveam.com
	Extraction tool	<b>46592-MT50 / 11-7576T3</b> Removal tool	
<b>UT23</b>	Crimp tool	<b>Y16RCM</b> Crimping tool for machined contacts	<b>Burndy</b> www.burndy.com
	Extraction tool	<b>RX2025GE1</b> Extraction tool	
<b>TB24</b>	Crimp tool	<b>WT10-04</b> Crimp tool	<b>Thomas &amp; Betts</b> www.tbts.com
	Extraction tool	<b>TRT16</b> 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 <sub>e</sub> 24 V I <sub>e</sub> 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 <sup>2</sup>	

## 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 <sup>2</sup>	

## 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 <sup>2</sup>	

## 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 <sup>2</sup>	Soldered connections 1.0 mm <sup>2</sup>
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 <sup>2</sup>	Soldered connections 1.0 mm <sup>2</sup>
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 <sup>2</sup>	

## 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 <sup>2</sup>	

## 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 <sup>2</sup>	