

## Ex command devices

### Thermoplastic enclosure

// Series Ex 14

from page 184

// Series Ex BF 80

from page 190





# Ex command devices

## Range of application

Ex command devices can be mounted in Ex»e«switchboards, control panels, two-hand control panels, directly on the machine enclosure and in the lift industry. On manual actuation, the devices start or terminate operating sequences and functional processes.

There are versions as push buttons, semi-rotary, key-operated and emergency stop switches. The emergency stop devices are wired in the safety circuit of machinery or plants. They fulfil the requirements of EN 60204-1.

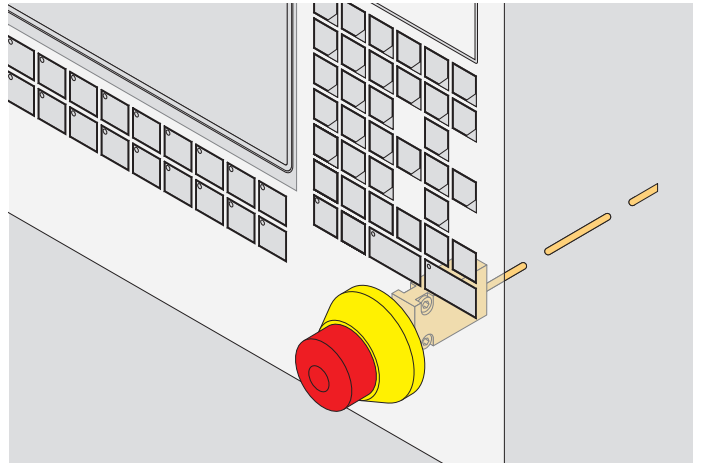
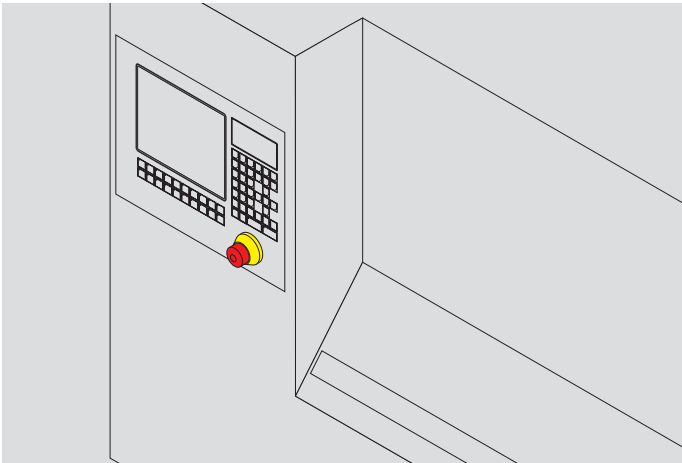
## Design and operating principle

The Ex command devices are fit for  $\varnothing$  22.5 mm mounting holes and suitable for spacings of 30 mm between centres. All Ex command devices provide IP 65 degree of protection and are double insulated for class II. The actuator is connected to the Ex 14 switch by a bayonet fastener. Available switching elements with slow action are: emergency-stop push-buttons, push-buttons with and without diaphragm, selectors, control switches and key-operated switches.

All Ex command devices shown in this chapter bear the CE mark according to the Low Voltage Directive 06/95/EC and the emergency-stop push-buttons according to the Machinery Directive 2006/42/EC, as well as to ATEX 94/9/EC. The Ex command devices per equipment category 3D bear the CE mark without the number of the notified body and have received a CE declaration of manufacturer conformity.

## Application

as emergency-stop push button in a switchboard



# Ex command devices

## // Series Ex 14

### Features/Options

- Ex zone 1 and 21
- Double insulated □
- Mounting hole diameter 22.5 mm
- With pre-wired cable, cable length 1 metre
- Special version only for dust Ex zone 22

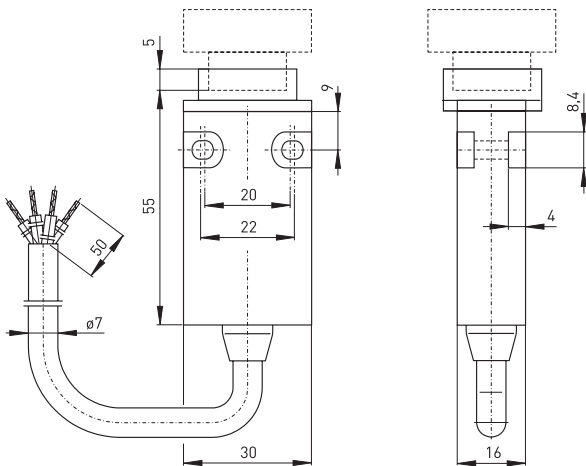
// EX 14



### Technical data

<b>Standards</b>	EN 60947-5-1; EN 1088; EN 60079-0, EN 60079-1, EN 60079-31; EN ISO 13849-1
<b>Enclosure</b>	glass-fibre reinforced, shock-proof thermoplastic, self-extinguishing UL 94-V0
<b>Protection class</b>	IP 65 to IEC/EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, positive break NC contact ⊖
<b>Switching elements</b>	change-over contact with double break Zb, galvanically separated contact bridges
<b>Connection</b>	cable H05VV-F
<b>Cable section</b>	4 x 0.75mm <sup>2</sup>
<b>Cable length</b>	1 m
<b>B<sub>10d</sub> (10 % load)</b>	60 000
<b>T<sub>M</sub></b>	max. 20 years
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	T6: 6 A; T5: 3 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 0,25 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gG/gN-fuse
<b>Ambient temperature</b>	T6: -20 °C ... +65 °C, T5: -20 °C ... +95 °C
<b>Mechanical life</b>	> 30 000 operations
<b>Switching frequency</b>	1800/h
<b>Note</b>	Switch must be protected from mechanical damage!
<b>Ex marking</b>	⊕ II 2G Ex d IIC T6/T5 Gb, II 2D Ex tb IIIC T80°C/T95°C Db IECEX Ex d IIC T6/T5 Gb, Ex tb IIIC T80°C/T95°C Db
<b>Approvals</b>	PTB 03 ATEX 1070 X, IECEx PTB 06.0098 X

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### Type code

Ex 14 RUV 1Ö/1S-s-1m-3D

Equipment Categ. 3D,  
dust Ex zone 22  
Cable length 1 m  
Cable entry on side  
Contact type 1Ö/1S (2Ö only for RUV)  
Actuator RUV (RT, RSSA, RW, etc. ...)  
Series  
Ex certified component

# Ex command devices

## // Series Ex 14, Actuator

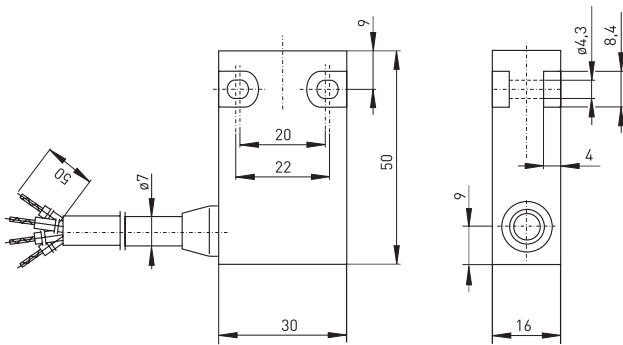
### Features/Options

- Slow action with 2 NC contacts available
- With gold-plated contacts available on request
- With actuator made of stainless steel, ordering suffix -V2A
- Available with stainless steel actuators: push buttons, semi-rotary, key-operated or key-operated switches

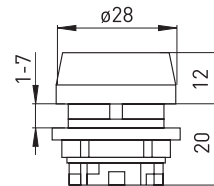
### Features/Options

- With pre-wired cable, cable length 1 metre
- Protection class IP 65

### // Cable on side



### // Push button RT



### // Ex 14 RT-V2A



### Contact variants: switch travel/contacts

Slow action	
1 NC/1 NO contact	Ex 14 RT

### // Ex 14 RST-V2A



# Ex command devices

## // Series Ex 14, Actuator

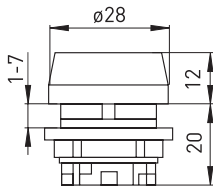
### Features/Options

- Diaphragm of transparent silicon material
- IP 67 for actuators with diaphragm
- With pre-wired cable, cable length 1 metre
- Available with actuator made of stainless steel

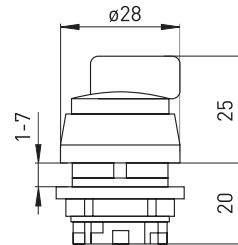
### Features/Options

- Selector with rest positions
- Available in 3 different versions
- Protection class IP 65
- With pre-wired cable, cable length 1 metre
- Available with actuator made of stainless steel

## // Push button with diaphragm RTM



## // Selector RW



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### Contact variants: switch travel/contacts

### Contact variants: switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>Ex 14 RTM</b> 

	Slow action
1 NC/1 NO contact	<b>Ex 14 RW ...</b> 
2 switching positions Switching angle 90° 0 - I or I - II	<b>Ex 14 RWA 0 - I</b> <b>Ex 14 RWA I - II</b> 
3 switching positions Switching angle -45° + 45° I - 0 - II	<b>Ex 14 RWB I - 0 - II</b> 
Control switch actuated selector Left-hand side switching, right-hand side stroke Switching angle -45° + 45° I - 0 ← II	<b>Ex 14 RWC I - 0</b> ← H 



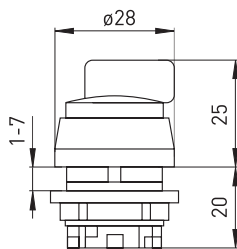
**Features/Options**

- RST with spring return
- Available in 2 different versions
- Protection class IP 65
- With pre-wired cable, cable length 1 metre
- Available with actuator made of stainless steel

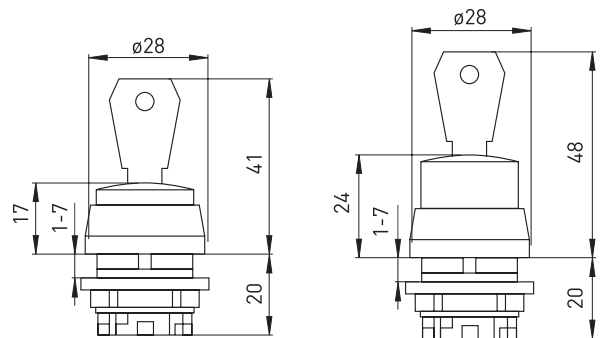
**Features/Options**

- RSSA key switch with safety cylinder lock (locks against turning)
- Normal version always has same key number
- Available in 9 different versions
- Up to 20 lock combinations available on request
- Protection class IP 65
- With pre-wired cable, cable length 1 metre
- Available with actuator made of stainless steel

**// Control switch RST**



**// Key switch RSSA**



**Contact variants: switch travel/contacts**

	Slow action
1 NC/1 NO contact	<p>Ex 14 RST ...</p>
Switching angle 90° with return to left position, 0 ← I	<p>Ex 14 RSTA 0 ← I</p>
Switching angle -45° + 45° with return to central position I → 0 ← II	<p>Ex 14 RSTB I → 0 ← II</p>

**Legend**

- I — Switching position
- ↺ Spring return
- Position for key removal

**Contact variants: switch travel/contacts**

	Slow action	2 Schaltstellungen	3 Schaltstellungen
1 NC/1 NO contact	<p>Ex 14 RSSA ...</p>		
Key switch		<p>Ex 14 RSSA 14</p>	<p>Ex 14 RSSA 12</p>
		<p>Ex 14 RSSA 15</p>	<p>Ex 14 RSSA 13</p>
		<p>Ex 14 RSSA 17</p>	<p>Ex 14 RSSA 23</p>
		<p>Ex 14 RSSA 18</p>	<p>Ex 14 RSSA 24</p>
		<p>Ex 14 RSSA 27</p>	





# Ex command devices

## // Series Ex 14, Actuator

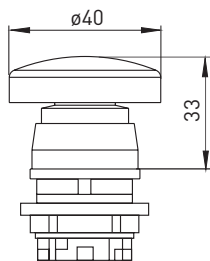
### Features/Options

- Thermoplastic actuator
- Protection class IP 65
- With pre-wired cable, cable length 1 metre
- 1 NC and 1 NO contact, double break, type Zb or 2 NC contacts

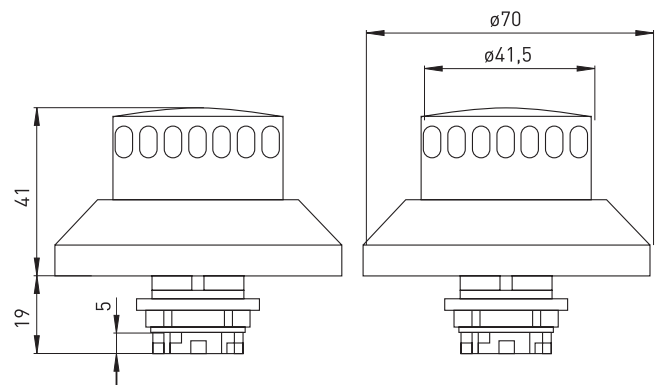
### Features/Options

- Thermoplastic actuator
- according to EN ISO 13850
- 1 NC and 1 NO contact, double break, type Zb or 2 NC contacts
- Projection from front of panel 41 mm
- With collar to prevent blocking
- Reset by turning clockwise
- With pressure-point to protect against unintentional actuation
- Protection class IP 65
- With pre-wired cable, cable length 1 metre

## // Push button RS SW



## // Emergency-stop push button RUV



Contact variants: switch travel/contacts

Contact variants: switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>Ex 14 RS SW</b> BK — GY BU — BN
2 NC contacts	<b>Ex 14 RS SW 2Ö</b> BK — GY BU — BN

	Slow action
1 NC/1 NO contact	<b>Ex 14 RUV</b> BK — GY BU — BN
2 NC contacts	<b>Ex 14 RS RUV 2Ö</b> BK — GY BU — BN



PRODUCTION PROCESS ASSEMBLY  
ASSEMBLY OF CONTACT BRIDGES



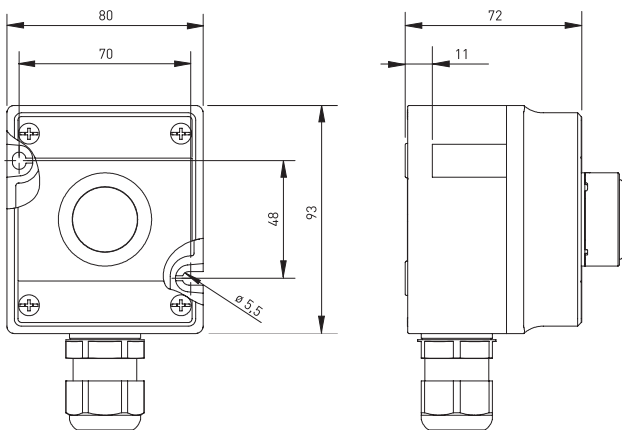
# Ex Command devices

## // Series Ex BF 80

// EX BF 80



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### Features/options

- Ex zone 1 and 21
- Polyester resin enclosure
- PU foam gaskets
- Different actuating elements like push-buttons, selector- or key switches available
- Versions with two or three actuating elements available
- 3 enclosure sizes

### Technical Data

<b>Standards</b>	EN 60079-0, EN 60079-1, EN 60079-5, EN 60079-7, EN 60079-11, EN 60079-18; EN 61241-0, EN 61241-1; EN ISO 13849-1
<b>Enclosure</b>	Polyester resin (glass fibre-reinforced)
<b>Protection class</b>	IP 65 to IEC/EN 60529
<b>Switching system</b>	slow action, positive break NC contacts
<b>Connection</b>	screw terminals, max. 6 mm <sup>2</sup> (incl. conductor ferrules), serial/connection clamps max. 4 mm <sup>2</sup>
<b>Ambient temperature</b>	T6: -40 °C ... +40 °C, T5: -40 °C ... +55 °C; - 50 °C ... + 60 °C on request
<b>B<sub>10d</sub> (10 % load)</b>	6050
<b>T<sub>M</sub></b>	max. 20 years
<b>Mechanical life</b>	50 000 operations
<b>Contact element</b>	
<b>I<sub>e</sub>/U<sub>e</sub></b>	23 A/500 V
<b>Utilisation category</b>	AC-1; DC-1
<b>Rated operating current/voltage</b>	6 A/690 VAC; 6 A/220 VDC
<b>Control switch</b>	
<b>I<sub>e</sub>/U<sub>e</sub></b>	16 A/750 V
<b>Utilisation category</b>	AC-15; DC-13
<b>Rated operating current/voltage</b>	16 A/400 VAC; 16 A/110 VDC
<b>Signalling device LM</b>	
<b>I<sub>e</sub>/U<sub>e</sub></b>	max. 16 A/750 V
<b>Power consumption</b>	max. 1.5 W
<b>Ex marking</b>	⊕ II 2G Ex edqm ia/ib [ia/ib] II, IIA, IIB, IIC, T6/T5/T4 II 2D Ex tD A21 IP65 T80°C, T95°C, T130°C
<b>Approvals</b>	PTB 10 ATEX 1018, IECEx in 2012

### Type code

**Ex BF 80 3 DT/DT/DT**

Actuator DT (LDT, DDT, LM, WS, SLS, PZTNA)  
3 enclosure (1=single, 2=double, 3=triple)  
Series  
Command device  
Ex certified component

## Ex Command devices

### // Series Ex BF 80, actuators

#### Features/Options

- Three different sizes of enclosures available for 1, 2, or 3 actuators

### // Emergency-stop push-button PZTNA



#### Features/Options

- With 1 NC/1 NO contact or 2 NC/1NO contacts
- Different diameters available: 38 mm or 55 mm

#### Diameter 38 mm

Ex BF 80 1 PZTNA 1Ö/1S 38 mm

Ex BF 80 1 PZTNA 2Ö/1S 38 mm

#### Order Number

6810053001

6810053002

#### Diameter 55 mm

Ex BF 80 1 PZT55NA 1Ö/1S 55 mm

#### Order Number

6810073001

### // Emergency-stop push-button with key unlocking PZSTNA



#### Features/Options

- With 1 NC/1 NO contact
- Diameter 38 mm

#### Diameter 38 mm

Ex BF 80 1 PZSTNA 1Ö/1S 38 mm

#### Order Number

6810123001

### // Black mushroom push-button PZDTSW



#### Features/Options

- Black mushroom push-button

#### Mushroom push-button

Ex BF 80 1 PZDTSW 1Ö/1S

#### Order Number

6810033001

// Push-button DT



Features/Options

- Push-buttons DT can be equipped with red 0 plate or green I plate

Push-button  
Ex BF 80 1 DT 1Ö/1S

Order Number  
6810013001

// Illuminated push-button LDT



Features/Options

- Colours: clear, red, yellow, green, blue

Illuminated push-button  
Ex BF 80 1 LDT 1Ö/1S

Order Number  
6810133004

// Double push-button DDT



Features/Options

- Double push-buttons DDT can be equipped with red 0 plate or green I plate
- Red push-button: 1 NC contact, green push-button: 1 NO contact

Double push-button  
Ex BF 80 1 DDT 1Ö/1S

Order Number  
6810113001

Ex Command devices  
// Series Ex BF 80, actuators

// Signalling device LM



Features/Options

- All coloured filters included: clear, red, yellow, green, blue

Signalling device  
Ex BF 80 1 LM LED

Order Number  
6810143005

// Selector switch WS



Features/Options

- Two versions available: 0 - I and I - 0 - II

Version 0 - I  
Ex BF 80 1 WS 0 - I 10/1S

Order Number  
6810043001

Version I - 0 - II  
Ex BF 80 1 WS I - 0 - II 1S/1S

Order Number  
6810043003

// Key switch SLS



Features/Options

- Two versions available: 0 - I and I - 0 - II

Version 0 - I  
Ex BF 80 1 SLS 0 - I 10/1S

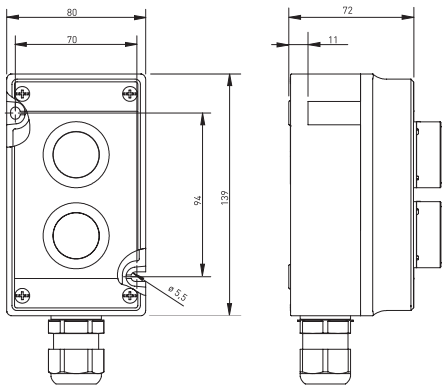
Order Number  
6810083001

Version I - 0 - II  
Ex BF 80 1 SLS I - 0 - II 1S/1S

Order Number  
6810083003

**Ex Command devices**  
**// Series Ex BF 80, actuators**

**// Version with 2 push-buttons**



**Features/Options**

- With 1 NC/1 NO contact per push-button

**2 push-buttons**  
 Ex BF 80 2 DT/DT 1ÖS/1ÖS

**Order Number**  
 6820223006

**1 signalling device, 1 push-buttons**  
 Ex BF 80 2 LM/DT LED/1ÖS

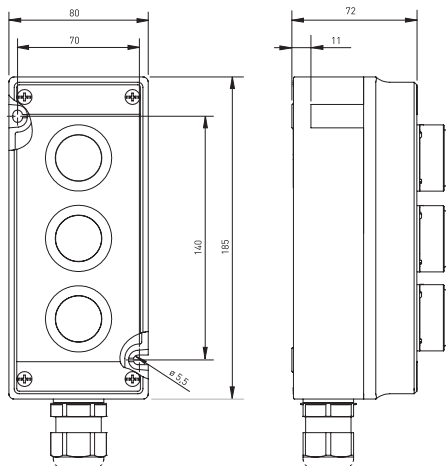
**Order Number**  
 6820233007

**1 signalling device, 1 double push-button**  
 Ex BF 80 2 LM/DDT LED/1ÖS

**Order Number**  
 6820243007

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**// Version with 3 push-buttons**



**Features/Options**

- With 1 NC/1 NO contact per push-button

**3 push-buttons**  
 Ex BF 80 3 DT/DT/DT 1ÖS/1ÖS1ÖS/

**Order Number**  
 6830253008

**1 signalling device, 2 push-buttons**  
 Ex BF 80 3 LM/DT/DT LED/1ÖS/1ÖS

**Order Number**  
 6830263009

**1 signalling device, 1 double push-b., 1 e.-stop**  
 Ex BF 80 3 LM/DDT/PZSTNA 38mm LED/1ÖS/1ÖS

**Order Number**  
 6830273009