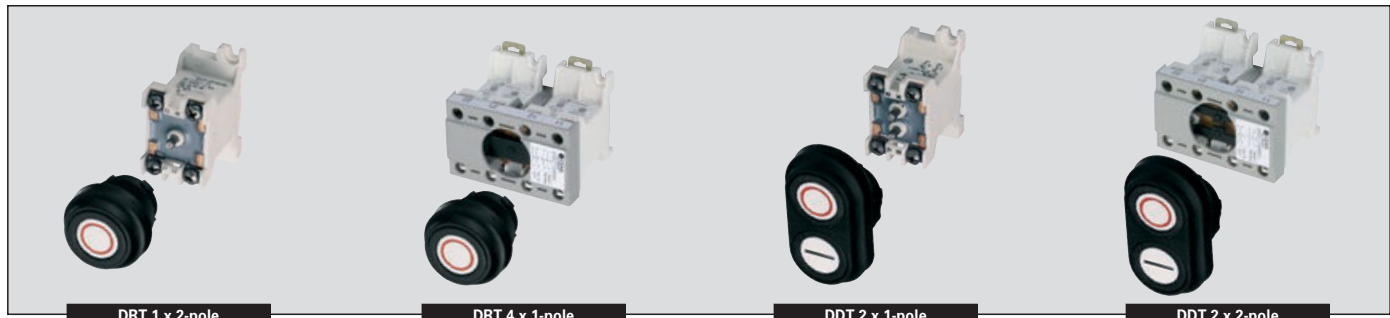


## Built-in components



DRT 1 x 2-pole

DRT 4 x 1-pole

DDT 2 x 1-pole

DDT 2 x 2-pole

4

## Technical data

### Ex-pushbutton DRT and double pushbutton DDT

Marking accd. to 94/9/EC	⊕ II 2 G Ex de IIC/IIB Gb / ⊕ I M2 Ex de I Mb
EC-Type Examination Certificate	IBExU 14 ATEX 1030 U
IECEX Certificate of Conformity	IECEX IBE 14.0005U
Marking accd. to IECEx	Ex de IIC Gb Ex de IIB Gb Ex de I Mb
Operating temperature	-45 °C up to +80 °C (IIC) -60 °C up to +80 °C (IIB)
Application temperature <sup>1)</sup>	-45 °C up to +55 °C (IIC) -60 °C up to +55 °C (IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current with gold contact points	0.4 A
Rated making-/rated breaking capacity accd. EN 60947-5-1	AC-15: U <sub>o</sub> 250 V / I <sub>o</sub> 6 A U <sub>o</sub> 500 V / I <sub>o</sub> 4 A DC-13: U <sub>o</sub> 24 V / I <sub>o</sub> 6 A U <sub>o</sub> 220 V / I <sub>o</sub> 1 A
Degree of protection accd. to EN 60529	IP66 (installed condition)
Type of mounting	DIN rail mounting
Enclosure colour	grey
Gasket material	Neoprene (standard), Fluorsilikon or Viton on request

### 2-pole version

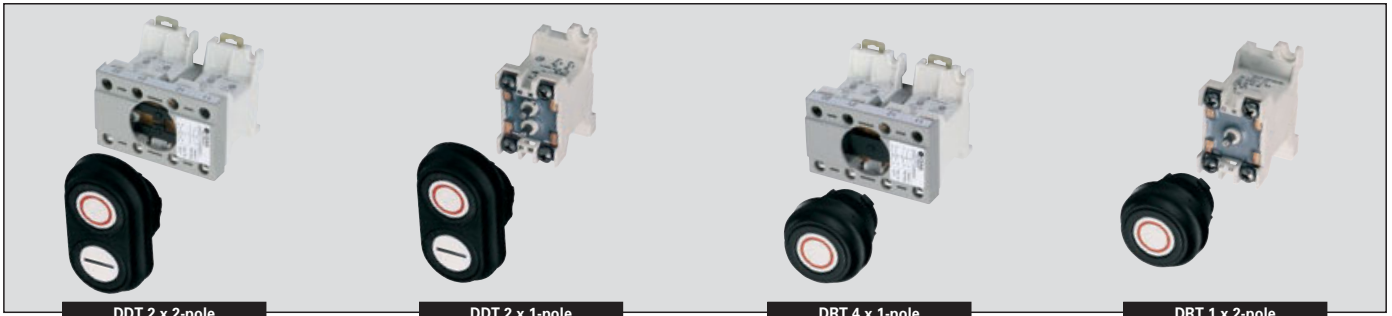
Connecting terminals	2 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

### 4-pole version<sup>2)</sup>

Connecting terminals	4 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.4.34/35.

<sup>2)</sup> The 4-pole pushbutton needs two mounting areas. The actuator will be in the middle of the two mounting areas.

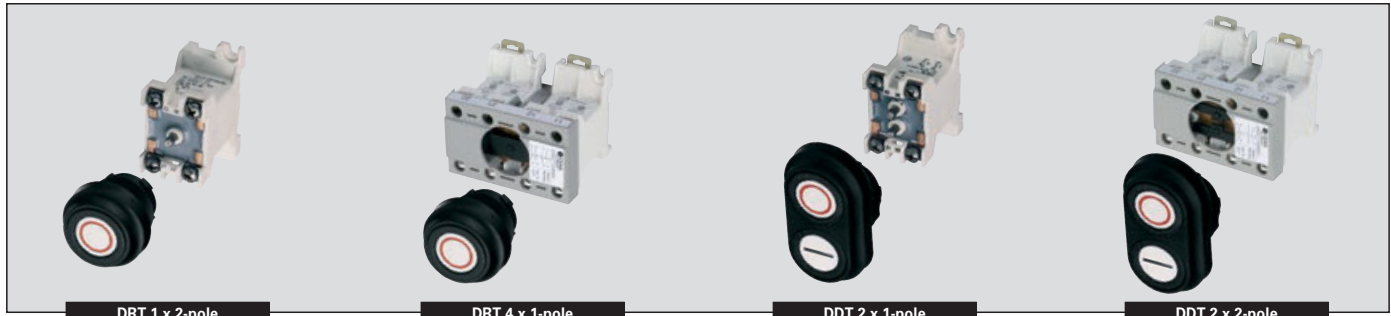


**Ordering code for component (Code 2)**

Code	Component	Code
A	Pushbutton, for enclosure mounting	DRT
	Double pushbutton, for enclosure mounting	DDT

Code	Circuit	Contacts		Code	
		DRT	DDT	silver contact points	gold contact points
C	2 NC			13	16
	2 NO			14	17
	1 NO + 1 NC			15	18
	4 NC			20	25
	1 NC + 3 NO			21	26
	2 NC + 2 NO			22	27
	3 NC + 1 NO			23	28
	4 NO			24	29

## ■ Built-in components ■



DRT 1 x 2-pole

DRT 4 x 1-pole

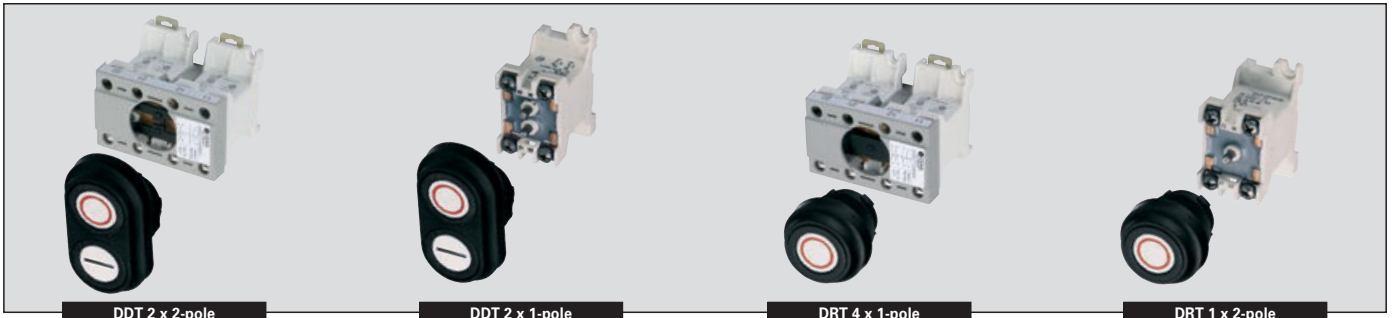
DDT 2 x 1-pole

DDT 2 x 2-pole

4

### Ordering code for component (Code 2)

Code	Label	Inscription	Code	Inscription	Code
D1, D2		0, I, Start, Stop	001	0	002
		I	003	I I	004
			005	STOP	006
		START	007	emergency stop	008
		LANGSAM	009	SCHNELL	010
		EMERG.STOP	011	-	012
		ARRET	014	MARCHE	015
		AUF	016	AB	017
		Neutral white	018	Neutral green	019
		0, I, Arret, Marche	020	UP	024
		DOWN	025	ZU	026
		ON	027	OFF	028
		+	030	-	031
		Neutral rot	033	Neutral yellow	034
		EIN	036	AUS	037
		AUTO	039	HAND	050
		SENKEN	051	HEBEN	052
		LINKS	053	RECHTS	054
		FAST	055	SLOW	056
		RESET	057	OPEN	058



**Example for ordering code (Code 2)**

Content	Circuit	Code	Ordering code				
			A	B	C	D1	D2
<b>Pushbutton with silver contact points</b>							
<b>Version with standard label (0, I, START, STOP)</b>							
2 NC	2 NC	13	DRT	0	13	001	---
2 NO	2 NO	14	DRT	0	14	001	---
1 NO + 1 NC	1 NO + 1 NC	15	DRT	0	15	001	---
4 NC	4 NC	20	DRT	0	20	001	---
3 NO + 1 NC	3 NO + 1 NC	21	DRT	0	21	001	---
2 NO + 2 NC	2 NO + 2 NC	22	DRT	0	22	001	---
1 NC + 3 NO	1 NC + 3 NO	23	DRT	0	23	001	---
4 NO	4 NO	24	DRT	0	24	001	---

<b>Double pushbutton with gold contact points</b>							
<b>Version with standard label (0, I, START, STOP)</b>							
2 NC	2 NC	16	DDT	0	16	001	001
2 NO	2 NO	17	DDT	0	17	001	001
1 NO + 1 NC	1 NO + 1 NC	18	DDT	0	18	001	001
4 NC	4 NC	25	DRT	0	25	001	001
3 NO + 1 NC	3 NO + 1 NC	26	DRT	0	26	001	001
2 NO + 2 NC	2 NO + 2 NC	27	DRT	0	27	001	001
1 NC + 3 NO	1 NC + 3 NO	28	DRT	0	28	001	001
4 NO	4 NO	29	DRT	0	29	001	001

## Built-in components



SLT 1 x 2-pole

SLT 1 x 4-pole

4

## Technical data

### Ex-key-operated pushbutton SLT

Marking accd. to 94/9/EC	⊕ II 2 G Ex de IIC/IIB Gb / ⊕ I M2 Ex de I Mb
EC-Type Examination Certificate	IBExU 14 ATEX 1030 U
IECEX Certificate of Conformity	IECEX IBE 14.0005U
Marking accd. to IECEx	Ex de IIC Gb / Ex de IIB Gb / Ex de I Mb
Operating temperature range	-45 °C up to +80 °C (IIC) / -60 °C up to +80 °C (IIB)
Application temperature <sup>1)</sup>	-45 °C up to +55 °C (IIC) / -60 °C up to +55 °C (IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current with gold contact points	0.4 A
Rated making-/rated breaking capacity accd. EN 60947-5-1	AC-15: U <sub>o</sub> 250 V / I <sub>o</sub> 6 A / U <sub>o</sub> 500 V / I <sub>o</sub> 4 A DC-13: U <sub>o</sub> 24 V / I <sub>o</sub> 6 A / U <sub>o</sub> 220 V / I <sub>o</sub> 1 A
Degree of protection accd. to EN 60529	IP66 (installed condition)
Type of mounting	DIN rail mounting
Enclosure colour	grey
Gasket material	Neoprene (standard), Fluoric Silicone or Viton on request
Latch point	CEAG 1 (others on request)

### 2-pole version

Connecting terminals	2 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

### 4-pole version<sup>1)</sup>

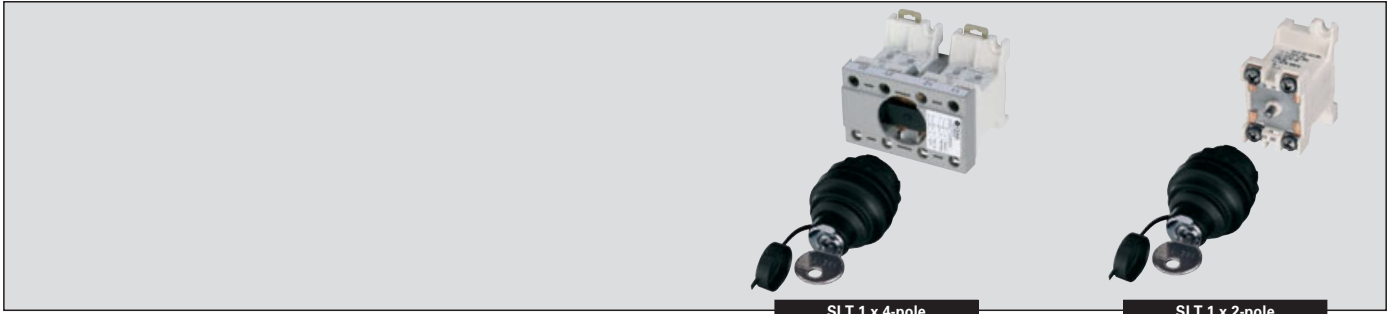
Connecting terminals	4 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.4.34/35.

<sup>2)</sup> The 4-pole pushbutton needs two mounting areas. The actuator will be in the middle of the two mounting areas.

## Example for ordering code (Code 2)

Content	Circuit	Code	Ordering code			
			A	B	C	D
<b>Key-operated pushbutton with silver contact points</b>						
<b>Version with contact function: lockable/removable/lockable/removable (Code 10)</b>						
2 NC	2 NC	13	SLT	0	13	10
2 NO	2 NO	14	SLT	0	14	10
1 NO + 1 NC	1 NO + 1 NC	15	SLT	0	15	10
2 NO + 2 NC	2 NO + 2 NC	22	SLT	0	22	10
4 NC	4 NC	20	SLT	0	20	10
4 NO	4 NO	24	SLT	0	24	10
3 NO + 1 NC	3 NO + 1 NC	21	SLT	0	21	10
1 NO + 3 NC	1 NO + 3 NC	23	SLT	0	23	10
<b>Key-operated pushbutton with gold contact points</b>						
<b>Version with contact function: lockable/removable/lockable/removable (Code 10)</b>						
2 NO + 2 NC	2 NO + 2 NC	27	SLT	0	27	10
4 NC	4 NC	25	SLT	0	25	10
4 NO	4 NO	29	SLT	0	29	10
3 NO + 1 NC	3 NO + 1 NC	26	SLT	0	26	10
1 NO + 3 NC	1 NO + 3 NC	28	SLT	0	28	10



SLT 1 x 4-pole

SLT 1 x 2-pole

**Ordering code for component (Code 2)**

Code	Component	Code
A	Key-operated pushbutton	SLT

Code	Circuit	Contacts	Code	
			silver contact points	gold contact points
C	2 NC		13	16
	2 NO		14	17
	1 NO + 1 NC		15	18
	4 NC		24	29
	1 NC + 3 NO		21	26
	2 NC + 2 NO		22	27
	3 NC + 1 NO		23	28
	4 NO		20	25

Code	Function	Pushbutton not pressed	Key	Pushbutton pressed	Key	Code
D		lockable	removable	lockable	removable	10
		lockable	removable	lockable	not removable	11
		lockable	removable	not lockable	not removable	12
		lockable	not removable	lockable	removable	13
		not lockable	not removable	lockable	removable	14
		not lockable	removable	auto lockable	removable	15

## Built-in components



SLS 1 x 2-pole

SLS 1 x 4-pole

4

## Technical data

### Key-operated switch SLS

Marking accd. to 94/9/EC	Ⓔ II 2 G Ex de IIC/IIB Gb / Ⓔ I M2 Ex de I Mb
EC-Type Examination Certificate	IBExU 14 ATEX 1030 U
IECEX Certificate of Conformity	IECEX IBE 14.0005U
Marking accd. to IECEX	Ex de IIC Gb Ex de IIB Gb Ex de I Mb
Operating temperature range	-45 °C up to +80 °C (IIC) -60 °C up to +80 °C (IIB)
Application temperature <sup>1)</sup>	-45 °C up to +55 °C (IIC) -60 °C up to +55 °C (IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current with gold contact points	0.4 A
Rated making-/rated breaking capacity accd. EN 60947-5-1	AC-15: U <sub>o</sub> 250 V / I <sub>o</sub> 6 A U <sub>o</sub> 500 V / I <sub>o</sub> 4 A DC-13: U <sub>o</sub> 24 V / I <sub>o</sub> 6 A U <sub>o</sub> 60 V / I <sub>o</sub> 0.8 A U <sub>o</sub> 110 V / I <sub>o</sub> 0.5 A
Switching system	engaging – engaging – engaging
Degree of protection accd. to EN 60529	IP66 (installed condition)
Type of mounting	DIN rail mounting
Enclosure colour	grey
Latch point	CEAG 1 (others on request)

### 2-pole version

Connecting terminals	2 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

### 4-pole version<sup>1)</sup>

Connecting terminals	4 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.4.34/35.

<sup>2)</sup> The 4-pole pushbutton needs two mounting areas. The actuator will be in the middle of the two mounting areas.



SLS 1 x 4-pole

SLS 1 x 2-pole

**Ordering code for component (Code 2)**

Code	Component	Code
A	Key-operated switch	SLS 5

Code	Circuit	Contacts	Code	
			silver contact points	gold contact points
C	2 NO		04	14
	2 NO		05	15
	4 NO		24	34
	2 NO + 2 NC		23	33
	4 NO		25	35

Code	Labels	Inscription	Code
D		I 0 II	01
		Fern 0 Ort	02
		Hand 0 Auto	03

Further Inscription labels on request

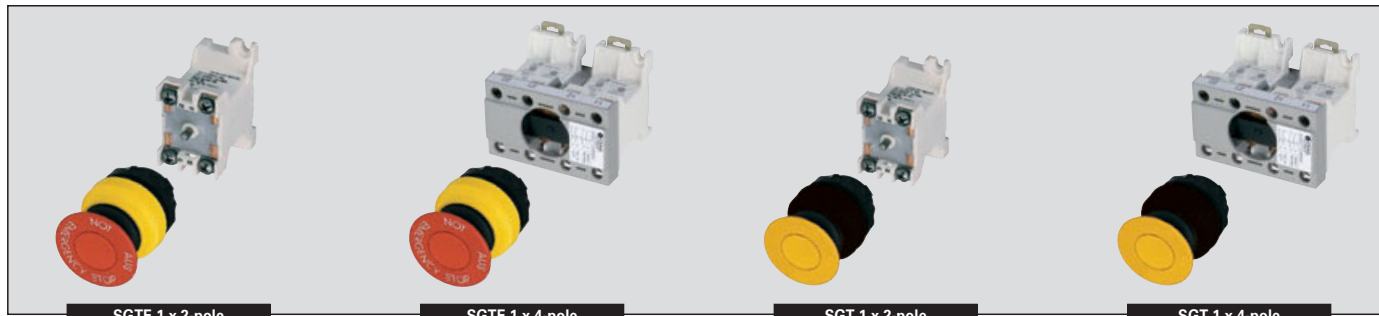
**Example for ordering code (Code 2)**

Circuit	Ordering code		
	A	C	D
<b>Key-operated switch with silver contact points and label „I 0 II“</b>			
04	SLS 5	04	01
05	SLS 5	05	01

Switch can be locked in all positions and key can be removed in all positions



## ■ Built-in components ■



SGTE 1 x 2-pole

SGTE 1 x 4-pole

SGT 1 x 2-pole

SGT 1 x 4-pole

4

## Technical data

### Ex-mushroom-head pushbutton (emergency stop „SGTE” and normal version „SGT”)

Marking accd. to 94/9/EC	Ⓔ II 2 G Ex de IIC/IIB Gb / Ⓔ I M2 Ex de I Mb
EC-Type Examination Certificate	IBExU 14 ATEX 1030 U
IECEX Certificate of Conformity	IECEX IBE 14.0005U
Marking accd. to IECEx	Ex de IIC Gb Ex de IIB Gb Ex de I Mb
Operating temperature range	-45 °C up to +80 °C (IIC) -60 °C up to +80 °C (IIB)
Application temperature <sup>1)</sup>	-45 °C up to +55 °C (IIC) -60 °C up to +55 °C (IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current with gold contact points	0.4 A
Rated making-/rated breaking capacity accd. EN 60947-5-1	AC-15: U <sub>e</sub> 250 V / I <sub>e</sub> 6 A U <sub>e</sub> 500 V / I <sub>e</sub> 4 A DC-13: U <sub>e</sub> 24 V / I <sub>e</sub> 6 A U <sub>e</sub> 220 V / I <sub>e</sub> 1 A
Degree of protection accd. to EN 60529	IP66 (installed condition)
Type of mounting	DIN rail mounting
Enclosure colour	grey
Gasket material	Neoprene (standard), Fluoric Silicone or Viton on request

#### 2-pole version

Connecting terminals	2 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

#### 4-pole version

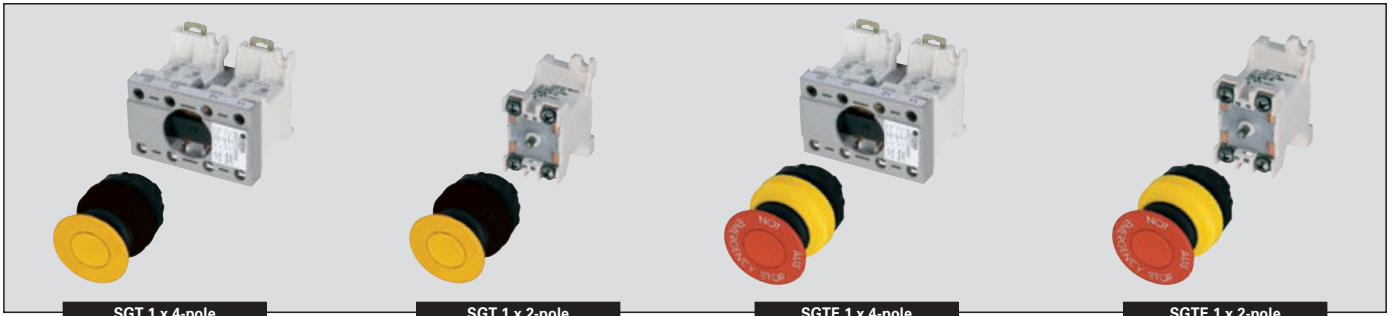
Connecting terminals	4 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.4.34/35.

<sup>2)</sup> The 4-pole pushbutton needs two mounting areas.

The actuator will be in the middle of the two mounting areas.

The pushbutton „Emergency Stop” will be equipped with a black plate in the centre of the pushbutton actuator.

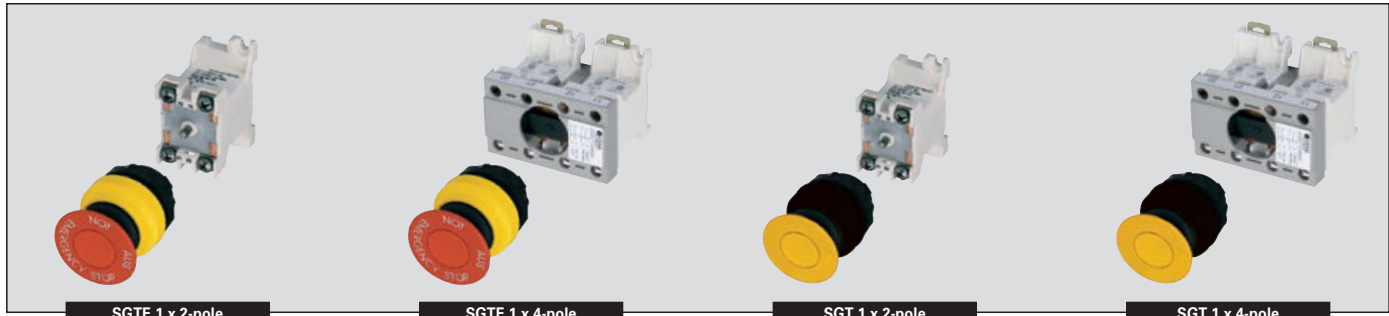


**Ordering code for component (Code 2)**

Code	Component	Code
A	Mushroom-head pushbutton	SGT
	Mushroom-head pushbutton (emergency stop)	SGTE

Code	Circuit	Contacts	Code	
			silver contact points	gold contact points
C	2 NC		13	16
	2 NO		14	17
	1 NO + 1 NC		15	18
	4 NC		20	25
	3 NO + 1 NC		21	26
	2 NO + 2 NC		22	27
	1 NO + 3 NC		23	28
	4 NO		24	29

## ■ Built-in components ■



SGTE 1 x 2-pole

SGTE 1 x 4-pole

SGT 1 x 2-pole

SGT 1 x 4-pole

### 4 Ordering code for component (Code 2)

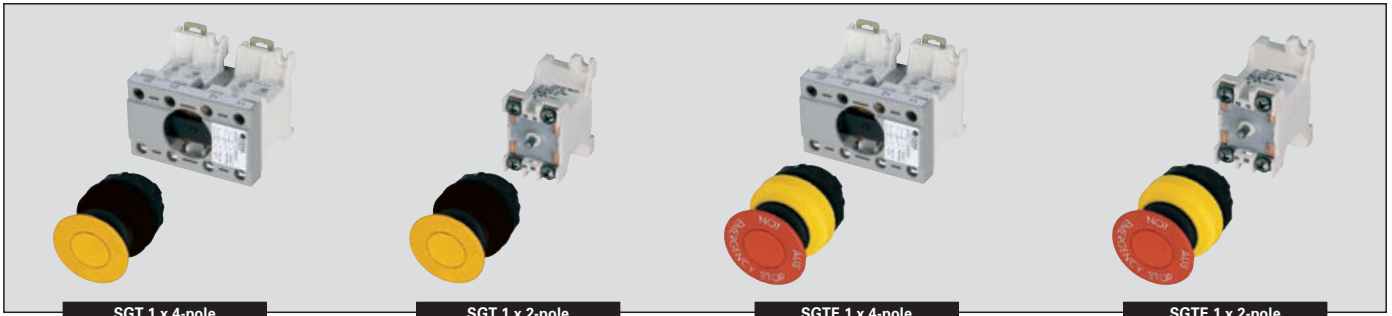
Code	Mushroom head inscription	Inscription	Code
D		emergency stop (German - Englisch) <sup>1)</sup>	1
		emergency stop (German - French) <sup>1)</sup>	4
		0, I, START, STOP	01
		0	02
		I	03
		II	04
			05
		STOP	06
		START	07
		LANGSAM	09
		SCHNELL	10
		-	12
		ARRET	14
		MARCHE	15
		0, I, Arret, Marche	20
		UP	24
		DOWN	25
		ZU	26
		ON	27
		OFF	28
	+	30	
	-	31	

Code	Mushroom head inscription	Colour	Code
E		red	1
		yellow <sup>2)</sup>	2
		black <sup>2)</sup>	3

Code	Function	pushbutton			Code
		released	engaged	unlocking	
F		not lockable	not lockable	n/a (pushbutton function)	1 <sup>2)</sup>
		not lockable	lockable	hand released	2
		not lockable	lockable	key released	3

<sup>1)</sup> only SGTE

<sup>2)</sup> only SGT



**Example for ordering code (Code 2)**

Circuit	Ordering code				
	A	C	D	E	F
<b>EMERGENCY STOP mushroom-head pushbutton red, with silver contact points</b>					
<b>Version with inscription D/E, hand released</b>					
2 NC	SGTE 0	13	1	1	2
2 NO	SGTE 0	14	1	1	2
1 NO + 1 NC	SGTE 0	15	1	1	2
2 NO + 2 NC	SGTE 0	22	1	1	2
4 NC	SGTE 0	20	1	1	2
4 NO	SGTE 0	24	1	1	2
3 NO + 1 NC	SGTE 0	21	1	1	2
1 NO + 3 NC	SGTE 0	23	1	1	2

<b>Mushroom-head pushbutton with silver contact points, without locking, mushroom head, black</b>					
<b>Version with standard label (0, I, START, STOP)</b>					
2 NC	SGT 0	13	01	3	1
2 NO	SGT 0	14	01	3	1
1 NO + 1 NC	SGT 0	15	01	3	1
2 NO + 2 NC	SGT 0	22	01	3	1
4 NC	SGT 0	20	01	3	1
4 NO	SGT 0	24	01	3	1
3 NO + 1 NC	SGT 0	21	01	3	1
1 NO + 3 NC	SGT 0	23	01	3	1

## Built-in components



SCT 1 x 2-pole

SCT 1 x 4-pole

4

## Technical data

### Ex-Mini-control switch SCT

Marking accd. to 94/9/EC	Ⓔ II 2 G Ex de IIC/IIB Gb / Ⓔ I M2 Ex de I Mb
EC-Type Examination Certificate	IBExU 14 ATEX 1030 U
IECEX Certificate of Conformity	IECEX IBE 14.0005U
Marking accd. to IECEx	Ex de IIC Gb Ex de IIB Gb Ex de I Mb
Operating temperature range	-45 °C up to +80 °C (IIC) -60 °C up to +80 °C (IIB)
Application temperature <sup>1)</sup>	-45 °C up to +55 °C (IIC) -60 °C up to +55 °C (IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current with gold contact points	0.4 A
Rated making-/rated breaking capacity accd. EN 60947-5-1	AC-15: U <sub>o</sub> 250 V / I <sub>o</sub> 6 A U <sub>o</sub> 500 V / I <sub>o</sub> 4 A DC-13: U <sub>o</sub> 24 V / I <sub>o</sub> 6 A U <sub>o</sub> 220 V / I <sub>o</sub> 1 A
Degree of protection accd. to EN 60529	IP66 (installed condition)
Type of mounting	DIN rail mounting
Enclosure colour	grey

### 2-pole version

Connecting terminals	2 x 2.5 mm <sup>2</sup>
Dimensions in mm (L x W x H)	59 x 31 x 45
Weight	0.15 kg

### 4-pole version<sup>1)</sup>

Connecting terminals	4 x 2.5 mm <sup>2</sup>
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.4.34/35.

<sup>2)</sup> The 4-pole pushbutton needs two mounting areas. The actuator will be in the middle of the two mounting areas.



SCT 1 x 4-pole

SCT 1 x 2-pole

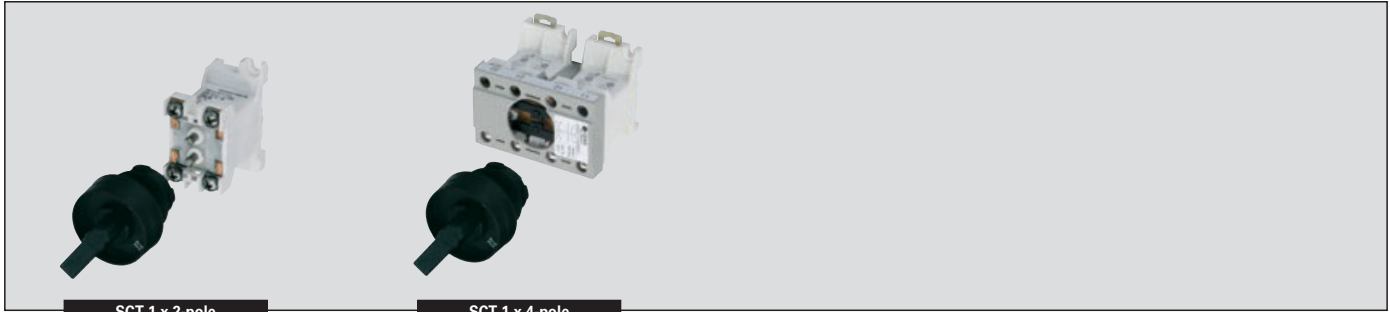
**Ordering code for component (Code 2) Code A - C - D - E**

Code	Component	Code
A	Mini-control switch	SCT

Code	Switching system	Version	Code
C	4	spring – engaging – spring	4
	5	engaging – engaging – engaging	
	6	engaging – engaging	
	7	spring – engaging – engaging	
	8	engaging – engaging – spring	
	9	engaging – spring	



**Built-in components**



SCT 1 x 2-pole

SCT 1 x 4-pole

4

**Ordering code for component (Code 2) Code A - C - D - E**

Code	Circuit	Contacts	Code	
			silver contact points	gold contact points
D			01	11
			02	12
			03	13
			04	14
			05	15
			07	17
			22	32
			23	33
			21	31
			26	36
			25	35
			27	37
			24	34



SCT 1 x 4-pole

SCT 1 x 2-pole

**Ordering code for component (Code 2) Code A - C - D - E**

Code	Inscription	Code	Inscription	Code
E	0 I	01	0 I II	18
	I II	02	AUS AUTO EIN	19
	STOP START	03	AUS HAND AUTO	20
	HAND AUTO	04	ÖRTLICH AUS FERN	21
	SENKEN HEBEN	05	START NORMAL STOP	22
	REMOTE LOCAL	06	OFF 0 ON	23
	I 0 II	07	HAND OFF AUTO	24
	AUS BETRIEB EIN	08	0 IN START	25
	AUS 0 EIN	09	MAN AUTO	26
	AUF 0 AB	10	START STOP	27
	Entriegelt 0 Verriegelt	11	HEBEN SENKEN	28
	OUT OF HAND	12	OFF ON	29
	LOCAL REMOTE AUTO	13	AUS EIN	30

Other labels on request

**Example for ordering code (Code 2)**

Circuit	Switching system	Contacts Code	Ordering code			
			A	C	D	E
<b>Control switch with silver contact points</b>						
<b>Switch can be locked in all positions</b>						
I II	6	01	SCT	6	01 or 21	02
0 I	6	03	SCT	6	03 or 23	01
I II	6	02	SCT	6	02 or 22	02
I 0 II	4	04	SCT	4	04 or 24	07
I 0 II	5	05	SCT	5	05 or 26	07
0 I	7	07	SCT	7	07 or 27	01



## Built-in components



Potentiometer

4

### Technical data

#### Ex-potentiometer POT

Marking accd. to 94/9/EC	⊕ II 2 G Ex de IIC/IIB Gb / ⊕ I M2 Ex de I Mb
EC-Type Examination Certificate	IBExU 14 ATEX 1030 U
IECEX Certificate of Conformity	IECEX IBE 14.0005U
Marking accd. to IECEx	Ex de IIC Gb Ex de IIB Gb Ex de I Mb
Operating temperature range	-45 °C up to +80 °C (IIC) -60 °C up to +80 °C (IIB)
Application temperature <sup>1)</sup>	-45 °C up to +55 °C (IIC) -60 °C up to +55 °C (IIB)
Rated voltage	up to 250 V
Power consumption (VA)	max. 1 W
Resistance range	100 – 10000 Ohm
Tolerance	± 20 %
Connecting terminals	2 x 2.5 mm <sup>2</sup>
Degree of protection accd. to EN 60529	IP66 (installed condition)
Dimensions (L x W x H)	approx. 59 x 31 x 45 mm
Weight	0.15 kg
Type of mounting	DIN rail mounting
Enclosure colour	grey
Angle of rotation	270°
Scale	0 - 100 %

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account.  
See also pages 2.4.34/35.

### Ordering code for component (Code 2) Code A - C

Code	Component	Code
A	Potentiometer	POT

Code	Resistance	Code
C	0 - 100 Ohm	01
	0 - 220 Ohm	02
	0 - 470 Ohm	03
	0 - 1000 Ohm	04
	0 - 2200 Ohm	07
	0 - 4700 Ohm	05
	0 - 10000 Ohm	06

### Example for ordering code (Code 2)

Content	Code
<b>Potentiometer 1 W 25 % tolerance</b>	
0 - 100 Ohm	POT 01
0 - 470 Ohm	POT 03
0 - 4700 Ohm	POT 05



Signal lamp

**Technical data**

Ex-signal lamp SIL	
Marking accd. to 94/9/EC	⊕ II 2 G Ex d e IIC/IIB Gb / ⊕ II 2 G Ex d ia IIC/IIB Gb
EC-Type Examination Certificate	IBExU 12 ATEX 1047 U
IECEX Certificate of Conformity	IECEX IBExU 13.0031U
Marking accd. to IECEx	Ex de IIC/IIB Gb Ex d ia IIC/IIB Gb
Operating temperature range	-45 °C up to +68 °C (IIC) -60 °C up to +68 °C (IIB)
Application temperature <sup>1)</sup>	-45 °C up to +60 °C (IIC) -60 °C up to +60 °C (IIB)
Rated voltage (Ex ed IIC)	20 V up to 254 V AC/DC
(Ex d ia IIC)	10 V up to 30 V DC
(Ex ed IIC)	12 V up to 24 V AC/DC
Rated current	20 V to 254 V approx. 4 - 15 mA 10 V up to 30 V (Ex d ia IIC) max. 25 mA 12 V up to 24 V max. 24 mA
Max. values for Ex ia	U <sub>i</sub> = 30 V DC, I <sub>i</sub> = 100 mA, P <sub>i</sub> = 750 mW
Connecting terminals	2 x 2.5 mm <sup>2</sup>
Degree of protection accd. to EN 60529	IP66
Dimensions (L x W x H)	approx. 59 x 31 x 45 mm
Weight	0.15 kg
Type of mounting	DIN rail mounting
Enclosure colour	grey

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.4.34/35.

**Ordering code for component (Code 2) Code A - C - D**

Code	Component	Code
A	Signal lamp	SIL
Code	Colour of the lens	Code
C	white	1
	yellow	2
	red	3
	blue	4
	green	5
Code	Voltage	Code
D	20 V - 254 V AC/DC	10
	10 V - 30 V DC (Ex-i) <sup>1)</sup>	34
	12 V - 24 V AC/DC	11

<sup>1)</sup> Supply by valve-driver components, e. gl., with data:

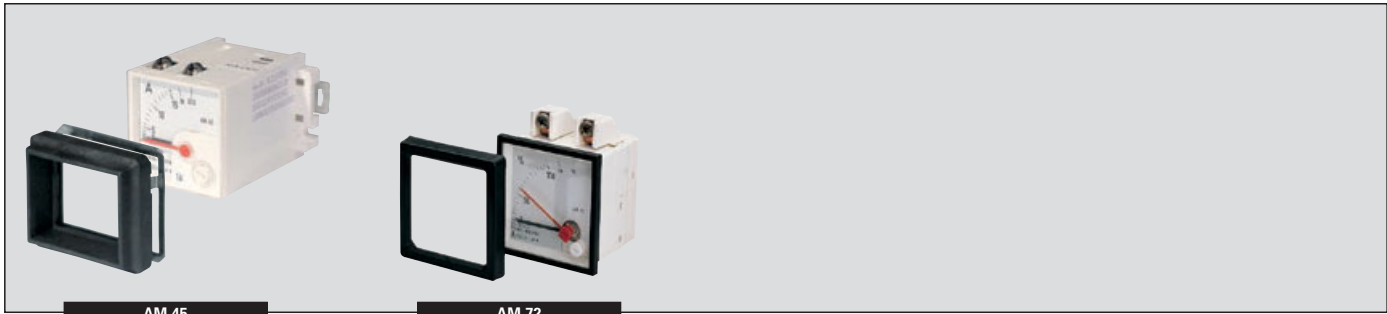
U<sub>o</sub> = 20 V - 18 V DC with R<sub>i</sub> = 200 Ω - 500 Ω or U<sub>o</sub> = 10 V - 18 V DC with R<sub>i</sub> = 100 Ω - 200 Ω

No effective C<sub>i</sub> and L<sub>i</sub> values.

**Example for ordering code (Code 2)**

Content	Ordering code		
	A	C	D
<b>Signal lamp SIL (examples)</b>			
Universal voltage 20 V - 250 V AC/DC white	SIL	1	10
For intrinsically safe circuits 18 V up to 30 V DC blue	SIL	4	34
Low voltage 12 V up to 24 V AC/DC red	SIL	3	11

## Built-in components



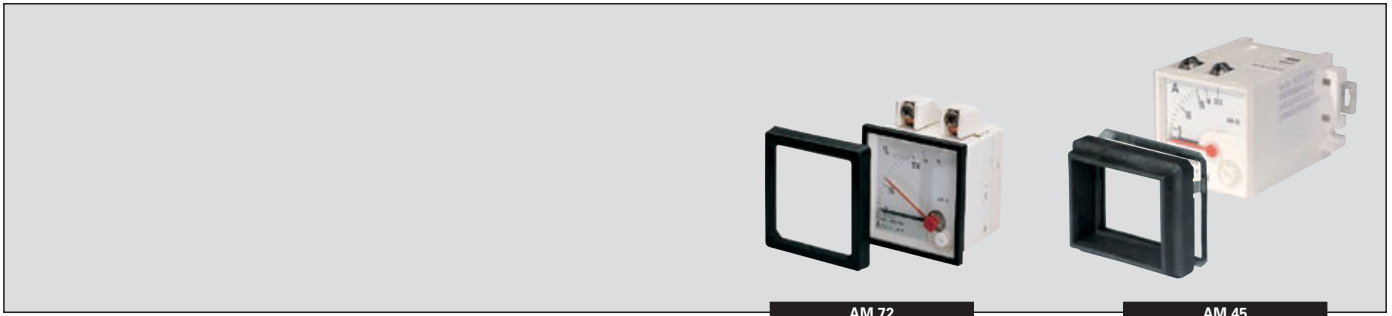
AM 45

AM 72

4

## Technical data

Ex-measuring instrument AM 45/AM 72	Moving iron	Moving coil
Marking accd. to 94/9/EC	⊕ II 2 G Ex e II / ⊕ II 2 G Ex e mb II ⊕ I M 2 Ex e I	⊕ II 2 G Ex ib IIC ⊕ I M 2 Ex ib I
EC-Type Examination Certificate	PTB 99 ATEX 2032 U	
Application temperature	-20 °C up to +40 °C -55 °C up to +55 °C (option)	
Rated voltage	up to 420 V (AM 45) up to 750 V (AM 72)	
Power consumption (VA)	max. 0.31 A	
Overload range	10 fold - 25 sec. 25 fold - 4 sec. 50 fold - 1 sec. indicated 1 : 1.5, optional 1:6, 1:10	10 fold - 5 sec.
Measuring range	max. 0 - 25 A direct / n / 1A	0/4 - 24 mA
Inductance Li		< 0.1 mH
Capacitance Ci		< 0.1 nF
Winding specification of moving coil		26.5 windings
Internal resistance		2.5 Ω ±30 %
Open circuit voltage max. Ui		30 V
Connecting terminals max. Ii		150 mA
Accuracy	Class 2.5	Class 1.5
Movement	Moving iron	Moving coil
Connecting terminals	2 x 1.5 - 4 mm <sup>2</sup>	
Degree of protection accd. to EN 60529	IP66 (installed condition)	
Display size	40 x 40 mm (AM 45) 68 x 68 mm (AM 72)	
Weight	0.35 kg	
Type of mounting	DIN rail mounting	
Enclosure material	Polycarbonate	



AM 72

AM 45

**Ordering code for component (Code 2) Code A - C - D**

Code	Component	Code
A	Measuring instrument AM 45	AM 45
	Measuring instrument AM 72	AM 72

Code	Movement	Code
C	Direct connection	1
	CT connection n/1 A	2
	CT connection n/5 A	3
	Power connection 0 - 20/24 mA (Scale 0-100% / 120%) <sup>1)</sup>	5
	Power connection 4 - 20/24 mA (Scale 0-100% / 120%) <sup>1)</sup>	6
	Moving-coil connection 0 - 20/24 mA (Scale 0-100% / 120%) <sup>1) 3)</sup>	7
	Moving-coil connection 4 - 20/24 mA (Scale 0-100% / 120%) <sup>1) 3)</sup>	8

Code	Measuring range	Code	Measuring range	Code
D	0 - 1	02	0 - 75 / 112.5 A	13
	0 - 2.5 / 3.75 A <sup>2)</sup>	03	0 - 100 / 150 A	14
	0 - 5 / 7.5 A <sup>2)</sup>	04	0 - 150 / 225 A	15
	0 - 10 / 15 A <sup>2)</sup>	05	0 - 200 / 300 A	16
	0 - 15 / 22.5 A	06	0 - 250 / 375 A	17
	0 - 20 / 30 A <sup>2)</sup>	08	0 - 300 / 450 A	18
	0 - 30 / 45 A	09	0 - 400 / 600 A	19
	0 - 40 / 60 A	10	0 - 500 / 750 A	20
	0 - 50 / 75 A	11	0 - 600 / 900 A	21
	0 - 60 / 90 A	12	0 - 100% / 150%	33

<sup>1)</sup> Movements 0 - 20 mA / 4 - 20 mA and with moving-coil connection are only available with scale 0 - 100 %/120 %

<sup>2)</sup> Version for direct connection or with CT connection n/1 A possible.

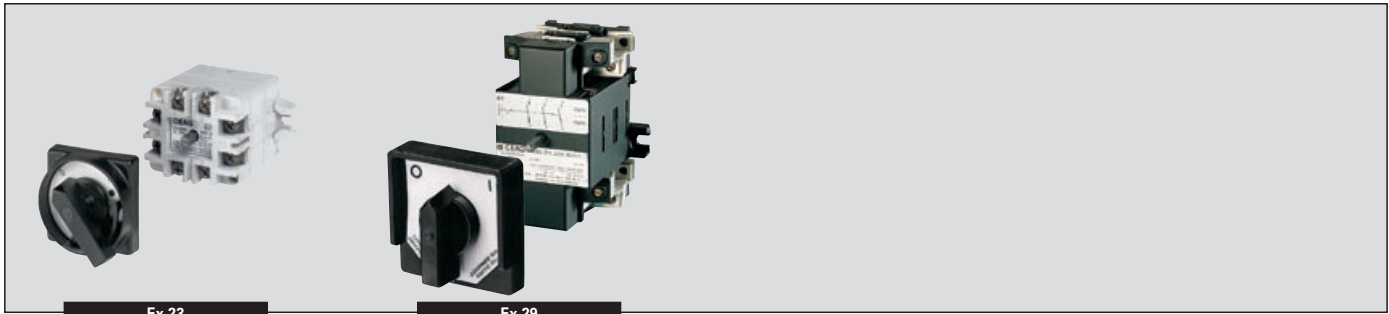
<sup>3)</sup> Moving coil only for Ex-i or Ex-d flameproof applications

Other interchangeable scales available on request

**Example for ordering code (Code 2)**

Movement	Measuring range	Ordering code		
		A	C	D
<b>Measuring instrument AM 45</b>				
<b>Version with direct connection</b>				
Direct (moving iron)	0 - 1 / 1.5 A	AM45	1	02
Direct (moving iron)	0 - 10 / 15 A	AM45	1	05
0 - 20 / 24 mA (moving coil)	0-100% / 120%	AM45	5	33
4 - 20 / 24 mA (moving coil)	0-100% / 120%	AM45	6	33
<b>Moving iron measuring instrument AM 72</b>				
<b>Version with CT connection n/1A</b>				
Converter n / 1A	0 - 100% / 150%	AM72	2	33
<b>Moving-coil measuring instrument AM 45 (Ex-i application only)</b>				
<b>Version with direct connection</b>				
0 - 20 / 24 mA	0-100% / 120%	AM45	7	33
4 - 20 / 24 mA	0-100% / 120%	AM45	8	33

## ■ Built-in components ■



Ex 23

Ex 29

4

### Technical data

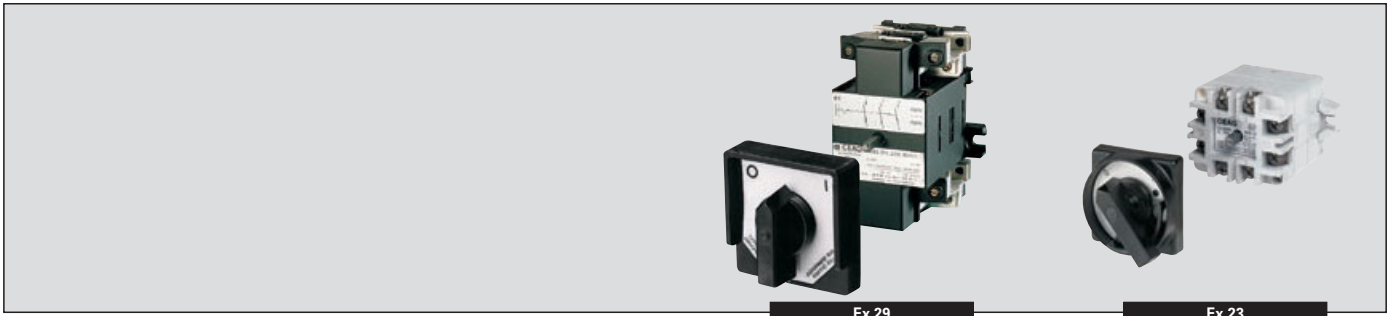
#### Ex-Built-in components for individual control stations

##### Control switch Ex 23 and Ex 29

	Ex 23	Ex 29
Marking accd. to 94/9/EC	Ⓢ I M2 Ex d e I Mb Ⓢ II 2G Ex d e IIB/IIC Gb Ⓢ II 2G Ex d ia/ib IIB/IIC Gb	Ⓢ II 2 G Ex de IIC
IECEX Certificate of Conformity	IECEX IBE 13.0108 U	
Marking accd. to IECEx	Ex d e I Mb Ex d e IIB/IIC Gb Ex d ia/ib IIB/IIC Gb	
EC-Type Examination Certificate	BVS 13 ATEX E 107U	PTB 98 ATEX 1118 U
Operating temperature range	-45 °C up to +80 °C (IIC) -60 °C up to +80 °C (IIB)	
Application temperature <sup>1)</sup>	-45 °C up to +55 °C (IIC) -60 °C up to +55 °C (IIB)	-20 °C up to +40 °C -55 °C up to +55 °C (option)
Rated voltage	up to 500 V	up to 500 V
Rated current	10 A	16 A <sup>2)</sup>
Rated current with gold contact points	0.4 A	0.4 A
Rated making-/rated breaking capacity accd. EN 60947-5-1	AC-15: U <sub>e</sub> 230 V / I <sub>e</sub> 6 A U <sub>e</sub> 500 V / I <sub>e</sub> 4 A DC-13: U <sub>e</sub> 24 V / I <sub>e</sub> 6 A U <sub>e</sub> 230 V / I <sub>e</sub> 0.5 A	AC-15: U <sub>e</sub> 230 V / I <sub>e</sub> 6 A U <sub>e</sub> 400 V / I <sub>e</sub> 4 A DC-13: U <sub>e</sub> 24 V / I <sub>e</sub> 2 A U <sub>e</sub> 230 V / I <sub>e</sub> 0.3 A
Connecting terminals	2 x 0.5 - 2.5 mm <sup>2</sup>	2 x 0.5 - 2.5 mm <sup>2</sup> or 1 x 1.0 - 6.0 mm <sup>2</sup>
Weight	1 level: approx. 0.2 kg 2 level: approx. 0.35 kg 3 level: -	approx. 0.25 kg approx. 0.40 kg approx. 0.55 kg
Type of mounting	DIN rail mounting	
Enclosure colour	grey	black

<sup>1)</sup> The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.4.34/35.

<sup>2)</sup> min. cross section of used cable  $\geq$  12 A: 2.5 mm<sup>2</sup>



Ex 29

Ex 23

**Ordering code for component (Code 2) Code A - C - D - E - F**

Code	Component	Code
A	Ex 23	Ex 23
	Ex 29	Ex 29

Code	Switching system	Code
C	spring – engaging – spring	4
	engaging – engaging – engaging	5
	engaging – engaging	6
	spring – engaging – engaging	7
	engaging – engaging – spring	8

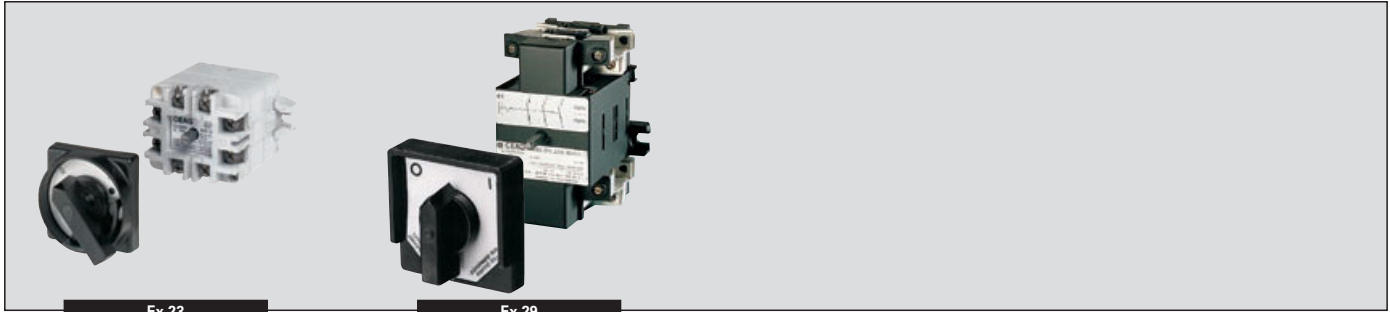
Code	Contacts	Silver contact points	Code	Silver contact points
D		060		034
		062		037
		065		049
		061		023
		063		019
		067		033
		011		024

Versions with gold contact points are available on request.  
 Versions with compulsory NO are possible.

Code	Inscription (labels)	Code	Inscription	Code
E	0 I	01	0 I II	18
	I II	02	AUS AUTO EIN	19
	STOP START	03	AUS HAND AUTO	20
	HAND AUTO	04	ÖRTLICH AUS FERN	21
	SENKEN HEBEN	05	START NORMAL STOP	22
	REMOTE LOCAL	06	OFF 0 ON	23
	I 0 II	07	HAND OFF AUTO	24
	AUS BETRIEB EIN	08	0 IN START	25
	AUS 0 EIN	09	MAN AUTO	26
	AUF 0 AB	10	START STOP	27
	Entriegelt 0 Verriegelt	11	HEBEN SENKEN	28
	OUT OF HAND	12	OFF ON	29
	LOCAL REMOTE AUTO	13	AUS EIN	30
	STOP 0 START	14	HAND AUTO	31
	HAND 0 AUTO	15	ON OFF	32
	AUF AUS ZU	16	I II III	33

Code	Padlocking facility	Code
F	none	0
	centre	1
	right	2
	left	3

## Built-in components



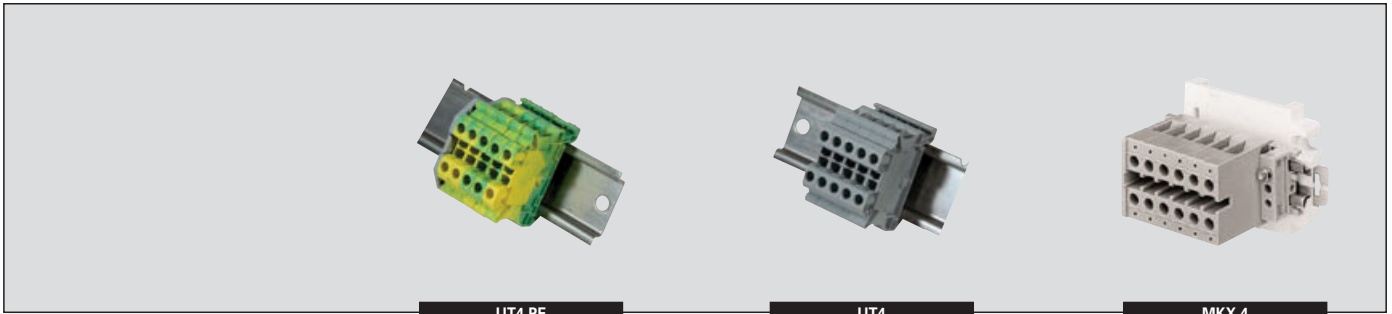
Ex 23

Ex 29

### 4 Example for ordering code (Code 2)

Content A	Component Switching system B	Contacts C	Label D	Padlocking facility E	Ordering code				
					A	B	C	D	E
Ex 23	6		060 I - II 02	none 0 <input type="checkbox"/>	Ex 23	6	060	02	0
Ex 23	5		034 I - 0 - II 07	centre 1 <input type="checkbox"/>	Ex 23	5	034	07	1
Ex 29	6		060 I - II 02	left 0 <input type="checkbox"/>	Ex 29	6	060	02	0
Ex 29	6		065 0 - I 01	right 2 <input type="checkbox"/>	Ex 29	6	065	01	2

Other combination available on request



UT4 PE

UT4

MKX 4

**Technical data**

**Ex-Built-in components for individual control stations**

**Terminals**

	MXK 4-Ex	UT 4 / UT 4 PE
Marking accd. to 94/9/EC	⊕ II 2 G Ex e II	⊕ II 2 G Ex e II ⊕ II 2 D Ex e II
EC-Type Examination Certificate	PTB 99 ATEX 3132U	KEMA 04 ATEX 2048 U
IECEX Certificate of Conformity	IECEX KEMA 06.0027U	
Marking accd. to IECEX	Ex e II	
Application temperature	-50 °C up to +55 °C	-50 °C up to +55 °C
Rated voltage	up to 420 V	up to 690 V
Rated current	max. 27 A	max. 30 A
Connecting terminals	4 mm <sup>2</sup>	0.14 mm <sup>2</sup> - 4 mm <sup>2</sup> multi-wire 0.14 mm <sup>2</sup> - 6 mm <sup>2</sup> solid-wire
Dimensions (L x W x H)	6.2 mm width	47.7 mm x 6.2 mm
Weight	0.01 kg	0.01 kg
Type of mounting	NS 35 DIN rail mounting	NS 35 DIN rail mounting
Enclosure colour	grey	grey



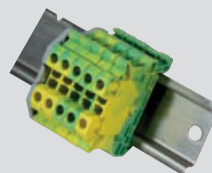
## Built-in components



MKX 4



UT4



UT4 PE

4

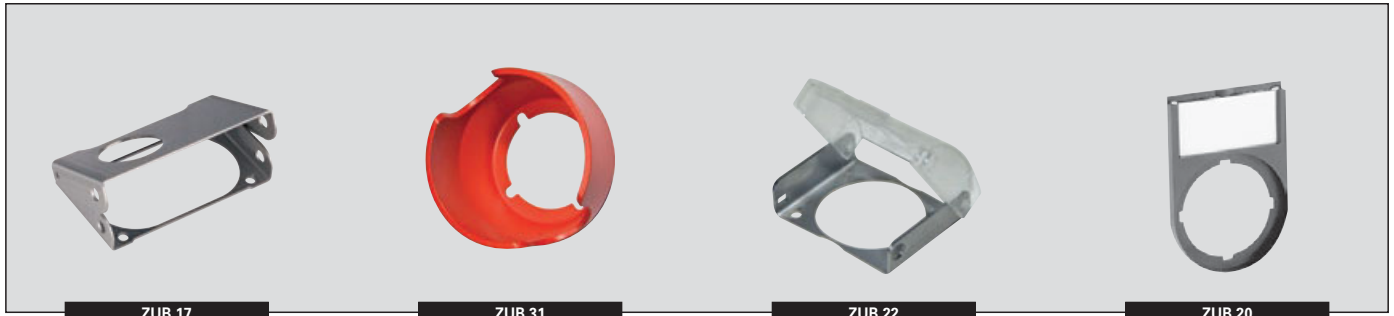
### Ordering code for component (Code 2) Code A - C - D - E - F

Code	Component	Code
A	KLM	KLM
Code	Content	Code
C	Ex-e	1
	Ex-i	2
Code	Terminal type	Code
D	Terminal block MXK4-Ex max. 6 terminals	B
	Terminal insert max. 3 terminals	E
	Terminals UT 4 / UT 4 PE	A
Code	Number of terminals	Code
E	1	001
	2	002
	3	003
	ect.	ect.

Other variants, e.g. modules with resistors or fine-wire fuses, available on request.

### Example for ordering code (Code 2)

Content	Number	Ordering code				
		A	C	D	E	F
Terminal block MXK 4-EX 6 x Ex-e terminals MXK 4 + 1 PE-terminal Ex-e connection terminals		6	KLM	1	B	006 01
Terminal UK 4 12 x Ex-e terminals UT 4 + 2 PE-terminals Ex-e terminals		12	KLM	1	A	012 02



**Ordering code for labels and locking facilities (Code 3) Code A - B - C - D**

Code	Label	Code
A	52.0 x 13 mm 37.0 x 17 mm with holder	ZUB 19 ZUB 20

Code	Inscription	Code
B	text to be determined	1 ... 4

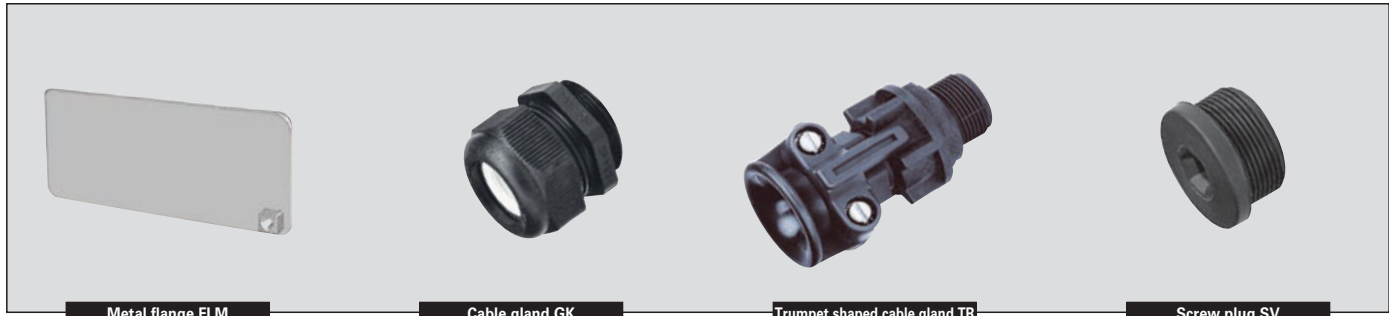
Code	Padlocking facility	for operating element	Material	Code
C	with flap (blank)	pushbutton	stainless steel	ZUB 12
	with flap (red)	pushbutton	stainless steel	ZUB 13
	with flap without „0“ activated	double pushbutton	stainless steel	ZUB 16
	with flap with „0“ activated	double pushbutton	stainless steel	ZUB 17
	with flap (blank)	mushroom-head pushbutton	stainless steel	ZUB 02
	with flap (red)	mushroom-head pushbutton	stainless steel	ZUB 01
	with bolt and chain	mushroom-head pushbutton	stainless steel	ZUB 14
	Fire alarm (red) with hammer	mushroom-head pushbutton	stainless steel	ZUB 15
	Fire alarm (red) with hammer	activates alarm when broken	stainless steel	ZUB 05
	with flap, with activated	pushbutton	plastic	ZUB 23
	with flap, not activated	pushbutton	plastic	ZUB 24
	with flap, with activated	mushroom-head pushbutton	plastic	ZUB 22
	with flap, not activated	mushroom-head pushbutton	plastic	ZUB 21
	protective collar yellow	pushbutton / mushroom-head pushbutton	light alloy	ZUB 30
protective collar red	pushbutton / mushroom-head pushbutton	light alloy	ZUB 31	

Code	Mounting area	Code
D		1 ... 4

**Example for ordering code**

Content	Number	Ordering code			
		A	B	C	D
Protective collar yellow at mounting area 3	X	-	-	ZUB 30	3

## ■ Built-in components ■



Metal flange FLM

Cable gland GK

Trumpet shaped cable gland TR

Screw plug SV

4

### Ordering code for cable glands and flanges (Code 4) Code A - B - C - D - E

Code	Content	Component	Code
A	Entry type	Entry direct in enclosure	GEH
		Entry via plastic flange	FLK
		Entry via metal flange	FLM
B	Entry side Position	Entry side on bottom (left or right)	1, 2
		Entry side on top (left or right)	3, 4
C	Entry element	Only entry	OE
		Threaded entry	BO
		Screw plug	SV
		Cable plastic gland	GK
		Cable metal* gland	GM*
		Cable entry with plastic plug	GV
		Trumpet-shaped plastic gland	TR
D	Size	M12, M16, M20, M25, M32, M40, M50, M63	M..
		Ø21, Ø26	d..
E	Number	Number of entries	..

\*For metal glands, the type of cable/entry must be stated in plain language in the order.

Other versions on request.

### Example for ordering code

Content	Number	Ordering code				
		A	B	C	D	E
2 cable entries M25 moulded plastic Version without plug direct from below into the enclosure	X	GEH	3	GK	M25	02