

Ex Control Stations for Individual Configuration

Moulded-plastic version for Zone 1, 21, 2 and 21

4

CEAG control stations can be combined according to customers' specifications. Quick fixing allows up to three CEAG built-in components, such as signal lamps, pushbuttons and switches, to be snapped on a rail in the enclosure. The enclosures consist of low-temperature impact-resistant thermoplastic which fulfils the requirements of EN 60079 and provides a high resistance to chemicals. The well thought out design with low side walls allows optimum cable connection. The components can be snapped out of the enclosure to facilitate cable-entry feeding. Notches in the mounting rails prevent the

built-in components from being twisted out of place.

CEAG's optional mounting plates offer a time-saving fixing technique. Coupling pieces link enclosures to each other and prevent them from being twisted out of place. Alternatively, metal screws and flanges can be used for mounting – the metal flanges also enable external earthing.

The built-in components differ in size. The diverse enclosure types allow variable combinations of these components. Example diagrams of the enclosure types show the placement options for the built-in components with numbers or predefined positions.

Free mounting areas can be provided for retrofitting certified CEAG components. These are then factory sealed with blanking elements.



Features

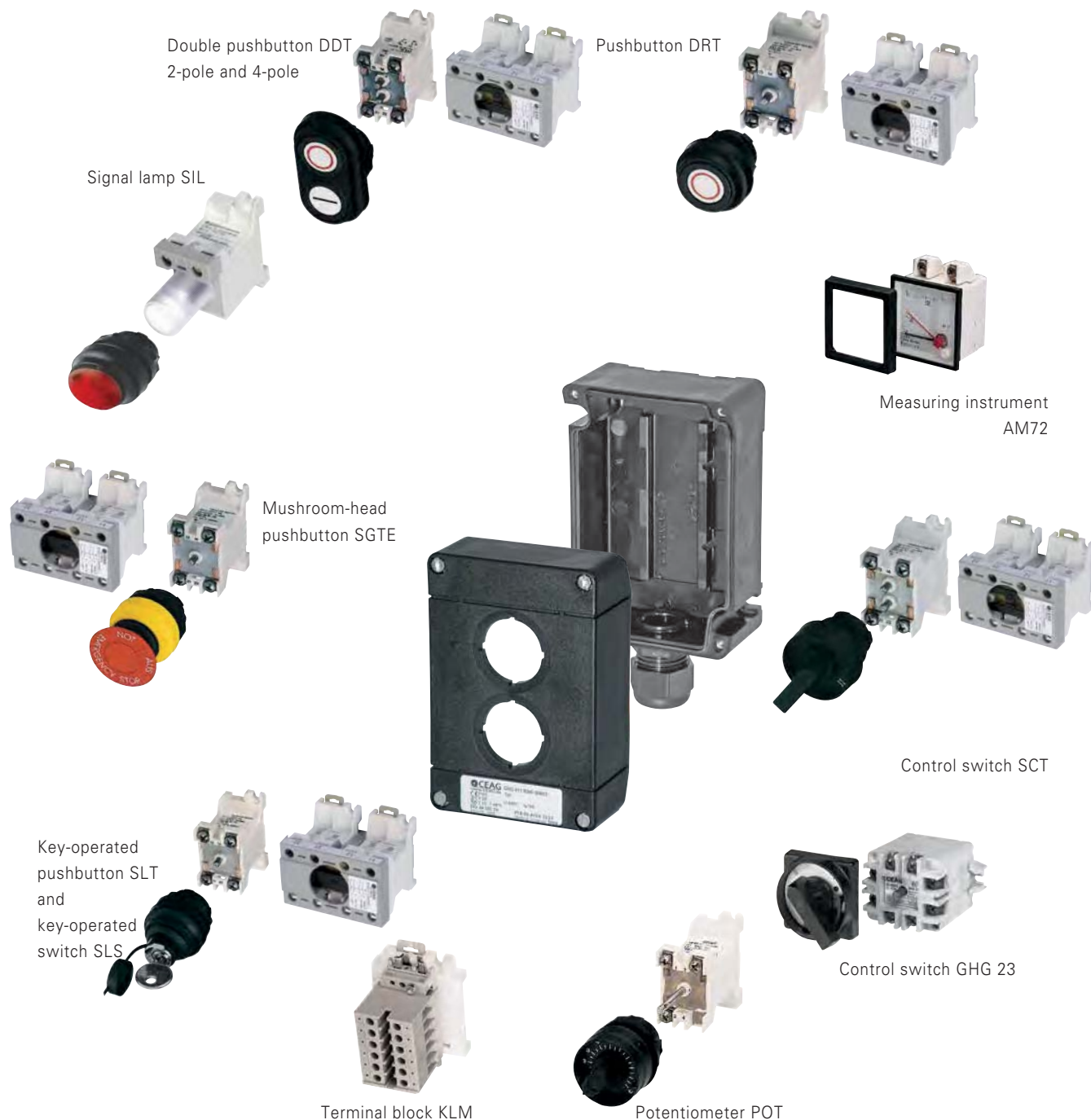
- Flat side walls
- Quick fixing for all built-in components
- High chemical resistance
- Different enclosures can be combined

Customised control stations, covered by type examination certificates, can be individually combined from CEAG's numerous built-in components.

A coding system for these components with unique designations

can be used for planning, selection and ordering. The sum of the code numbers designates a complete control station.

For the selection of control units and components, please see page 2.4.36 pp.



For an easy selection of certified components two temperature information are provided:

1. Operating temperature range

This defines the max. permitted temperature range of component in the installed state. This has to be considered when configuring

2. Ambient temperature range

These temperature range defines the expected ambient temperature range for a fully planned equipment and is based on the experiences of configured devices at normal installation conditions. However, it must be observed in any case, the conditions of the type examination certificate. These temperatures are purely based on explosion protection. Mechanical and electrical function based on the installation situation (e.g. self-heating) have to be considered. For binding function ambient temperatures please refer to the product manual.

Order code for individual control units

Individual control units can be defined by 4 groups of components:

1. Empty Enclosure
2. Components per mounting area
3. Accessories
4. Cable glands

Code 1: Empty enclosure



Code for enclosure

MA		411 81
MA		411 82
MA		411 83
MA		432
MA		434
MA		414 81
MA		414 82
MA		413 84
MA		413 85

Code 2: Components per mounting area (max. 4)

A	C	D(1)	(D2)	E	F	Mounting area 1 MA1
A	C	D(1)	(D2)	E	F	Mounting area 2 MA2
A	C	D(1)	(D2)	E	F	Mounting area 3 MA3
A	C	D(1)	(D2)	E	F	Mounting area 4 MA4



Example: Enclosure Type 434,
 Pushbutton (MA4),
 Signal lamp (MA3)
 Emergency stop
 Mushroom head pushbutton (MA2)
 Double pushbutton (MA1)

Code 1: 434..
 Code 2 MA4: DRT 14 001
 Code 2 MA3: SIL 1 10
 Code 2 MA2 SGTE 13 1 1 2
 Code 2 MA1: DDT15 001 007

Code 3 MA1: ZUB 19
 Code 3 MA2: ZUB 19
 Code 3 MA3: ZUB 02
 Code 3 MA4: --
 Code 4: GEH 1 GK M25 2

Code 3: Labels and padlocking facility

A	B	C	Mounting area 1 MA1
A	B	C	Mounting area 2 MA2
A	B	C	Mounting area 3 MA3
A	B	C	Mounting area 4 MA4



Label with holder
ZUB 20



Padlocking facility mushroom-head
pushbutton ZUB 14



Padlocking facility with hammer
ZUB 05



Padlocking facility mushroom-head
pushbutton ZUB 22



Padlocking facility double pushbutton
ZUB 17

Code 4: Cable entries and flanges

A	B	C	D	E



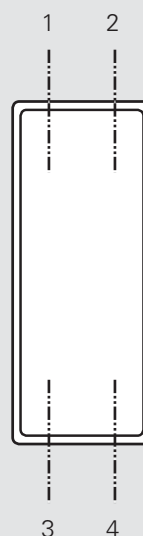
Metal flange plate
FLM



Plastic cable gland GK



Plastic trumpet-shaped
cable gland TR



Position for
drilling/gland



Type 411 81



Type 411 82



Type 432



Type 434

4 Technical data

Ex-control stations Type 41. and 43. for individual configuration

Marking accd. to 2014/34/EU	Ⓢ II 2 G Ex ed ib m IIC T6 ¹⁾ Ⓢ II 2 D Ex tD A21 IP66 T80 °C
EC-Type Examination Certificate	PTB 00 ATEX 3117 ¹⁾
IECEX Certificate of Conformity	IECEX BK1 04.0003 ¹⁾
Marking accd. to IECEx	Ex e II T6, Ex e ib IIC T6, Ex ed IIC T6 or Ex ed ib IIC T6 ¹⁾
Permissible ambient temperature	-20 °C up to +40 °C ¹⁾ -55 °C up to +55 °C (option)
Rated voltage	690 V AC
Rated current	16 A
Connecting terminals	2 x 4 mm ²
Protection class	I
Degree of protection accd. to EN 60529	IP66 (standard)
Enclosure material	Polyamide
Enclosure colour	black

Type 411 81

Cable glands/Gland plates/Enclosure drilling	Ex e cable glands max. 2 x M25; 2 x M20 thread
Dimensions (L x W x H)	85 x 85 x 77.5 mm
Weight (empty)	0.25 kg
Components arrangement	1 mounting area

Type 411 82

Cable glands/Gland plates/Enclosure drilling	Ex e cable glands max. 2 x M25; 2 x M20 thread
Dimensions (L x W x H)	125 x 85 x 77.5 mm
Weight (empty)	0.35 kg
Components arrangement	2 mounting areas

Type 411 83

Cable glands/Gland plates/Enclosure drilling	Ex e cable glands max. 2 x M25; 2 x M20 thread
Dimensions (L x W x H)	165 x 85 x 77.5 mm
Weight (empty)	0.45 kg
Components arrangement	3 mounting areas

Type 432

Cable glands/Gland plates/Enclosure drilling	Ex e cable glands max. 2 x M25; 3 x M20 thread
Dimensions (L x W x H)	156 x 100 x 90 mm
Weight (empty)	0.47 kg
Components arrangement	2 mounting areas

Type 434

Cable glands/Gland plates/Enclosure drilling	Ex e cable glands max. 2 x M25; 3 x M20 thread
Dimensions (L x W x H)	245 x 100 x 90 mm
Weight (empty)	0.70 kg
Components arrangement	4 mounting areas

¹⁾ Data for ready configured product



Type 434



Type 432



Type 411 82



Type 411 81

Ordering codes (Code 1)

1. Enclosure	2. Components arrangement/terminals				3. Labels/ padlocking facility	4. Cable glands
	Mounting area 1	Mounting area 2	Mounting area 3	Mounting area 4		
411 81 ¹⁾	X	–	–	–	X	X
411 82	X	X	–	–	X	X
411 83	X	X	X	–	X	X
432	X	X	–	–	X	X
434	X	X	X	X	X	X

Possible components (Code 1)

Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ²⁾)	DRT	Measuring instrument	AM72 ²⁾
Double pushbutton (2-pole or 4-pole ²⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ²⁾)	SLT	Signal lamp	SIL
Key-operated switch (2-pole or 4-pole ²⁾)	SLS	Potentiometer	POT
Control switch (2-pole or 4-pole ²⁾)	SCT	Terminal block (4 mm ²)	KLM
Mushroom-head pushbutton (2-pole or 4-pole ²⁾)	SGT	Blanking element	BLV
Control switch	GHG 23 ³⁾		

¹⁾ 4-pole component not possible

²⁾ 2 mounting areas are needed

³⁾ only for type 43., 2 mounting areas are needed



Type 411 81



Type 411 82



Type 432

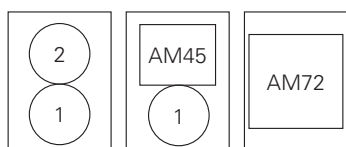
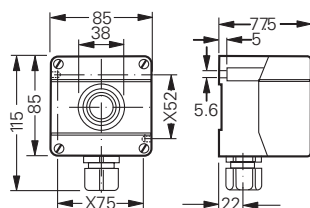


Type 434

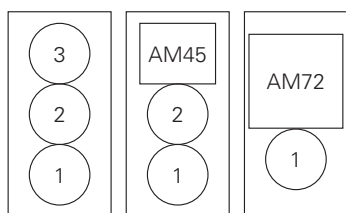
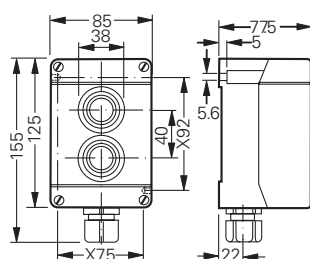
4 Mounting areas | Dimension drawing



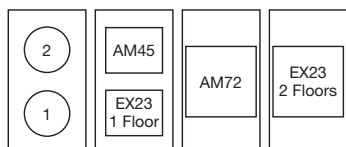
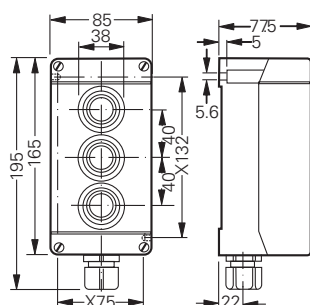
Type 411 81



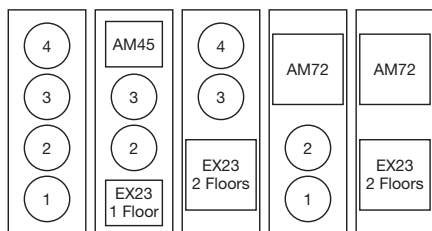
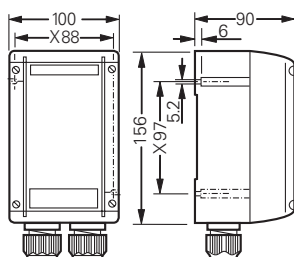
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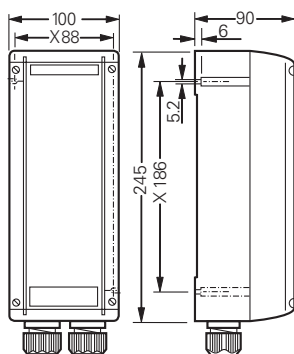
Type 411 83



Type 432



Type 434



X = fixing dimension

Dimensions in mm



Type 414 82



Type 414 81



Type 413 85



Type 413 84

Technical data

4

Ex-control stations type 413. and 414. for individual configuration

Marking accd. to 2014/34/EU	Ⓢ II 2 G Ex ed ib m IIC T6 ¹⁾ Ⓢ II 2 D Ex tD A21 IP66 T80 °C
EC-Type Examination Certificate	PTB 00 ATEX 3117 ¹⁾
IECEx Certificate of Conformity	IECEx BK1 04.0003 ¹⁾
Marking accd. to IECEx	Ex e II T6, Ex e ib IIC T6, Ex ed IIC T6 or Ex ed ib IIC T6 ¹⁾
Permissible ambient temperature	-20 °C up to +40 °C ¹⁾ -55 °C up to +55 °C (option)
Rated voltage	690 V AC
Rated current	16 A
Connecting terminals	see technical data for built-in components
PE-connecting terminals	2 x 4 mm ²
Protection class	I
Degree of protection accd. to EN 60529	IP66 (standard)

Type 413 84

Type 413 85

Cable glands/Gland plates/Enclosure drilling	max. 2 x M25; 2 x M20	max. 2 x M25; 2 x M20
Dimensions (L x W x H)	122 x 120 x 81 mm	122 x 120 x 81 mm
Weight (empty)	0.85 kg	1.45 kg
Enclosure material	cast aluminium-silicon (AlSi)	cast aluminium-silicon (AlSi)
Enclosure colour	grey RAL 7031	grey RAL 7031
Components arrangement	2 mounting areas	4 mounting areas

Type 414 81

Type 414 82

Cable glands/Gland plates/Enclosure drilling	max. 3 x Ø 21 for cable gland M20 max. 2 x Ø 25.5 for cable gland M25	max. 4 x Ø 21 for cable gland M20 max. 2 x Ø 25.5 for cable gland M25
Dimensions (L x W x H)	166 x 140 x 76 mm	286 x 140 x 76 mm
Weight (empty)	1.40 kg	2.10 kg
Enclosure material	stainless steel AISI 316 L	stainless steel AISI 316 L
Enclosure colour	polished	polished
Components arrangement	2 mounting areas	4 mounting areas

¹⁾ Data for ready configured product



Type 413 84



Type 413 85



Type 414 81



Type 414 82

4 Ordering codes (Code 1)

1. Enclosure	2. Components arrangement/terminals				3. Labels/ padlocking facility	4. Cable glands
	Mounting area 1	Mounting area 2	Mounting area 3	Mounting area 4		
413 84	X	X	–	–	X	X
413 85	X	X	X	X	X	X
414 81	X	X	–	–	X	X
414 82	X	X	X	X	X	X

Possible components (Code 1)

Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ¹⁾)	DRT	Measuring instrument	AM72 ¹⁾
Double pushbutton (2-pole or 4-pole ¹⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ¹⁾)	SLT	Signal lamp	SIL
Key-operated switch (2-pole or 4-pole ¹⁾)	SLS	Potentiometer	POT
Control switch (2-pole or 4-pole ¹⁾)	SCT	Terminal block (4 mm ²)	KLM
Mushroom-head pushbutton (2-pole or 4-pole ¹⁾)	SGT	Blanking element	BLV
Control switch	GHG 23 ¹⁾		

¹⁾ 2 mounting areas are needed



Type 414 82



Type 414 81

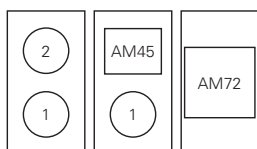


Type 413 85

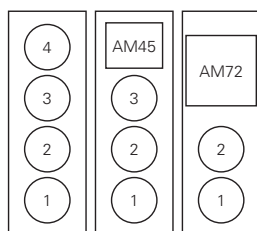
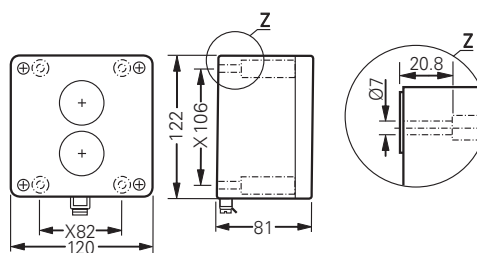


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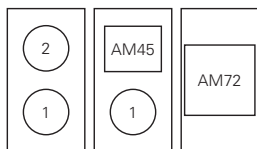
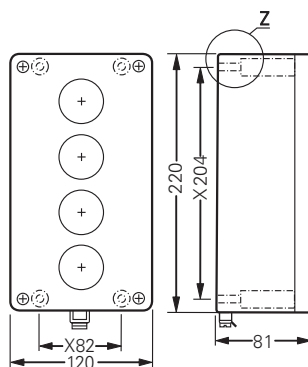
Mounting areas | Dimension drawing



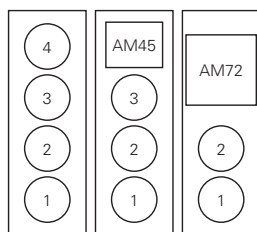
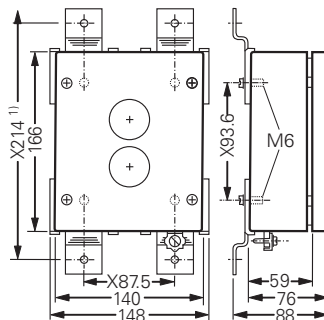
Type 413 84



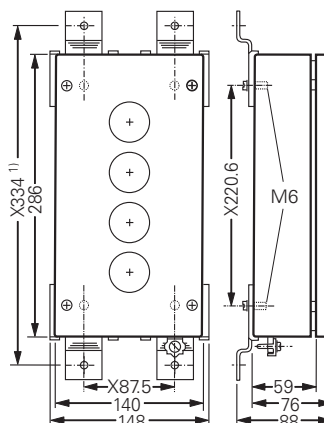
Type 413 85



Type 414 81



Type 414 82



X = fixing dimension

Ex-control stations - enclosures GHG 44



Type 444 23



Type 448 23



Type 449 23



Type 447 23

4 Technical data

Ex-control stations Typ 444, 448, 449, and 447 for individual configuration

Marking accd. to 2014/34/EU	Ⓢ II 2 G Ex de ia/ib m [ia/ib] IIC T6 ¹⁾ Ⓢ II 2 D Ex tD A21 IP66/IP65 T80 °C
EC-Type Examination Certificate	PTB 99 ATEX 1044 ¹⁾
IECEx Certificate of Conformity	IECEx BKI 07.0023 ¹⁾
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] IIC T4 .. T6 ¹⁾ Ex tD A21 IP66 T80 °C
Permissible ambient temperature	-20 °C up to +40 °C ¹⁾ -55 °C up to +55 °C (option)
Rated voltage	690 V AC
Rated current	40 A
Connecting terminals	see technical data for built-in components
PE-Connecting terminals	2 x 4 mm ²
Protection class	I
Degree of protection accd. to EN 60529	IP66 (standard)
Cable glands/Gland plates/Enclosure drilling	as ordered accd. to manufacturer's specification
Enclosure material	glass-fibre reinforced polyester
Enclosure colour	black

Type 444 23

Connecting terminals	max. 20 terminals UT 4
Dimensions (L x W x H)	271 x 134 x 136 mm
Weight (empty)	1.5 kg with mounting framework
Components arrangement	6 mounting areas

Type 448 23

Connecting terminals	max. 30 terminals UT 4
Dimensions (L x W x H)	271 x 271 x 136 mm
Weight (empty)	2.5 kg with mounting framework
Components arrangement	distance 40 mm max. 18 mounting areas distance 50 mm max. 15 mounting areas distance 60 mm max. 12 mounting areas

Type 449 23

Connecting terminals	max. 60 terminals UT 4
Dimensions (L x W x H)	544 x 271 x 136 mm
Weight (empty)	4.5 kg with mounting framework
Components arrangement	distance 40 mm max. 36 mounting areas distance 50 mm max. 30 mounting areas distance 60 mm max. 24 mounting areas

Type 447 23

Connecting terminals	max. 90 terminals UT 4
Dimensions (L x W x H)	817 x 271 x 136 mm
Weight (empty)	6.5 kg with mounting framework
Components arrangement	distance 40 mm max. 64 mounting areas distance 50 mm max. 45 mounting areas distance 60 mm max. 36 mounting areas

¹⁾ Data for ready configured product



Type 447 23



Type 449 23



Type 448 23



Type 444 23

Ordering codes (Code 1)

1. Enclosure	2. Components arrangement/terminals				3. Labels/ padlocking facility	4. Cable glands
	Mounting 1 ... 6	Mounting 7 ... 18	Mounting 19 ... 27	Mounting 37 ... 64		
444 23	X	–	–	–	X	X
448 23	X	X	–	–	X	X
449 23	X	X	X	–	X	X
447 23	X	X	X	X	X	X

Possible components (Code 1)

Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ²⁾)	DRT	Measuring instrument	AM72 ¹⁾
Double pushbutton (2-pole or 4-pole ²⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ²⁾)	SLT	Signal lamp	SIL
Key-operated switch (2-pole or 4-pole ²⁾)	SLS	Potentiometer	POT
Control switch (2-pole or 4-pole ²⁾)	SCT	Terminal block (4 mm ²)	KLM ... A ²⁾
Mushroom-head pushbutton (2-pole or 4-pole ²⁾)	SGT	Terminal block (4 mm ²)	KLM ... B
Control switch	GHG 23 ¹⁾	Blanking element	BLV

¹⁾ 2 mounting areas are needed²⁾ Serial terminals and PE-Terminal are mounted on a rail below the hinged frame

Ex-control stations - enclosures GHG 44



Type 444 23



Type 448 23

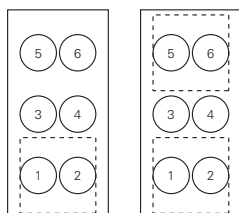
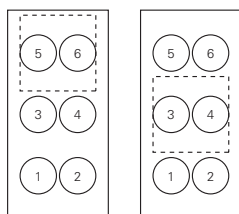


Type 449 23

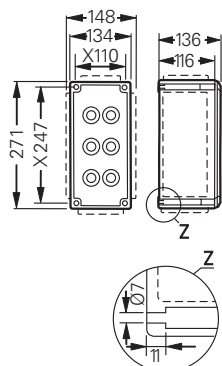


Type 447 23

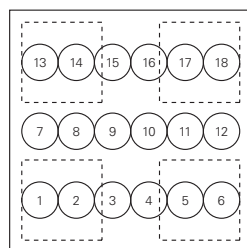
4 Mounting areas I Dimension drawing



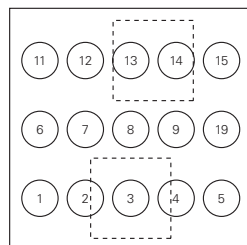
Distance between centres 40, 50 and 60 mm for positioning of built-in components



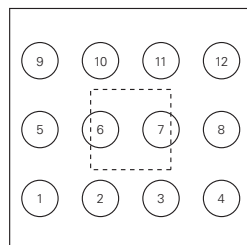
Type 444 23



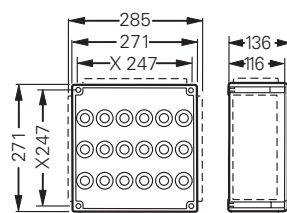
Distance between centres 40 mm



Distance between centres 50 mm



Distance between centres 60 mm



Type 448 23

X = fixing dimension

= mounting space for switch, pushbutton (2-pole) or signal lamp

= mounting space for switch, pushbutton (4-pole) ampere- or voltmeter



Type 447 23



Type 449 23



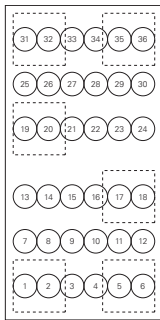
Type 448 23



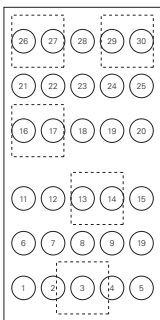
Type 444 23

Mounting areas I Dimension drawing

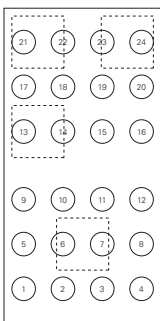
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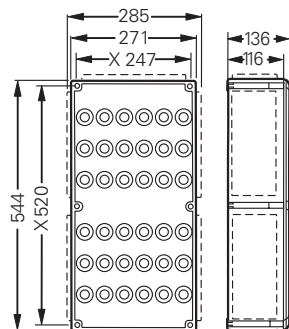
Distance between centres 40 mm



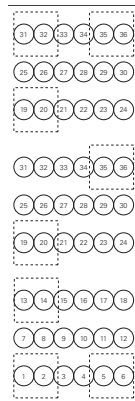
Distance between centres 50 mm



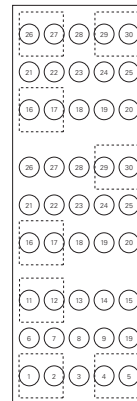
Distance between centres 60 mm



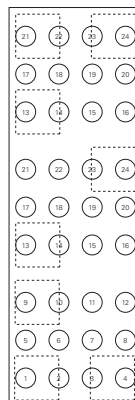
Type 449 23



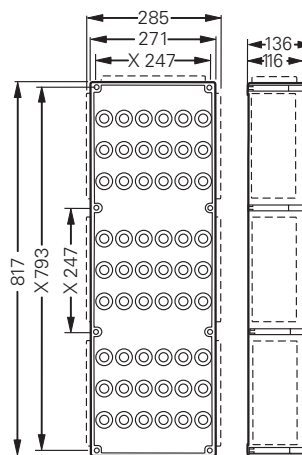
Distance between centres 40 mm



Distance between centres 50 mm



Distance between centres 60 mm



Type 447 23

X = fixing dimension

Dimensions in mm


Type 443 34

4 Technical data

Ex-control stations Typ 443 34 for individual configuration

Marking accd. to 2014/34/EU	II 2 G Ex ed ia/ib m IIC T6 ¹⁾ II 2 D Ex tD A21 IP66 T80 °C
EC-Type Examination Certificate	PTB 01 ATEX 1115 ¹⁾
Permissible ambient temperature	-20 °C up to +40 °C ¹⁾ -55 °C up to +55 °C (option)
Rated voltage	690 V AC
Rated current	63 A
Connecting terminals	as ordered accd. to manufacturer's specification
PE-Connecting terminals	2 x 4 mm ²
Protection class	I
Degree of protection accd. to EN 60529	IP66
Cable glands/Gland plates/Enclosure drilling	as ordered accd. to manufacturer's specification
Dimensions (L x W x H)	280 x 180 x 90 mm
Weight	2.3 kg with mounting framework
Enclosure material	cast aluminium-silicon (AlSi)
Enclosure colour	grey RAL 7031
Components arrangement	max. 9 mounting areas

¹⁾ Data for ready configured product

Ordering codes (Code 1)

1. Enclosure	2. Components arrangement/terminals			3. Labels/ padlocking facility	4. Cable glands
	Mounting 1 ... 3	Mounting 4 ... 6	Mounting 7 ... 9		
443 34	X	X	X	X	X

Possible components (Code 1)

Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ²⁾)	DRT	Measuring instrument	AM72 ¹⁾
Double pushbutton (2-pole or 4-pole ²⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ²⁾)	SLT	Signal lamp	SIL
Key-operated switch (2-pole or 4-pole ²⁾)	SLS	Potentiometer	POT
Control switch (2-pole or 4-pole ²⁾)	SCT	Terminal block (4 mm ²)	KLM ... A ²⁾
Mushroom-head pushbutton (2-pole or 4-pole ²⁾)	SGT	Terminal block (4 mm ²)	KLM ... B
Control switch	GHG 23 ¹⁾	Blanking element	BLV

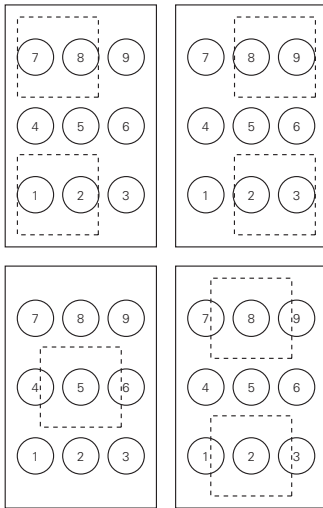
¹⁾ 2 mounting areas are needed

²⁾ Serial terminals and PE-Terminal are mounted on a rail below the hinged frame

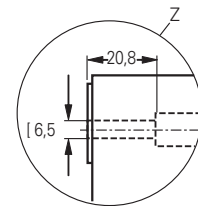
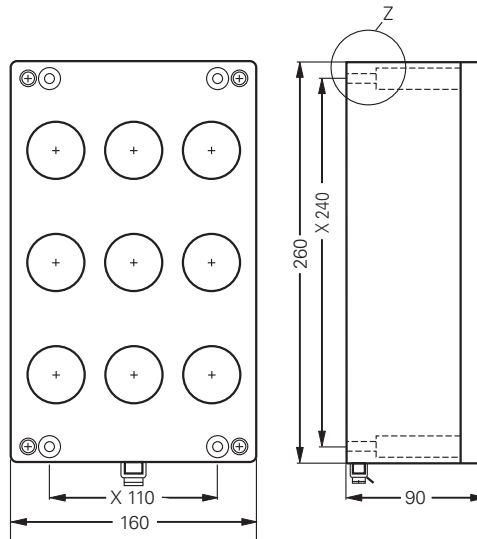


Type 443 34

Mounting areas I Dimension drawing



Distance between centres 40, 50
and 60 mm for positioning
of built-in components



Type 443 34

X = fixing dimension

 = mounting space for switch, pushbutton (2-pole) or signal lamp

 = mounting space for switch, pushbutton (4-pole) ampere- or voltmeter

Ex-control stations - enclosures GHG 44. 33



Type 444 33



Type 448 33



Type 449 33



Type 447 33

4 Technical data

Ex-control stations Typ 444, 448, 449, and 447 stainless steel for individual configuration

Marking accd. to 2014/34/EU	Ⓢ II 2 G Ex de ia/ib m [ia/ib] IIC T6 ¹⁾ Ⓢ II 2 D Ex tD A21 IP66/IP65 T80 °C
EC-Type Examination Certificate	PTB 99 ATEX 1044 ¹⁾
IECEx Certificate of Conformity	IECEx BKI 07.0023 ¹⁾
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] IIC T4 .. T6 ¹⁾ Ex tD A21 IP66 T80 °C
Permissible ambient temperature	-20 °C up to +40 °C ¹⁾ -55 °C up to +55 °C (option)
Rated voltage	690 V AC
Rated current	40 A
Connecting terminals	see technical data for built-in components
PE-Connecting terminals	2 x 4 mm ²
Protection class	I
Degree of protection accd. to EN 60529	IP66 (standard)
Cable glands/Gland plates/Enclosure drilling	as ordered accd. to manufacturer's specification
Enclosure material	Stainless steel AISI 316 L
Enclosure colour	polished

Type 444 33

Connecting terminals	max. 20 terminals UT 4
Dimensions (L x W x H)	312.5 x 175 x 135 mm
Weight (empty)	3.5 kg with mounting framework
Components arrangement	6 mounting areas

Type 448 33

Connecting terminals	max. 30 terminals UT 4
Dimensions (L x W x H)	312.5 x 312.5 x 135 mm
Weight (empty)	7.5 kg with mounting framework
Components arrangement	distance 40 mm max. 18 mounting areas distance 50 mm max. 15 mounting areas distance 60 mm max. 12 mounting areas

Type 449 33

Connecting terminals	max. 60 terminals UT 4
Dimensions (L x W x H)	627 x 312.5 x 135 mm
Weight (empty)	11.5 kg with mounting framework
Components arrangement	distance 40 mm max. 36 mounting areas distance 50 mm max. 30 mounting areas distance 60 mm max. 24 mounting areas

Type 447 33

Connecting terminals	max. 90 terminals UT 4
Dimensions (L x W x H)	941.5 x 312.5 x 135 mm
Weight (empty)	16.5 kg with mounting framework
Components arrangement	distance 40 mm max. 54 mounting areas distance 50 mm max. 45 mounting areas distance 60 mm max. 36 mounting areas

¹⁾ Data for ready configured product



Type 447 33



Type 449 33



Type 448 33



Type 444 33

Ordering codes (Code 1)

1. Enclosure	2. Components arrangement/terminals				3. Labels/ padlocking facility	4. Cable glands
	Mounting 1 ... 6	Mounting 7 ... 18	Mounting 19 ... 27	Mounting 37 ... 64		
444 33	X	–	–	–	X	X
448 33	X	X	–	–	X	X
449 33	X	X	X	–	X	X
447 33	X	X	X	X	X	X

Possible components (Code 1)

Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ²⁾)	DRT	Measuring instrument	AM72 ¹⁾
Double pushbutton (2-pole or 4-pole ²⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ²⁾)	SLT	Signal lamp	SIL
Key-operated switch (2-pole or 4-pole ²⁾)	SLS	Potentiometer	POT
Control switch (2-pole or 4-pole ²⁾)	SCT	Terminal block (4 mm ²)	KLM ... A ²⁾
Mushroom-head pushbutton (2-pole or 4-pole ²⁾)	SGT	Terminal block (4 mm ²)	KLM ... B
Control switch	GHG 23 ¹⁾	Blanking element	BLV

¹⁾ 2 mounting areas are needed²⁾ Serial terminals and PE-Terminal are mounted on a rail below the hinged frame

Ex-control stations - enclosures GHG 44. 33



Type 444 33



Type 448 33

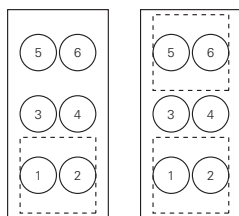
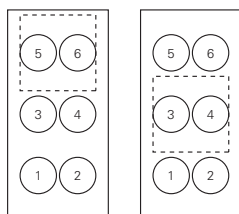


Type 449 33

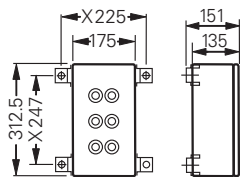


Type 447 33

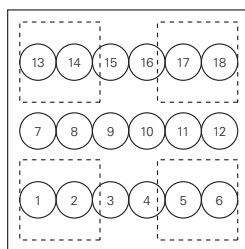
4 Mounting area I Dimension drawing



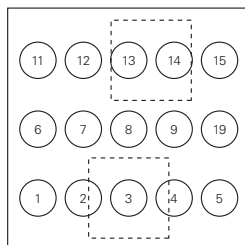
Distance between centres
40, 50 and 60 mm



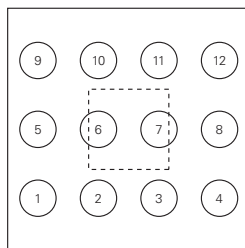
Type 444 33



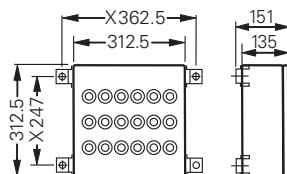
Distance between centres 40 mm



Distance between centres 50 mm



Distance between centres 60 mm



Type 448 33

X = fixing dimension

 = mounting space for switch, pushbutton (2-pole) or signal lamp

 = mounting space for switch, pushbutton (4-pole) ampere- or voltmeter



Type 447 33



Type 449 33

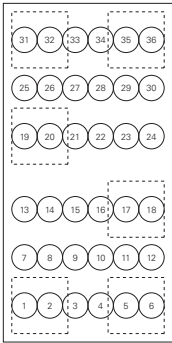


Type 448 33

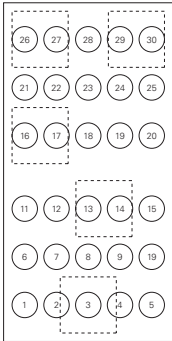


Type 444 33

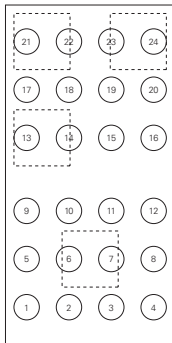
Mounting area | Dimension drawing



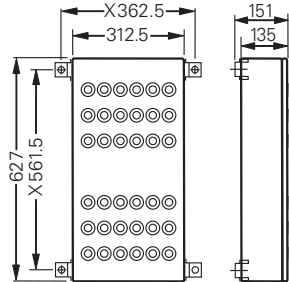
Distance between centres 40 mm



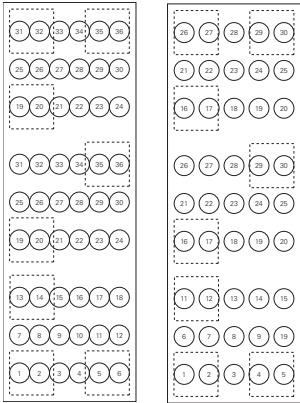
Distance between centres 50 mm



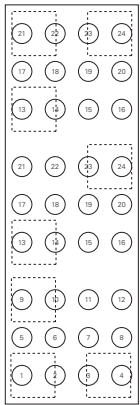
Distance between centres 60 mm



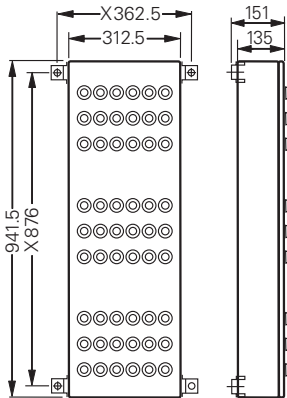
Type 449 33



Distance between centres 40 mm 50 mm



Distance between centres 60 mm



Type 447 33

X = fixing dimension

Built-in components pushbutton



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 2014/34/EU	Ex II 2 G Ex de IIC/IIB Gb / Ex 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 ¹⁾	-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 _e 250 V / I _e 6 A U _e 500 V / I _e 4 A DC-13: U _e 24 V / I _e 6 A U _e 220 V / I _e 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 ²
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

4-pole version²⁾

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

¹⁾ 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.

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



DDT 2 x 2-pole



DDT 2 x 1-pole



DRT 4 x 1-pole



DRT 1 x 2-pole

Ordering code for component (Code 2)

4

Code	Component	Code			
A	Pushbutton, for enclosure mounting	DRT			
	Double pushbutton, for enclosure mounting	DDT			
Code	Circuit	Contacts DRT	Contacts DDT	Code silver contact points	Code 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 pushbutton



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



DDT 2 x 2-pole



DDT 2 x 1-pole



DRT 4 x 1-pole



DRT 1 x 2-pole

Ordering code for component (Code 2)

Content	Circuit	Code	Ordering code		C	D1	D2
			A	B			
Pushbutton with silver contact points							
Version with standard label (0, I, START, STOP)							
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	---
Double pushbutton with gold contact points							
Version with standard label (0, I, START, STOP)							
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 - key-operated pushbutton



SLT 1 x 2-pole



SLT 1 x 4-pole

Technical data

Ex-key-operated pushbutton SLT

Marking accd. to 2014/34/EU	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 ¹⁾	–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 _b 250 V / I _b 6 A / U _b 500 V / I _b 4 A DC-13: U _b 24 V / I _b 6 A / U _b 220 V / I _b 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 ²
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

4-pole version¹⁾

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

¹⁾ 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.

²⁾ 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)

Content	Circuit	Code	Ordering code				
			A	B	C	D1	D2

Key-operated pushbutton with silver contact points

Version with contact function: lockable/removable/lockable/removable (Code 10)

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	---

Key-operated pushbutton with gold contact points

Version with contact function: lockable/removable/lockable/removable (Code 10)

2 NO + 2 NC	2 NO + 2 NC	27	SLT	0	27	10	001
4 NC	4 NC	25	SLT	0	25	10	001
4 NO	4 NO	29	SLT	0	29	10	001
3 NO + 1 NC	3 NO + 1 NC	26	SLT	0	26	10	001
1 NO + 3 NC	1 NO + 3 NC	28	SLT	0	28	10	001



Ordering code for component (Code 2)

4

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		20	25		
	1 NC + 3 NO		21	26		
	2 NC + 2 NO		22	27		
	3 NC + 1 NO		23	28		
	4 NO		24	29		
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 - key-operated switch



SLS 1 x 2-pole



SLS 1 x 4-pole

4 Technical data

Key-operated switch SLS

Marking accd. to 2014/34/EU	Ex II 2 G Ex de IIC/IIB Gb / Ex 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 ¹⁾	-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 _e 250 V / I _e 6 A U _e 500 V / I _e 4 A DC-13: U _e 24 V / I _e 6 A U _e 60 V / I _e 0.8 A U _e 110 V / I _e 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

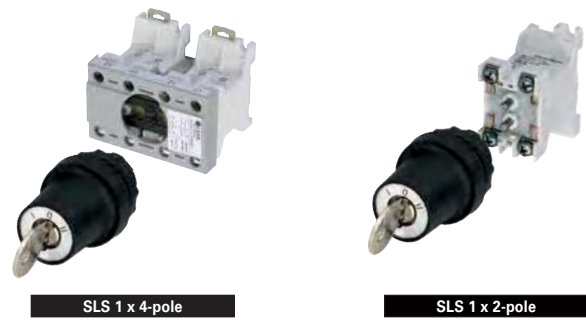
Connecting terminals	2 x 2.5 mm ²
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

4-pole version¹⁾

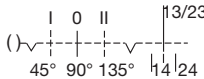
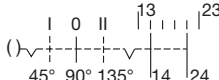
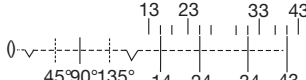
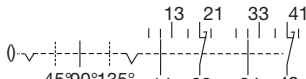
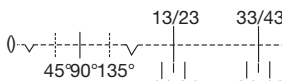
Connecting terminals	4 x 2.5 mm ²
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

¹⁾ 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.

²⁾ 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	Key-switch	SLS		
Code	Circuit	Contacts	Code silver contact points	gold contact points
2 NO		13/23 14 24	04	14
2 NO		13 23 14 24	18	18
4 NO		13 23 33 43 14 24 34 43	29	25
2 NC + 2 NO		13 21 33 41 14 22 34 42	26	26
4 NO		13/23 33/43 14 24 34 44	27	27

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

Example for ordering code (Code 2)

Contact system	Ordering code		
	A	C	D
Key switch with silver contact points and label „I 0 II			
04	SLS 5	04	01
05	SLS 5	05	01

Built-in components - mushroom-head pushbutton



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 2014/34/EU	Ex II 2 G Ex de IIC/IIB Gb / Ex 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 ¹⁾	-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 _e 250 V / I _e 6 A U _e 500 V / I _e 4 A DC-13: U _e 24 V / I _e 6 A U _e 220 V / I _e 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 ²
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 ²
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

¹⁾ 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.

²⁾ 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.



SGT 1 x 4-pole



SGT 1 x 2-pole



SGTE 1 x 4-pole



SGTE 1 x 2-pole

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
	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 - mushroom-head pushbutton



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	Label	Inscription	Code	Inscription	Code
D		emergency stop (German - Englisch) ¹⁾	1	0	002
		emergency stop (German - French) ¹⁾	4	I I	004
		0, I, START, STOP	01	STOP	006
		0	02	emergency stop	008
		I	03	SCHNELL	010
		I I	04	–	012
		💡	05	MARCHE	015
		STOP	06	AB	017
		START	07	Neutral green	019
		LANGSAM	09	UP	024
		SCHNELL	10	ZU	026
		–	12	OFF	028
		ARRET	14	-	031
		MARCHE	15	Neutral yellow	034
		0, I, Arret, Marche	20	AUS	037
		UP	24	HAND	050
		DOWN	25	HEBEN	052
		ZU	26	RECHTS	054
		ON	27	SLOW	056
		OFF	28	OPEN	058
		+	30		
		-	31		

Code	Mushroom head inscription	Colour	Code
E		red	1
		yellow ²⁾	2
		black ²⁾	3

pushbutton

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

1) only SGTE

2) only SGT



SGT 1 x 4-pole



SGT 1 x 2-pole



SGTE 1 x 4-pole



SGTE 1 x 2-pole

Ordering code for component (Code 2)

Circuit

Ordering code

A

C

D

E

F

EMERGENCY STOP mushroom-head pushbutton red, with silver contact points

Version with inscription D/E, hand released

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

Mushroom-head pushbutton with silver contact points, without locking, mushroom head, black
Version with standard label (0, I, START, STOP)

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 - mini-control switch



SCT 1 x 2-pole



SCT 1 x 4-pole

4 Technical data

Ex-Mini-control switch SCT

Marking accd. to 2014/34/EU	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 ¹⁾	-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 _b 250 V / I _b 6 A U _b 500 V / I _b 4 A DC-13: U _b 24 V / I _b 6 A U _b 220 V / I _b 1 A
Degree of protection accd. to EN 60529	IP66 (installed condition)
Type of mounting	DIN rail mounting
Enclosure colour	grey

2-pole version

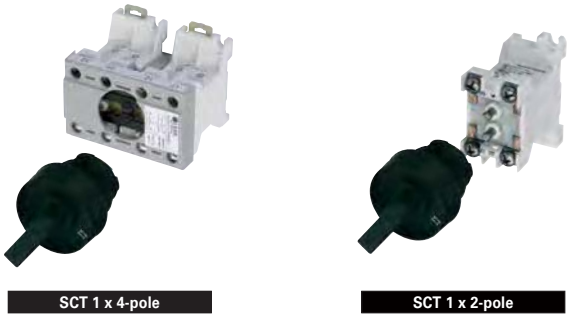
Connecting terminals	2 x 2.5 mm ²
Dimensions in mm (L x W x H)	59 x 31 x 45
Weight	0.15 kg

4-pole version¹⁾

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

¹⁾ 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.

²⁾ 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 A - C - D - E

Code	Component			Ordering code
A	Mini Control switch			SCT
Code	Switching system	Version		Code
C	4	spring – engaging – spring		4
	5	engaging – engaging – engaging		5
	6	engaging – engaging		6
	7	spring – engaging – engaging		7
	8	engaging – engaging – spring		8
	9	engaging – spring		9

Built-in components - mini-control switch

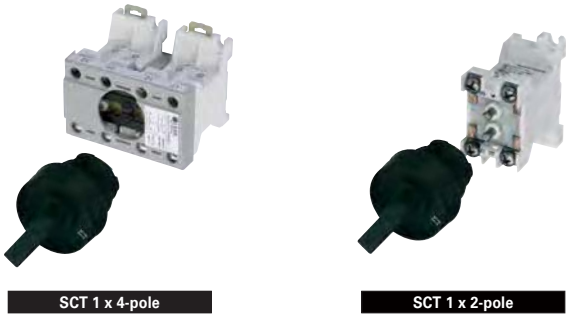


SCT 1 x 2-pole

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



Ordering code for component (Code 2)

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	07	HAND	OFF	AUTO	24	
	AUS	BETRIEB	08	0	IN	START	25	
	AUS	0	09	MAN		AUTO	26	
	AUF	0	10	START		STOP	27	
	Enriegelt	0	11	HEBEN		SENKEN	28	
	OUT	OF	12	OFF		ON	29	
	LOCAL	REMOTE	13	AUS		EIN	30	

Other lables on request

Example for ordering code (Code 2)

Circuit	Switching system	Contacts	Ordering code			
		Code	A	C	D	E
Control switch with silver contact points						
Switch can be locked in all positions						
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



Potentiometer

4 Technical data

Ex-potentiometer POT

Marking accd. to 2014/34/EU	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 ¹⁾	-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 ²
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 %

¹⁾ 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
Potentiometer 1 W 25 % tolerance	
0 - 100 Ohm	POT 01
0 - 470 Ohm	POT 03
0 - 4700 Ohm	POT 05



Signal lamp

Technical data

4

Ex-signal lamp SIL		
Marking accd. to 2014/34/EU	Ex II 2 G Ex d e IIC/IIB Gb / Ex II 2 G Ex d ia IIC/IIB Gb	
EC-Type Examination Certificate	IBExU 12 ATEX 1047 U	
IECEX Certificate of Conformity	IECEX IBE 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 ¹⁾	-45 °C up to +60 °C (IIC) -60 °C up to +60 °C (IIB)	
Rated voltage (Ex ed IIC) (Ex d ia IIC) (Ex ed IIC)	20 V up to 254 V AC/DC 10 V up to 30 V DC 12 V up to 24 V AC/DC	
Rated current	20 V to 254 V 10 V up to 30 V (Ex d ia IIC) 12 V up to 24 V	approx. 4 - 15 mA max. 25 mA max. 24 mA
Max. values for Ex ia	Ui = 30 V DC, li = 100 mA, Pi = 750 mW	
Connecting terminals	2 x 2.5 mm ²	
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	

¹⁾ 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)1)	34
	12 V - 24 V AC/DC	11

¹⁾ Supply by valve-driver components, e. gl., with data: U_o = 20 V - 18 V DC with R_i = 200 Ω - 500 Ω or U_o = 10 V - 18 V DC with R_i = 100 Ω - 200 Ω
No effective C_i and L_i values.

Example for ordering code (Code 2)

Content	Ordering code		
	A	C	D
Signal lamp SIL (examples)			
Universal voltage 20 V - 254 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 - measuring instrument AM 45/AM 72



AM 45



AM 72

4 Technical data

Ex-measuring instrument AM 45/AM 72	Moving iron	Moving coil
Marking accd. to 2014/34/EU	⚡ 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 ²	
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	



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%) ¹⁾	5
	Power connection 4 - 20/24 mA (Scale 0-100% / 120%) ¹⁾	6
	Moving-coil connection 0 - 20/24 mA (Scale 0-100% / 120%) ^{1) 3)}	7
	Moving-coil connection 4 - 20/24 mA (Scale 0-100% / 120%) ^{1) 3)}	8

Code	Measuring range	Code	Measuring range	Code
D	0 - 1	02	0 - 75 / 112.5 A	13
	0 - 2.5 / 3.75 A ²⁾	03	0 - 100 / 150 A	14
	0 - 5 / 7.5 A ²⁾	04	0 - 150 / 225 A	15
	0 - 10 / 15 A ²⁾	05	0 - 200 / 300 A	16
	0 - 15 / 22.5 A	06	0 - 250 / 375 A	17
	0 - 20 / 30 A ²⁾	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

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

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

³⁾ 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		
Measuring instrument AM 45		A	C	D
Version with direct connection				
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
Moving iron measuring instrument AM 72				
Version with CT connection n/1A				
Converter n / 1A	0 - 100% / 150%	AM72	2	33
Moving-coil measuring instrument AM 45 (Ex-i application only)				
Version with direct connection				
0 - 20 / 24 mA	0-100% / 120%	AM45	7	33
4 - 20 / 24 mA	0-100% / 120%	AM45	8	33

Built-in components - control switch Ex 23 and Ex 29



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 2014/34/EU	Ⓢ 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 ¹⁾	-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 ²⁾
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 _e 230 V / I _e 6 A U _e 500 V / I _e 4 A DC-13: U _e 24 V / I _e 6 A U _e 230 V / I _e 0.5 A	AC-15: U _e 230 V / I _e 6 A U _e 400 V / I _e 4 A DC-13: U _e 24 V / I _e 2 A U _e 230 V / I _e 0.3 A
Connecting terminals	2 x 0.5 - 2.5 mm ²	2 x 0.5 - 2.5 mm ² or 1 x 1.0 - 6.0 mm ²
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

¹⁾ 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.

²⁾ min. cross section of used cable ≥ 12 A: 2.5 mm²



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

4

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	
D	Contacts Silver contact points	Code	Contacts Silver contact points	Code
		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.

Built-in components - control switch Ex 23 and Ex 29



Ex 23

Ex 29

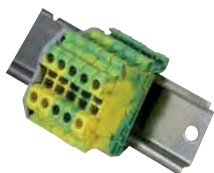
4 Ordering code for component (Code 2) Code A - C - D - E - F

Code	Inscription (labels)			Code	Inscription (labels)			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

Example for ordering code (Code 2)

Content	Component	Contacts	Label	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code
A	Switching system B	C	D	E	F	G	H	I	J	K	L	M	N	O
Ex 23		6		060	060 I - II	02	none	☐	0	Ex 23	6	060	02	0
Ex 23		5		034	034 I - 0 - II	07	centre	☐	1	Ex 23	5	034	07	1
Ex 29		6		060	060 I - II	02	left	☒	3	Ex 29	6	060	02	3
Ex 29		6		065	065 0 - I	01	right	☒	2	Ex 29	6	065	01	2

Other combination available on request



UT4 PE



UT4



MKX 4

Technical data

4

Ex-Built-in components for individual control stations
Terminals

	MXK 4-Ex	UT 4 / UT 4 PE
Marking accd. to 2014/34/EU	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 ²	0.14 mm ² - 4 mm ² multi-wire 0.14 mm ² - 6 mm ² 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

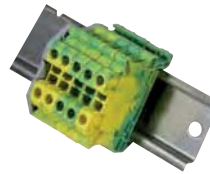
Built-in components - terminals



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



ZUB 17



ZUB 31



ZUB 22



ZUB 20

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

4

Code	Label			Code
A	52.0 x 13 mm			ZUB 19
	37.0 x 17 mm with holder			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, not activated	pushbutton	plastic	ZUB 23
	with flap, with 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 - accessories



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
Code	Content	Component	Code
B	Entry side	Entry side on bottom (left or right)	1, 2
	Position	Entry side on top (left or right)	3, 4
Code	Content	Component	Code
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
Code	Content	Component	Code
D	Size	M12, M16, M20, M25, M32, M40, M50, M63	M..
		Ø21, Ø26	d..
Code	Content	Component	Code
E	Number	Number of entries	..(No)

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	2	GEH	1	GK	M25	02

