### EX-CONTROL STATIONS

For individual controls

Moulded-plastic version for Zone 1 and Zone 21

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.

#### Internationally approved.



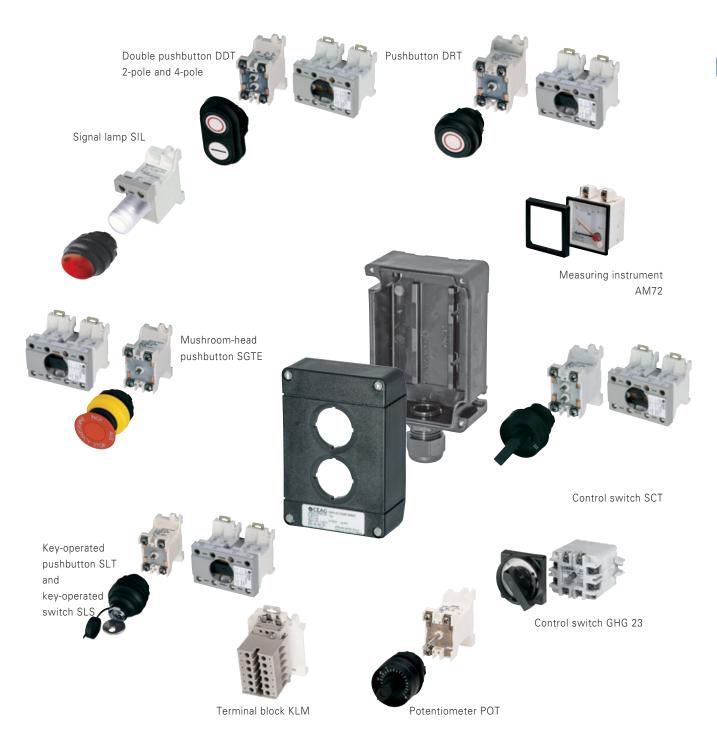


- Flat side walls
- Quick fixing for all built-in components
- High chemical resistance
- Different enclosures can be combined

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

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

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.



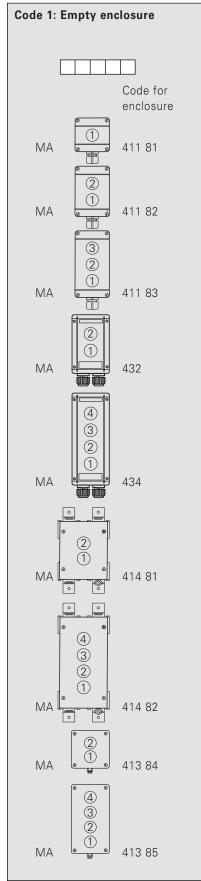
#### For an easy selection of certified components two temperature information are provided:

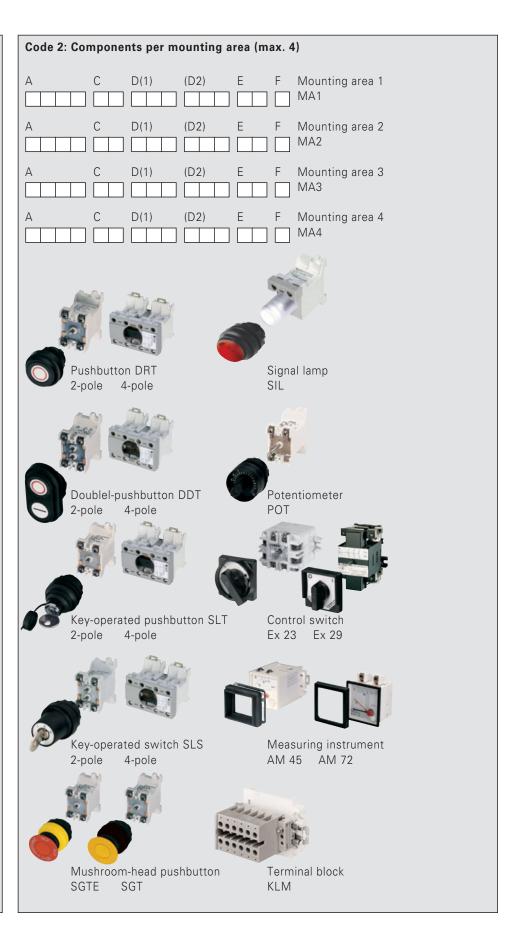
- 1. Operating temperature range
  - This defines the max. permitted temperature range of component in the installed state. This has to be considered when configuring
- 2. Ambient temperature range

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.

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

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





Example: Enclosure Type 434,

Pushbutton (MA4), Signal lamp (MA3) Emergency stop

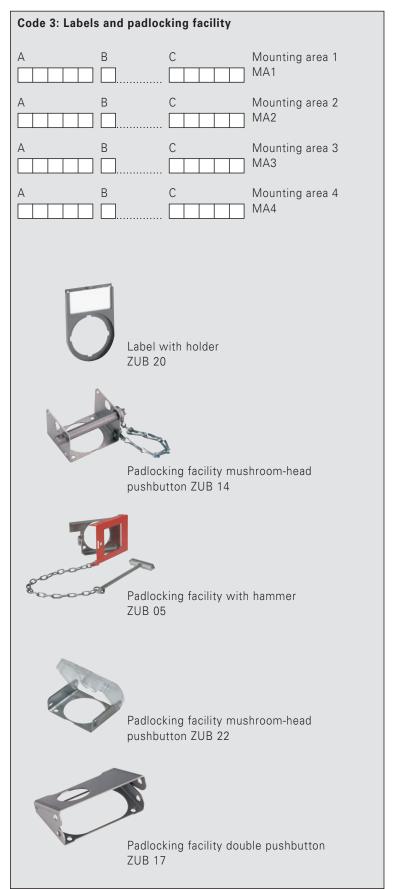
Mushroom head pushbutton (MA2) Code 2 MA1: DDT15 001 007

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







#### 4 Tabaiasi

### Technical data

Ex-control stations Type 41. and 43. for individual configuration				
Marking accd. to 94/9/EC	⟨E₂ II 2 G Ex ed ib m IIC T6			
	(S) II 2 D Ex tD A21 IP66 T80 °C			
EC-Type Examination Certificate	PTB 00 ATEX 3117			
IECEx Certificate of Conformity	IECEx BKI 04.0003			
Marking accd. to IECEx	Ex e II T6, Ex e ib IIC T6, Ex ed IIC T6 or Ex ed ib IIC T6			
Permissible ambient temperature	−20 °C up to +40 °C			
	−55 °C up to +55 °C (option)			
Rated voltage	690 V AC			
Rated current	16 A			
Connecting terminals	2 x 4 mm <sup>2</sup>			
Protection class				
Degree of protection accd. to EN 60529	IP66 (standard)			
Enclosure material	Polyamide			
Enclosure colour	black			

Tyne	41	11	2.1

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)

Weight (empty)

Components arrangement

The cable glands max. 2 x M25; 2 x M20 thread

165 x 85 x 77.5 mm

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)

Veight (empty)

Components arrangement

4 mounting areas



### Ordering codes (Code 1)

1. Empty enclosure	2. Components arrangement/terminals				3. Labels/	4. Cable glands
	Mounting area 1	Mounting area 2	Mounting area 3	Mounting area 4	padlocking facility	
411 811)	Χ	_	_	_	Χ	X
411 82	Χ	Χ	_	_	Χ	X
411 83	Χ	Χ	Χ	_	Χ	X
432	Χ	Χ	-	_	Χ	X
434	Χ	Χ	X	Χ	Χ	X

Component

### Possible components (Code 1)

Component	Code
Pushbutton (2-pole or 4-pole <sup>2)</sup> )	DRT
Double pushbutton (2-pole or 4-pole <sup>2)</sup> )	DDT
Key-operated pushbutton (2-pole or 4-pole <sup>2)</sup> )	SLT
Key-operated switch (2-pole or 4-pole <sup>2)</sup> )	SLS
Control switch (2-pole or 4-pole <sup>2)</sup> )	SCT
Mushroom-head pushbutton (2-pole or 4-pole <sup>2)</sup> )	SGT
Control switch	GHG 233)

Measuring instrument	AIVI7Z-
Measuring instrument	AM45
Signal lamp	SIL
Potentiometer	POT
Terminal block (4 mm²)	KLM
Blanking element	BLV

Code

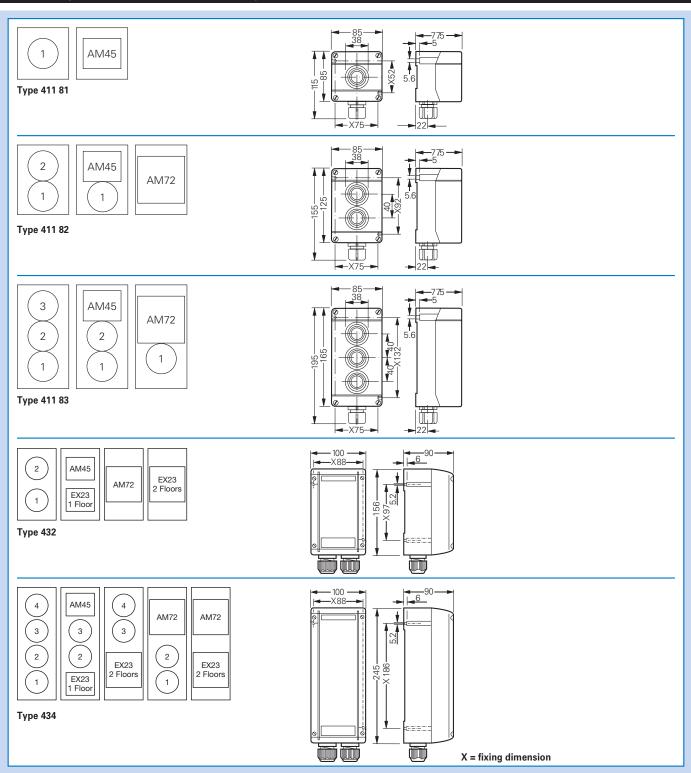
<sup>1) 4-</sup>pole component not possible

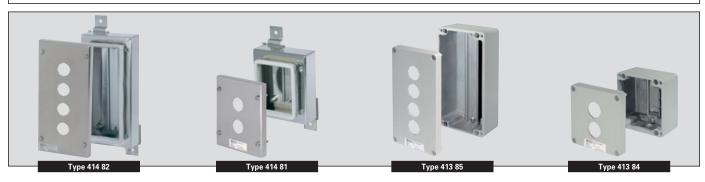
<sup>&</sup>lt;sup>2)</sup> 2 mounting areas are needed

<sup>3)</sup> only for type 43., 2 mounting areas are needed



### Mounting areas | Dimension drawing





### Technical data

Ex-control stations type 413. and 414. for individual configuration Marking accd. to 94/9/EC ⟨Ex⟩ II 2 G Ex ed ib m IIC T6 ⟨ II 2 D Ex tD A21 IP66 T80 ° C EC-Type Examination Certificate PTB 00 ATEX 3117 IECEx Certificate of Conformity IECEx BKI 04.0003 Ex e II T6, Ex e ib IIC T6, Ex ed IIC T6 or Ex ed ib IIC T6 Marking accd. to IECEx Permissible ambient temperature -20 °C up to +40 °C -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<sup>2</sup> Protection class Degree of protection accd. to EN 60529 IP66 (standard)

Type 413 84	
Cable glands/Gland plates/	max. 2 x M25; 2 x M20
Enclosure drilling	
Dimensions (L x W x H)	122 x 120 x 81 mm
Weight (empty)	0.85 kg
Enclosure material	cast aluminium-silicon (AISi)
Enclosure colour	grey RAL 7031
Components arrangement	2 mounting areas

Type 413 85	
Cable glands/Gland plates/	max. 2 x M25; 2 x M20
Enclosure drilling	
Dimensions (L x W x H)	122 x 120 x 81 mm
Weight (empty)	1.45 kg
Enclosure material	cast aluminium-silicon (AISi)
Enclosure colour	grey RAL 7031
Components arrangement	4 mounting areas

Type 414 81	
Cable glands/Gland plates/	max. 3 x Ø 21 for cable gland M20
Enclosure drilling	max. 2 x ø 25.5 for cable gland M25
Dimensions (L x W x H)	166 x 140 x 76 mm
Weight (empty)	1.40 kg
Enclosure material	stainless steel AISI 316 L
Enclosure colour	polished
Components arrangement	2 mounting areas

Type 414 82	
Cable glands/Gland plates/	max. 4 x Ø 21 for cable gland M20
Enclosure drilling	max. 2 x Ø 25.5 for cable gland M25
Dimensions (L x W x H)	286 x 140 x 76 mm
Weight (empty)	2.10 kg
Enclosure material	stainless steel AISI 316 L
Enclosure colour	polished
Components arrangement	4 mounting areas



#### 4

## Ordering codes (Code 1)

1. Empty enclosure	2. Components arrangement/terminals				3. Labels/	4. Cable glands
	Mounting area 1	Mounting area 2	Mounting area 3	Mounting area 4	padlocking facility	
	area i	area Z	alea 3	area 4		
413 84	Χ	Χ	_	_	Χ	X
413 85	Χ	Χ	Χ	Χ	Χ	X
414 81	Χ	Χ	_	_	Χ	X
414 82	Χ	Χ	Χ	Χ	Χ	X

### Possible components (Code 1)

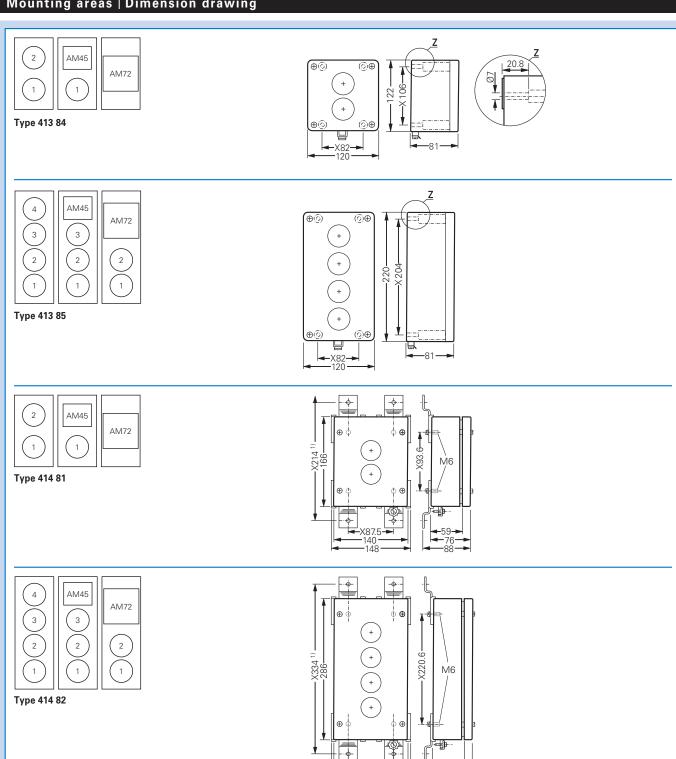
Component	Code
Pushbutton (2-pole or 4-pole <sup>1)</sup> )	DRT
Double pushbutton (2-pole or 4-pole <sup>1)</sup> )	DDT
Key-operated pushbutton (2-pole or 4-pole <sup>1)</sup> )	SLT
Key-operated switch (2-pole or 4-pole <sup>1)</sup> )	SLS
Control switch (2-pole or 4-pole <sup>1)</sup> )	SCT
Mushroom-head pushbutton (2-pole or 4-pole <sup>1)</sup> )	SGT
Control switch	GHG 231)

1) 2	mounting	areas	are	needed

Component	Code
Measuring instrument	AM721)
Measuring instrument	AM45
Signal lamp	SIL
Potentiometer	POT
Terminal block (4 mm²)	KLM
Blanking element	BLV

### Mounting areas | Dimension drawing

X = fixing dimension





## Technical data

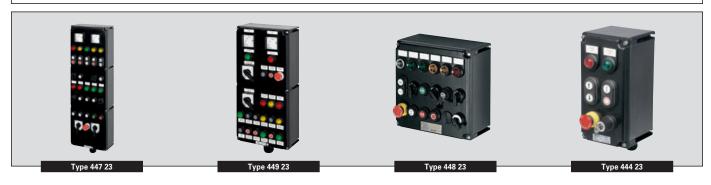
Ex-control stations Typ 444, 448, 449, and 44	17 for individual configuration
Marking accd. to 94/9/EC	🖾 II 2 G Ex de ia/ib m [ia/ib] IIC T6
EC-Type Examination Certificate	PTB 99 ATEX 1044
IECEx Certificate of Conformity	IECEx BKI 07.0023
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] IIC T4 T6
	Ex tD A21 IP66 T80 °C
Permissible ambient temperature	−20 °C up to +40 °C
	−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 <sup>2</sup>
Protection class	
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	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		



### Ordering codes (Code 1)

1. Empty	enclosure	2. Components arrangement/terminals				3. Labels/	4. Leitungs-
		mounting areas	mounting areas	mounting areas	mounting areas	padlocking facility	einführungen
		1 6	7 18	19 36	37 64		
444 23		Χ	-	_	_	Χ	X
448 23		Χ	Χ	-	_	X	X
449 23		Χ	Χ	Χ	_	X	X
447 23		Χ	Χ	Χ	Χ	Χ	X

### Possible components (Code 1)

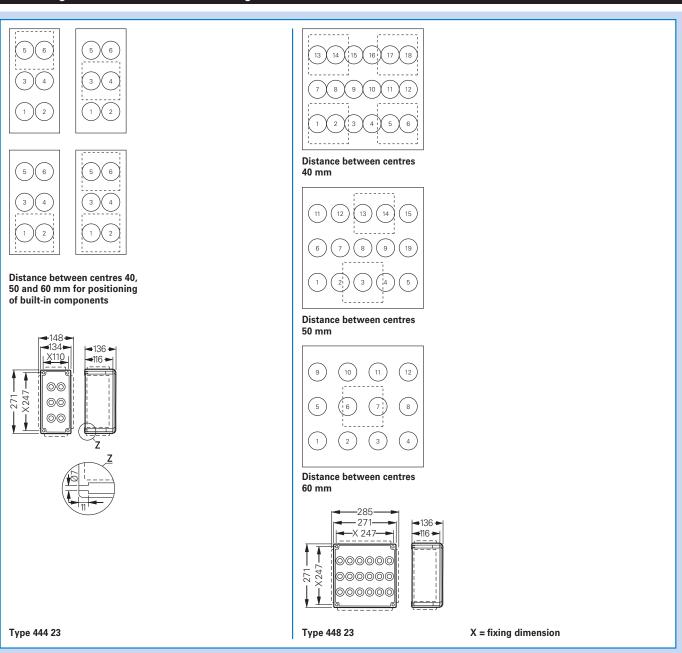
Component	Code	Component	Code
Pushbutton (2-pole or 4-pole <sup>1)</sup> )	DRT	Measuring instrument	AM721)
Double pushbutton (2-pole or 4-pole <sup>1)</sup> )	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole <sup>1)</sup> )	SLT	Signal lamp	SIL
Key-operated switch (2-pole or 4-pole <sup>1)</sup> )	SLS	Potentiometer	POT
Control switch (2-pole or 4-pole <sup>1)</sup> )	SCT	Serial terminals (4 mm²)	KLM A <sup>2)</sup>
Mushroom-head pushbutton (2-pole or 4-pole <sup>1)</sup> )	SGT	Terminal block (4 mm²)	KLM B
Control switch	GHG 23 <sup>1)</sup>	Blanking element	BLV

<sup>1) 2</sup> mounting areas are needed

 $<sup>^{\</sup>rm 2)}$  Serial terminals and PE-Terminal are mounted on a rail below the hinged frame



### Mounting areas | Dimension drawing



### Mounting areas | Dimension drawing

31 32 33 34 35 36

26 27 28 29 30

21 22 23 24

17 18 19 20

13 (1) (15 (16)

9 10 11 12 5 8

1 2 3 4

- 544-X 520

Type 449 23

Distance between centres 40 mm

Distance between centres 50 mm

Distance between centres 60 mm

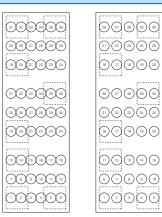
**→**136 **→** 

-271-

X 247

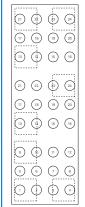
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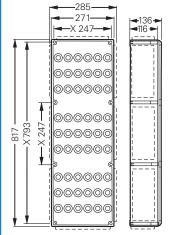


Distance between centres 40 mm

Distance between centres 50 mm



Distance between centres 60 mm



Type 447 23

X = fixing dimension

4

Dimensions in mm



Type 443 34

## Technical data

Ex-control stations Typ 443 34 for individua	l configuration
Marking accd. to 94/9/EC	⟨E⊗   I 2 G Ex ed ia/ib m   IIC T6
	( II 2 D Ex tD A21 IP66 T80 ° C
EC-Type Examination Certificate	PTB 01 ATEX 1115
Permissible ambient temperature	−20 °C up to +40 °C
	−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 <sup>2</sup>
Protection class	The state of the s
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 (AISi)
Enclosure colour	grey RAL 7031
Components arrangement	max. 9 mounting areas

# Ordering codes (Code 1)

1. Empty enclosure	2. Components arrangement/terminals			3. Labels/	4. Cable
	mounting areas mounting areas mounting areas			padlocking facility	glands
	1 3	4 6	7 9		
443 34	Χ	Χ	Χ	Χ	X

# Possible components (Code 1)

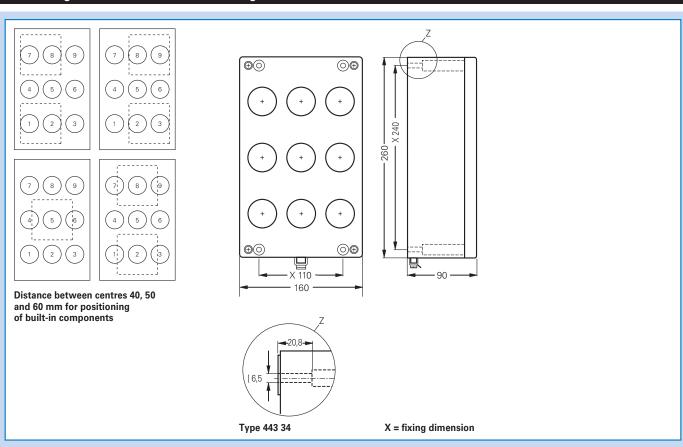
Component	Code
Pushbutton (2-pole or 4-pole <sup>1)</sup> )	DRT
Double pushbutton (2-pole or 4-pole <sup>1)</sup> )	DDT
Key-operated pushbutton (2-pole or 4-pole <sup>1)</sup> )	SLT
Key-operated switch (2-pole or 4-pole <sup>1)</sup> )	SLS
Mushroom-head pushbutton (2-pole or 4-pole <sup>1)</sup> )	SGT
Control switch (2-pole or 4-pole <sup>1)</sup> )	SCT
Signal lamp	SIL
Potentiometer	POT

Component	Code
Measuring instrument	AM72 <sup>1)</sup>
Measuring instrument	AM45
Blanking element	BLV
Control switch	GHG 23 <sup>1)</sup>
Control switch	GHG 29 <sup>1)</sup>
Terminal (4 mm²)	KLM A <sup>1)</sup>
Terminal block (4 mm²)	KLM B <sup>1)</sup>

<sup>1) 2</sup> mounting areas are needed



### Mounting areas | Dimension drawing



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

I = mounting space for switch, push-button (4-pole) ampere- or voltmeter



#### 4

# Technical data

Ex-control stations Tvp 444, 448, 449, and 4	47 stainless steel for individual configuration
Marking accd. to 94/9/EC	(Ex) II 2 G Ex de ia/ib m [ia/ib] IIC T6
, and the second	© II 2 D Ex tD A21 IP66/IP65 T80 °C
EC-Type Examination Certificate	PTB 99 ATEX 1044
IECEx Certificate of Conformity	IECEx BKI 07.0023
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] IIC T4 T6
	Ex tD A21 IP66 T80 °C
Permissible ambient temperature	−20 °C up to +40 °C
	−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 <sup>2</sup>
Protection class	
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

Туре 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	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			



### Ordering codes (Code 1)

1. Empty enclosure	2. Components arrangement/terminals				3. Labels/	4. Cable glands
	mounting areas 1 6	mounting areas 7 18	mounting areas	mounting areas 37 64	padlocking facility	
	1 0	7 10	13 30	37 04		
444 33	Χ	_	-	-	Χ	X
448 33	Χ	Χ	_	_	Χ	X
449 33	Χ	Χ	Χ	_	Χ	X
447 33	Χ	Χ	Χ	Χ	Χ	X

### Possible components (Code 1)

Component	Code
Pushbutton (2-pole or 4-pole <sup>1)</sup> )	DRT
Double pushbutton (2-pole or 4-pole <sup>1)</sup> )	DDT
Key-operated pushbutton (2-pole or 4-pole <sup>1)</sup> )	SLT
Key-operated switch (2-pole or 4-pole <sup>1)</sup> )	SLS
Mushroom-head pushbutton (2-pole or 4-pole <sup>1)</sup> )	SGT
Control switch (2-pole or 4-pole <sup>1)</sup> )	SCT
Signal lamp	SIL
Potentiometer	POT

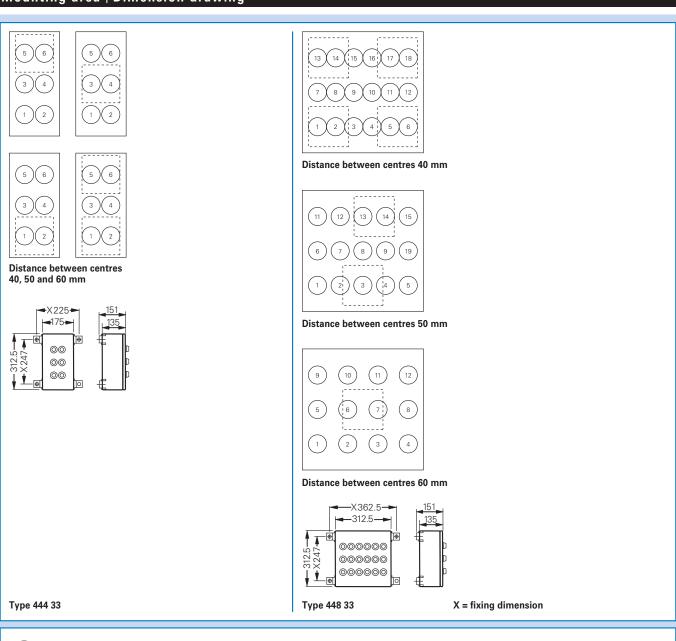
Component	Code
Measuring instrument	AM721)
Measuring instrument	AM45
Blanking element	BLV
Control switch	GHG 231)
Control switch	GHG 29 <sup>1)</sup>
Terminal (4 mm²)	KLM A <sup>2)</sup>
Terminal block (4 mm²)	KLM B

<sup>1) 2</sup> mounting areas are needed

<sup>&</sup>lt;sup>2)</sup> Terminal blocks and PE-terminals are attached to terminal rail under th fold-out mounting frame



# Mounting area | Dimension drawing



### Mounting area | Dimension drawing

31 32 33 34 35 36

Distance between centres 40 mm

Distance between centres 50 mm

Distance between centres 60 mm

-X362.5→

**→**312.5

000000

000000

000000

000000 000000 000000

-627-X

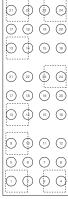
Type 449 33

26 27 28 29 30

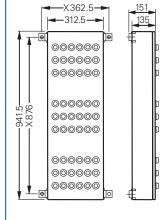
21 22 23 24 25

(17) (18) (19) (20)

# Distance between centres 40 mm 50 mm



### Distance between centres 60 mm



Type 447 33

X = fixing dimension