

E X - C O N T R O L S T A T I O N S

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

4 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.

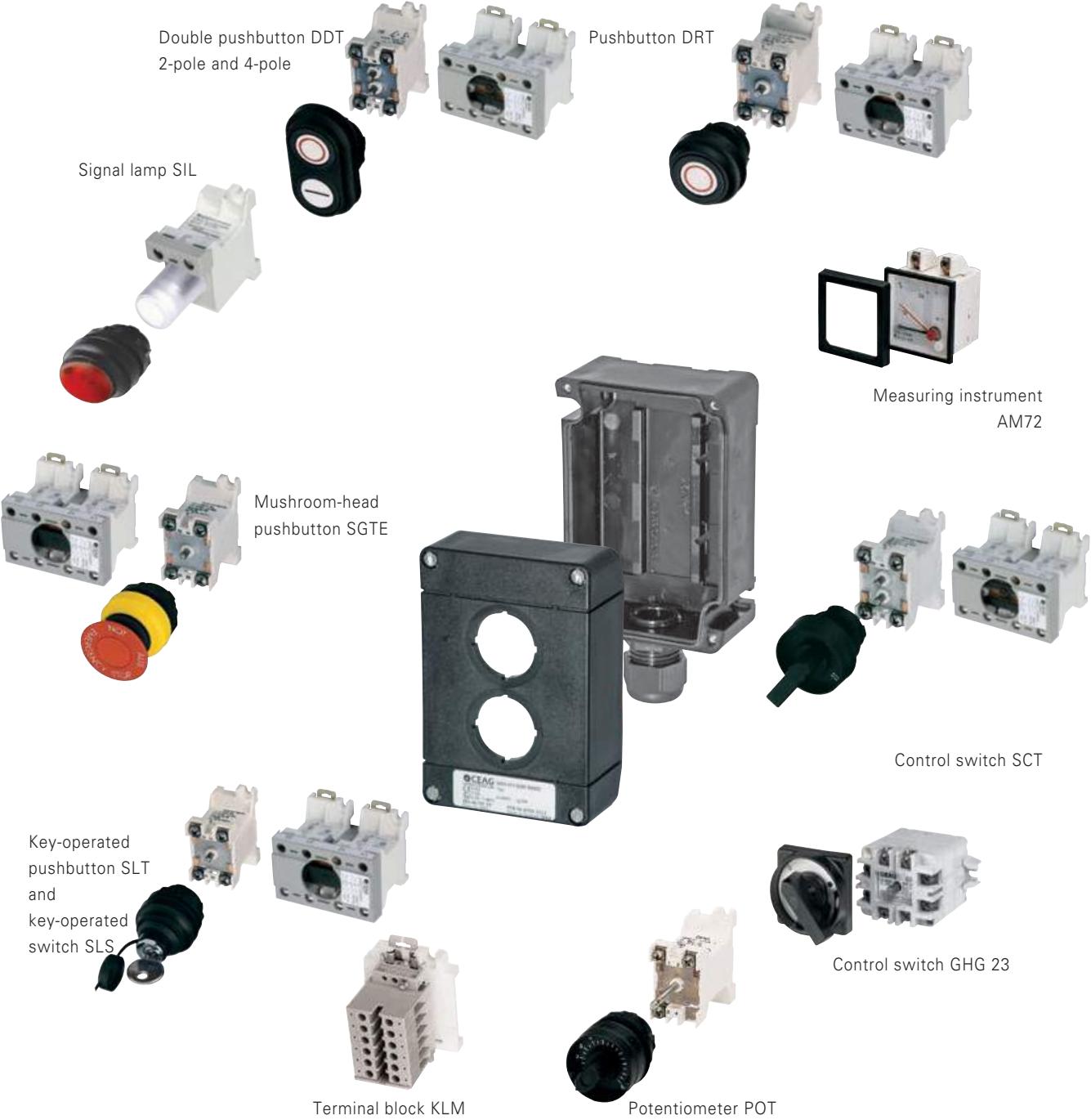
- Flat side walls
- Quick fixing for all built-in components
- High chemical resistance
- Different enclosures can be combined



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

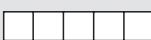
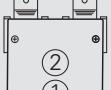
These temperature range defines the expected ambient temperature range for a fully planned equipment and is based on the experiences of configured devices at normal installation conditions. However, it must be observed in any case, the conditions of the type examination certificate. These temperatures 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.

Order Code for Individual Control Units |

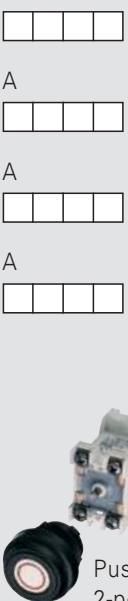
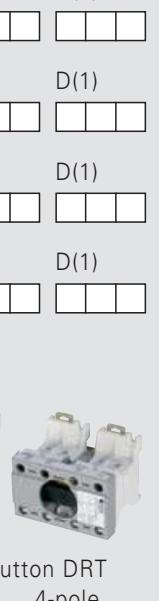
Individual control units can be defined by 4 groups of components:

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			



Pushbutton DRT
2-pole 4-pole
Signal lamp
SIL



Double-pushbutton DDT
2-pole 4-pole
Potentiometer
POT



Key-operated pushbutton SLT
2-pole 4-pole
Control switch
Ex 23 Ex 29



Key-operated switch SLS
2-pole 4-pole
Measuring instrument
AM 45 AM 72



Mushroom-head pushbutton
SGTE SGT
Terminal block
KLM

Example: Enclosure Type 434,	Code 1: 434..
Pushbutton (MA4),	Code 2 MA4: DRT 14 001
Signal lamp (MA3)	Code 2 MA3: SIL 1 10
Emergency stop	Code 2 MA2 SGTE 13 1 1 2
Mushroom head pushbutton (MA2)	Code 2 MA1: DDT15 001 007
Double pushbutton (MA1)	

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



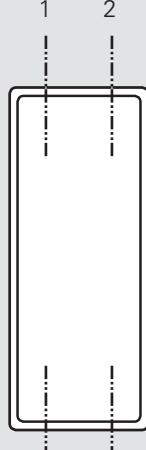
Metal flange plate
FLM



Plastic cable gland GK



Plastic trumpet-shaped
cable gland TR



Position for
drilling/gland



Technical data

Ex-control stations Type 411 and 432 for individual configuration

Marking accd. to 94/9/EC	Ex II 2 G Ex ed ib m IIC T6
	Ex 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 ed 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 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



Ordering codes (Code 1)

1. Empty 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 possible²⁾ 2 mounting areas are needed³⁾ only for type 43., 2 mounting areas are needed



Type 411 81



Type 411 82

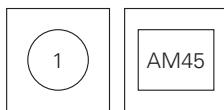


Type 432

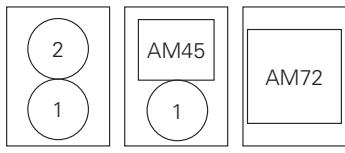
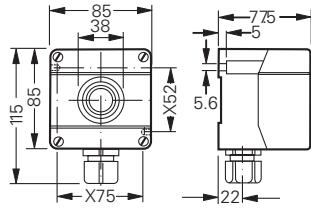


Type 434

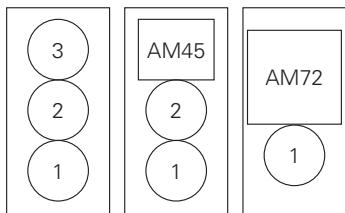
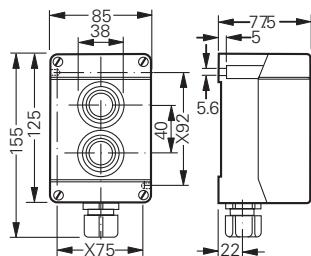
Mounting areas | Dimension drawing



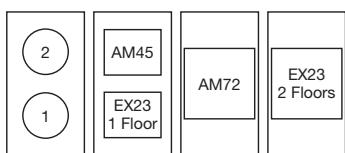
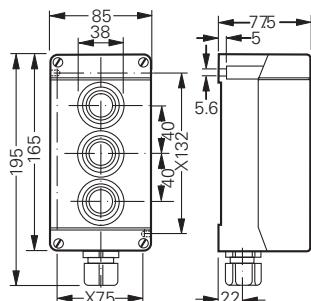
Type 411 81



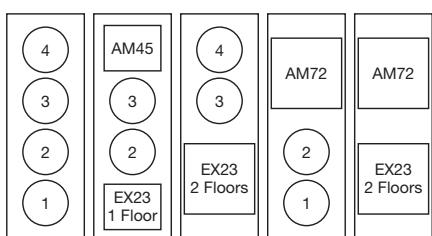
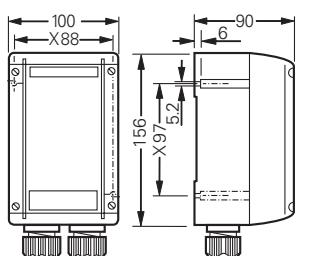
Type 411 82



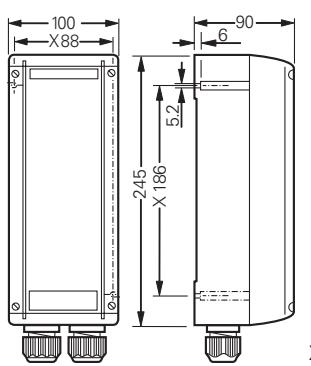
Type 411 83



Type 432



Type 434



X = fixing dimension



Type 414 82

Type 414 81

Type 413 85

Type 413 84

Technical data

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

Marking accd. to 94/9/EC	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
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	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

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 (AlSi)
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 (AlSi)
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



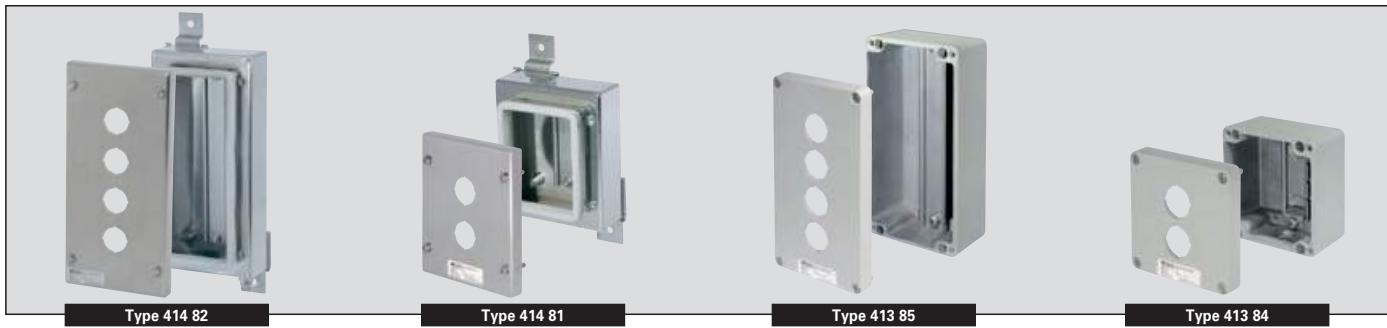
4 Ordering codes (Code 1)

1. Empty enclosure	2. Components arrangement/terminals				3. Labels/ 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

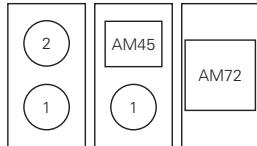
Possible components (Code 1)

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⁾		

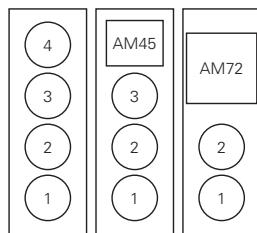
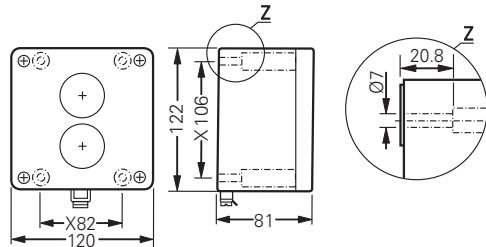
¹⁾ 2 mounting areas are needed



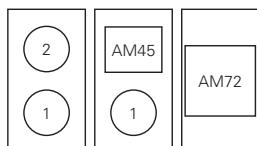
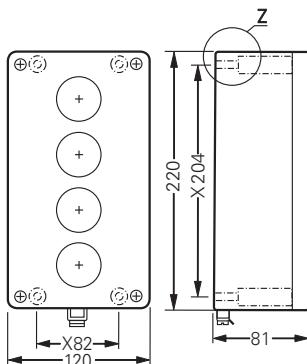
Mounting areas | Dimension drawing



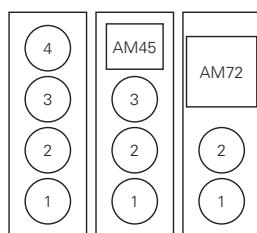
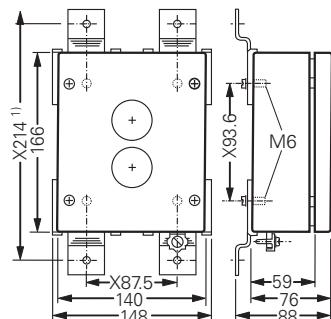
Type 413 84



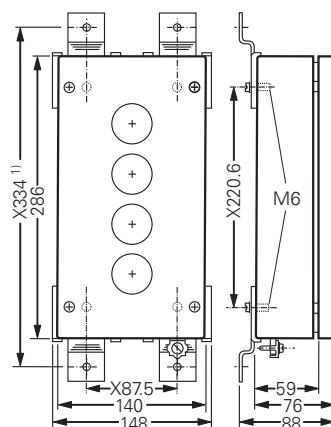
Type 413 85



Type 414 81



Type 414 82



X = fixing dimension



Type 444 23



Type 448 23



Type 449 23



Type 447 23

Technical data

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

Marking accd. to 94/9/EC	Ex II 2 G Ex de ia/b m [ia/b] IIC T6
	Ex 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/b m [ia/b] 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 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



Type 447 23

Type 449 23

Type 448 23

Type 444 23

Ordering codes (Code 1)

1. Empty enclosure	2. Components arrangement/terminals				3. Labels/ padlocking facility	4. Leitungs- einführungen
	mounting areas 1 ... 6	mounting areas 7 ... 18	mounting areas 19 ... 36	mounting areas 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)

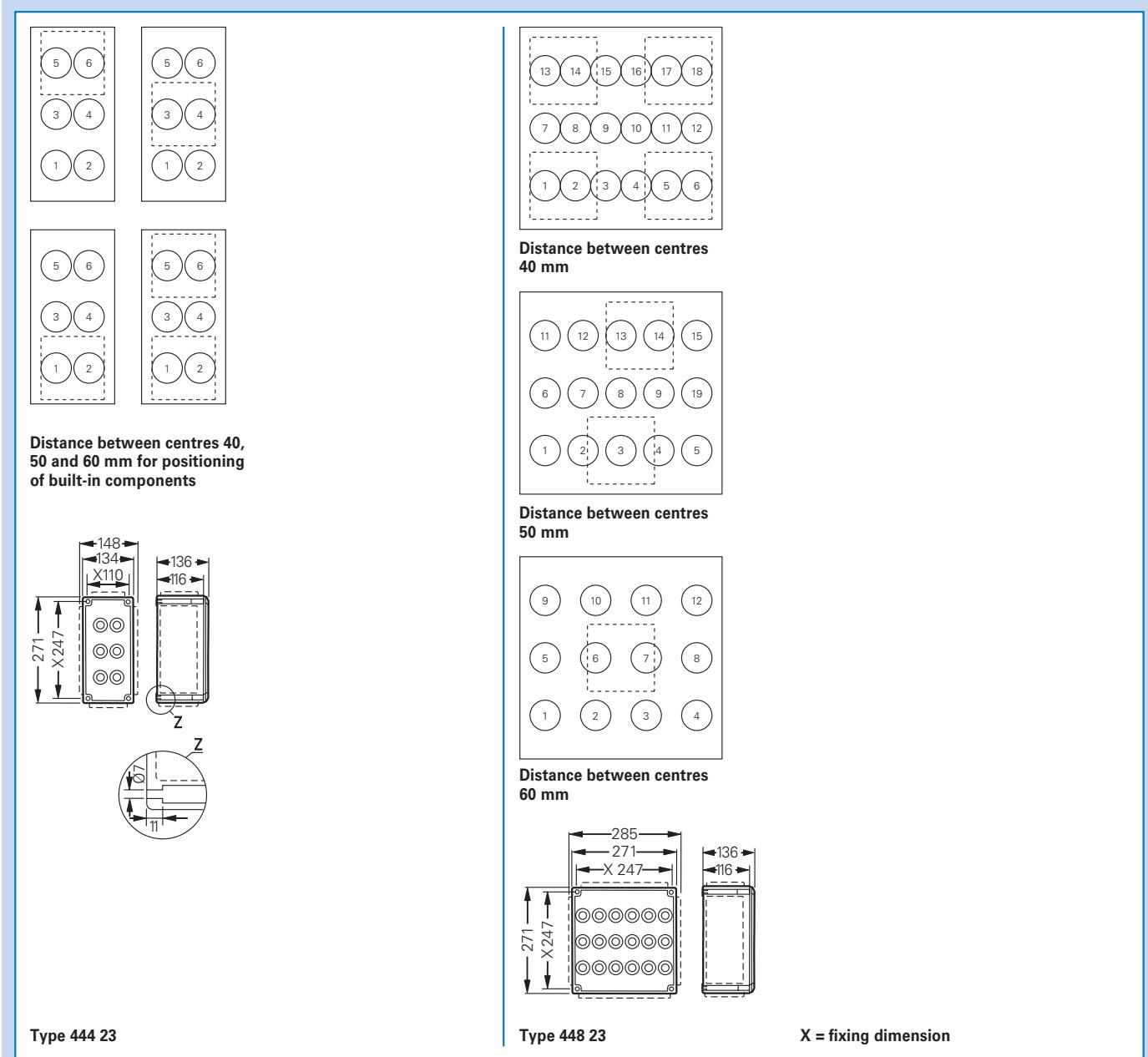
Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ¹⁾)	DRT	Measuring instrument	AM72 ¹⁾
Double pushbutton (2-pole or 4-pole ¹⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ¹⁾)	SLT	Signal lamp	SIL
Key-operated switch (2-pole or 4-pole ¹⁾)	SLS	Potentiometer	POT
Control switch (2-pole or 4-pole ¹⁾)	SCT	Serial terminals (4 mm ²)	KLM ... A ²⁾
Mushroom-head pushbutton (2-pole or 4-pole ¹⁾)	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



Mounting areas | Dimension drawing



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



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



Type 447 23



Type 449 23

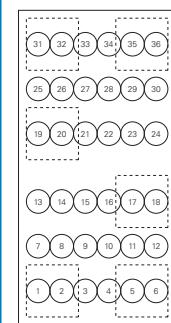


Type 448 23

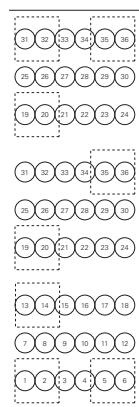


Type 444 23

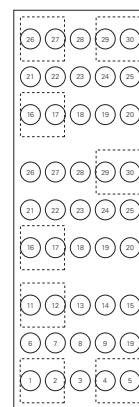
Mounting areas | Dimension drawing



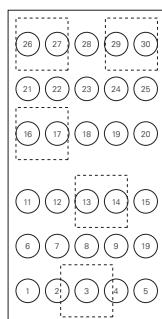
Distance between centres 40 mm



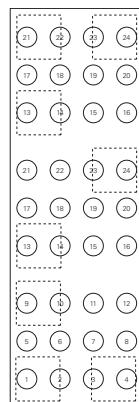
Distance between centres 40 mm



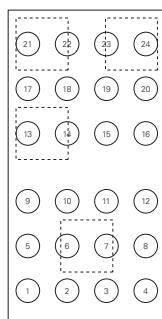
Distance between centres 50 mm



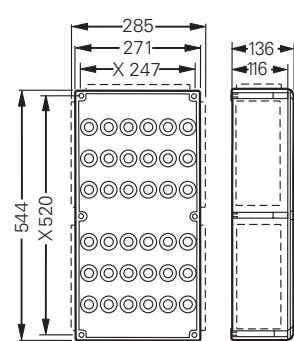
Distance between centres 50 mm



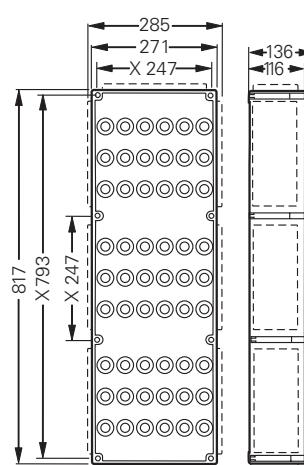
Distance between centres 60 mm



Distance between centres 60 mm



Type 444 23



Type 447 23

X = fixing dimension

Dimensions in mm



Type 443 34

Technical data

Ex-control stations Typ 443 34 for individual configuration

Marking accd. to 94/9/EC	
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 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

Ordering codes (Code 1)

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

Possible components (Code 1)

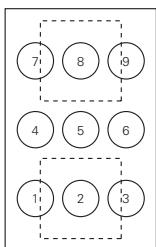
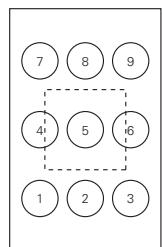
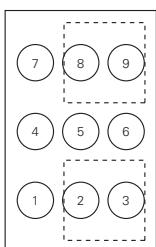
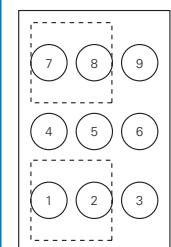
Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ¹⁾)	DRT	Measuring instrument	AM72 ¹⁾
Double pushbutton (2-pole or 4-pole ¹⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ¹⁾)	SLT	Blanking element	BLV
Key-operated switch (2-pole or 4-pole ¹⁾)	SLS	Control switch	GHG 23 ¹⁾
Mushroom-head pushbutton (2-pole or 4-pole ¹⁾)	SGT	Control switch	GHG 29 ¹⁾
Control switch (2-pole or 4-pole ¹⁾)	SCT	Terminal (4 mm ²)	KLM ... A ¹⁾
Signal lamp	SIL	Terminal block (4 mm ²)	KLM ... B ¹⁾
Potentiometer	POT		

¹⁾ 2 mounting areas are needed

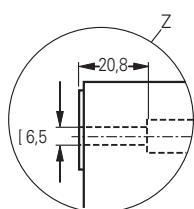
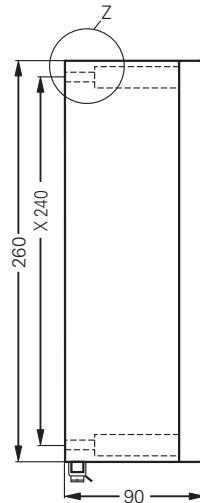
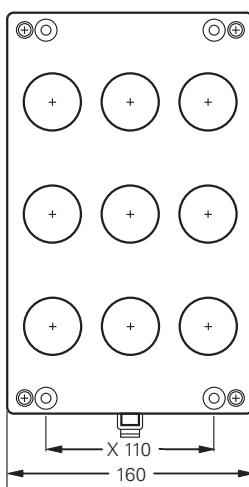


Type 443 34

Mounting areas | 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, push-button (2-pole) or signal lamp



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



Technical data

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

Marking accd. to 94/9/EC	Ex II 2 G Ex de ia/b m [ia/b] IIC T6
	Ex 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/b m [ia/b] 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 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



Ordering codes (Code 1)

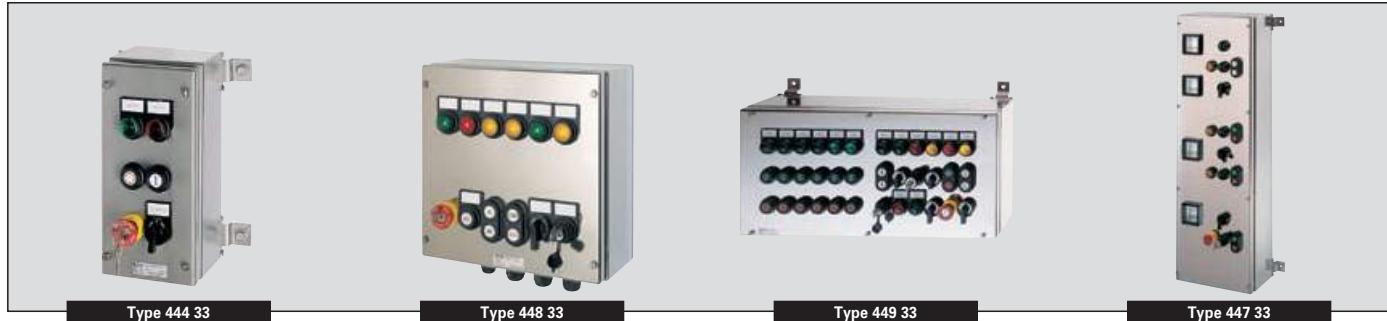
1. Empty enclosure	2. Components arrangement/terminals				3. Labels/ padlocking facility	4. Cable glands
	mounting areas 1 ... 6	mounting areas 7 ... 18	mounting areas 19 ... 36	mounting areas 37 ... 64		
444 33	X	—	—	—	X	X
448 33	X	X	—	—	X	X
449 33	X	X	X	—	X	X
447 33	X	X	X	X	X	X

Possible components (Code 1)

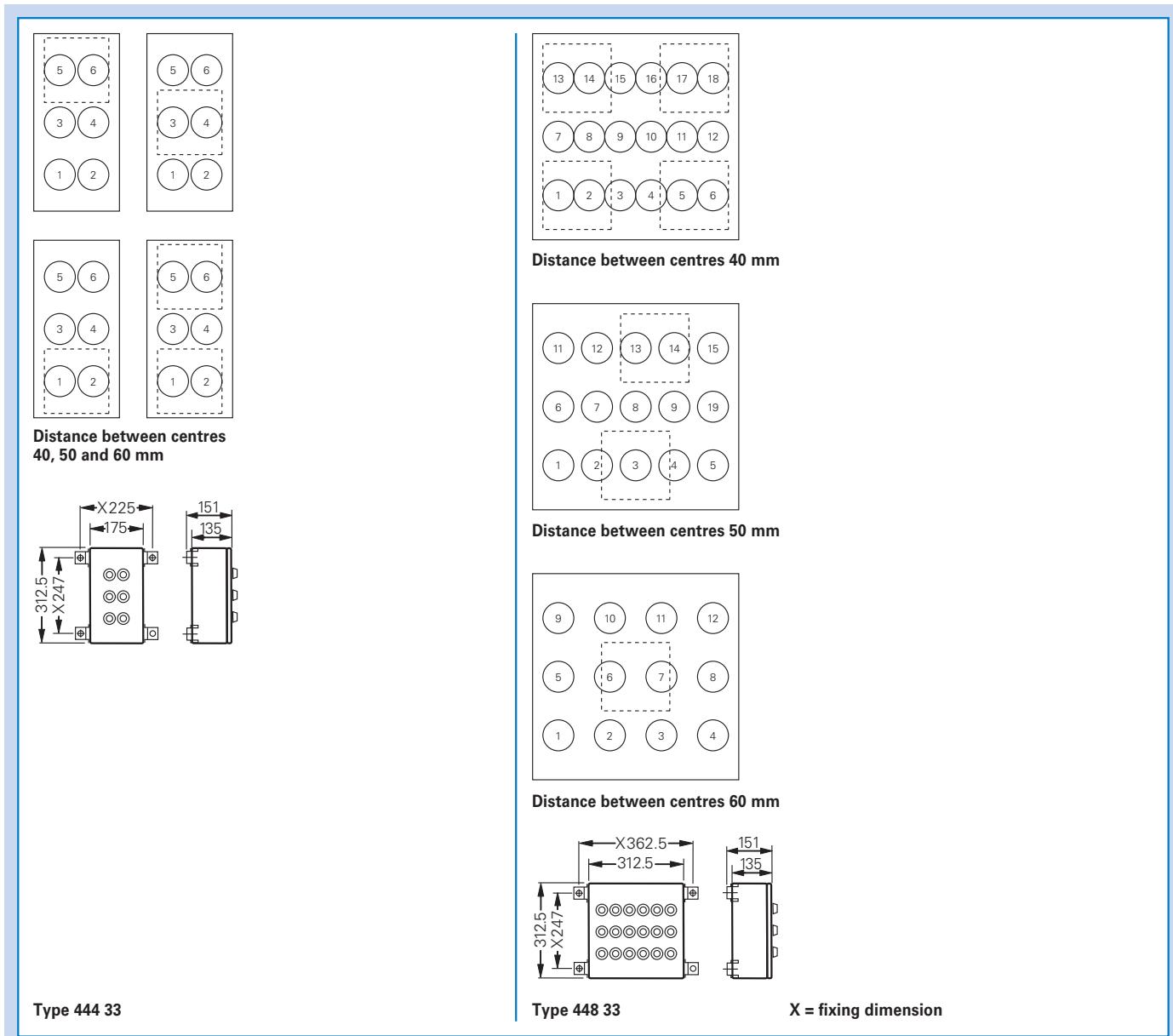
Component	Code	Component	Code
Pushbutton (2-pole or 4-pole ¹⁾)	DRT	Measuring instrument	AM72 ¹⁾
Double pushbutton (2-pole or 4-pole ¹⁾)	DDT	Measuring instrument	AM45
Key-operated pushbutton (2-pole or 4-pole ¹⁾)	SLT	Blanking element	BLV
Key-operated switch (2-pole or 4-pole ¹⁾)	SLS	Control switch	GHG 23 ¹⁾
Mushroom-head pushbutton (2-pole or 4-pole ¹⁾)	SGT	Control switch	GHG 29 ¹⁾
Control switch (2-pole or 4-pole ¹⁾)	SCT	Terminal (4 mm ²)	KLM ... A ²⁾
Signal lamp	SIL	Terminal block (4 mm ²)	KLM ... B
Potentiometer	POT		

¹⁾ 2 mounting areas are needed

²⁾ Terminal blocks and PE-terminals are attached to terminal rail under the fold-out mounting frame



Mounting area | Dimension drawing



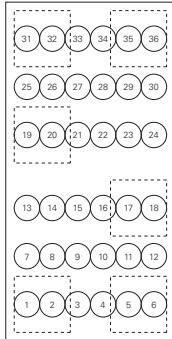
= mounting space for switch, push-button (2-pole) or signal lamp



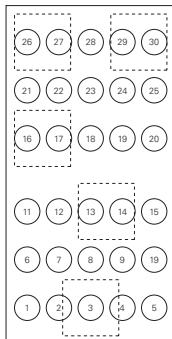
= mounting space for switch, push-button (4-pole) ampere- or voltmeter



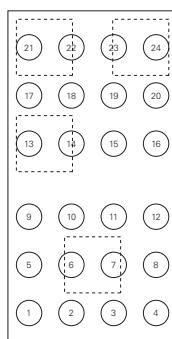
Mounting area | Dimension drawing



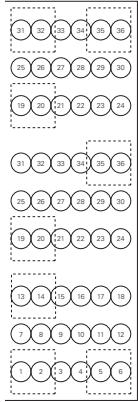
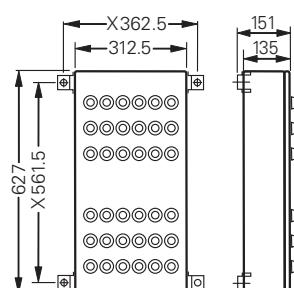
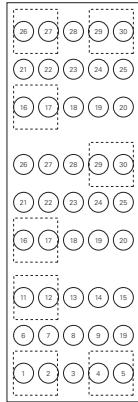
Distance between centres 40 mm



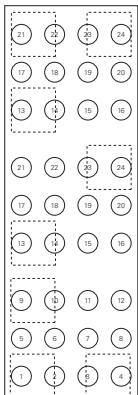
Distance between centres 50 mm



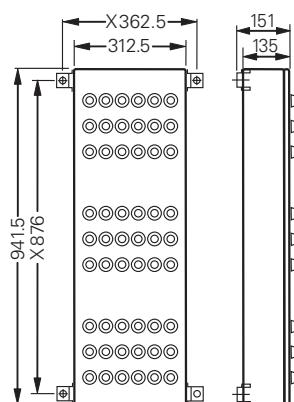
Distance between centres 60 mm

Distance between centres
40 mm

50 mm



Distance between centres 60 mm



X = fixing dimension