



GHG 293



GHG 292

**Technical data****4****Ex-control switch Typ 292 without and Typ 293 with measuring instrument**

	with GHG 29 Switch	with GHG 28 Switch
Marking accd. to 2014/34/EU	Ⓢ II 2 G Ex ed ia IIC T5/T6 Ⓢ II 2 D Ex tD A21 IP66 T80 °C	Ⓢ II 2 G Ex ad ia IIC T5/T6 Ⓢ II 2 D Ex tD A21 IP66 T80 °C
EC-Type Examination Certificate	PTB 99 ATEX 1163	PTB 99 ATEX 1163
IECEX Certificate of Conformity	IECEX BKI 07.0011	IECEX BKI 07.0011
Marking accord. to IECEx	Ex ed ia IIC T5 or T6 Ex tD A21 IP66 T49 °C	Ex ed ia IIC T5 or T6 Ex tD A21 IP66 T49 °C
Permissible ambient temperature	-20 °C up to +40 °C -55 °C up to +47 °C (T6) ... +55 °C (T5) Option	
Rated voltage	max. 500 V	max. 690 V
Rated current	16 A	20 A
Rated current with gold contact points	0.4 A	
Overload range (Type 293 only)	10 fold - 25 sec. 25 fold - 4 sec. 50 fold - 1 sec. indicated 1 : 1.5	
Measuring range (type only 293)	max. 0 - 25 A direct / n / 1A	
Accuracy (type 293 only)	Class 2.5	
Movement (type 293 only)	Moving iron	
Rated making-/rated breaking capacity accd. EN 60947-5-1	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	AC-15: $U_e$ 230 V / $I_e$ 8 A $U_e$ 400 V / $I_e$ 6 A DC-13: $U_e$ 24 V / $I_e$ 6 A $U_e$ 230 V / $I_e$ 0.4 A
Connecting terminals	2 x 0.5 - 2.5 mm <sup>2</sup> or 1 x 1.0 - 6.0 mm <sup>2</sup>	
Degree of protection accd. to EN 60529	IP66	
Cable glands/Gland plates/Enclosure drilling	1 x M25 cable gland <sup>1) 2)</sup>	
Dimensions (L x W x H)	GHG 292 GHG 293	170 x 110 x 129 mm 225 x 110 x 129 mm
Weight	GHG 292 GHG 293	approx. 1.10 kg (1 level) approx. 1.25 kg (2 level) approx. 1.40 kg (3 level) approx. 1.90 kg (1 level) approx. 2.05 kg (2 level) approx. 2.20 kg (3 level)
Enclosure material	glass-fibre reinforced polyester	
Enclosure colour	black	

<sup>1)</sup> Brass flange for metal entries available on request<sup>2)</sup> Control switches with direct indicating measuring instruments in the standard version are delivered with 2 looping terminals and PE terminal as well as M32 and M25 cable entries.

## Ex-control switch GHG 292 and GHG 293



GHG 292



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### 4 Ordering code for control switch (Code 2) Code A - B1 - B2 - C - D - E - E2 - F

Code            **A**            **B1 B2 C D E E2 F** <sup>1)</sup>

Order No.      **GHG 29\_**      -      -      -      -      -      -

Code	Component		Code	
A	Control switch		GHG 292	
	Control switch with measuring instrument		GHG 293	
Code	Switching system		Code	
B1	spring – engaging – spring		4	
	engaging – engaging – engaging		5	
	engaging – engaging		6	
	spring – engaging – engaging		7	
	engaging – engaging – spring		8	
Code	Contact	code for silver contact points	Contact	silver contact points
B2		062		034
		062		037
		065		049
		061		023
		063		019
		067		033
		011		024

Other versions as well as gold contact points are available on request.

Code	Inscription (labels)	Code	Inscription (labels)	Code
C	0	I	001	0
	I	II	002	AUS
	STOP	START	003	AUS
	HAND	AUTO	004	ÖRTLICH
	SENKEN	HEBEN	005	START
	REMOTE	LOCAL	006	OFF
	I	0	007	HAND
	AUS	BETRIEB	008	0
	AUS	0	009	MAN
	AUF	0	010	START
	Entriegelt	0	011	HEBEN
	OUT	OF	012	OFF
	LOCAL	REMOTE	013	AUS
	STOP	0	014	HAND
	HAND	0	015	ON
	AUF	AUS	016	I
	HAND	AUS	017	II
				III
				018
				019
				020
				021
				022
				023
				024
				025
				026
				027
				028
				029
				030
				031
				032
				033



Ordering code for control switch (Code 2) Code A - B1 - B2 - C - D - E1 - E2 - F

Code	Component		Code
D	none	<input type="checkbox"/>	0
	centre	<input type="checkbox"/>	1
	left	<input type="checkbox"/>	2
	right	<input type="checkbox"/>	3

Code	Movement	Code
E1	Direct connection	01
	CT connection 1 /A	02
	Connection 0 - 20/24 mA (scale 0-100% / 120%)	05
	Connection 4 - 20/24 mA (scale 0-100% / 120%)	06
	Moving-coil connection 0 - 20/24 mA (scale 0-100% / 120%)	07
	Moving-coil connection 4 - 20/24 mA (scale 0-100% / 120%)	08

Code	Measuring range/Scale	Code	Measuring range/Scale	Code
E2	0 - 1	002	0 - 75 /112.5 A	013
	0 - 2.5 / 3.75 A 2)	003	0 - 100 / 150 A	014
	0 - 5 / 7.5 A 2)	004	0 - 150 / 225 A	015
	0 - 10 / 15 A 2)	005	0 - 200 / 300 A	016
	0 - 15 / 22.5 A	006	0 - 250 / 375 A	017
	0 - 20 / 30 A 2)	008	0 - 300 / 450 A	018
	0 - 30 / 45 A	009	0 - 400 / 600 A	019
	0 - 40 / 60 A	010	0 - 500 / 750 A	020
	0 - 50 / 75 A	011	0 - 600 / 900 A	021
	0 - 60 / 90 A	012	0 - 100% / 150%	031

Code	Built-in components	Description	
F1	Entry type	entry direct in enclosure	GEH
		entry via plastic flange	FLK
		entry via metal flange	FLM
F2	Entry element	only threaded entry	BO
		screw plug	SV
		cable entry moulded plastic	GK
		cable entry moulded metal <sup>2)</sup>	GM2)
		cable entry with plug	GV
F3	Size	M12, M16, M20, M25, M32, M40	M1 Ø ..
		Ø21, Ø26	
F4	Number	number of entries	..

<sup>1)</sup> The code will represent only a selected part of configuration.

<sup>2)</sup> Only available with metal flange

## Ex-control switch GHG 292 and GHG 293



GHG 292



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

Control switch with silver contact points, Switching system „5“, Circuit „063“,  
 Labels „HAND-0-AUTO“, can be locked at „0“,  
 Measuring instrument AM72 for CT connection „n/1A“, Scale „0 - 50/75 A“,  
 Cable gland 1 x threaded entry M25 on bottom direct entry.

**Code A B1 B2 C D E1 E2 F1 F2 F3 F4**  
**GHG 293 / 5 / 063 / 015 / 1 / 2 / 011 / GEH / BO / M25 / 1**

### Ordering details

Switching system	Circuit	Code	Labels	Order No.
<b>Control switch Typ 292 with silver contact points</b>				
<b>Version with padlocking facility in „0“-, or position „right (Code 3)“; cable gland 1 x M25 bottom.</b>				
6		062	0 I	GHG 292 1000 R0001
6		065	0 I	GHG 292 1000 R0002
4		067	0 I	GHG 292 1000 R0003
8		067	0 I	GHG 292 1000 R0004
4		037	0 I	GHG 292 2000 R0002
8		037	0 I	GHG 292 2000 R0003
5		024	I 0 II	GHG 292 2000 R0004
5		023	HAND OFF AUTO	GHG 292 2001 R0001

Switching system	Circuit	Code	Labels	Order No.
<b>Control switch with measuring instrument type 293 with silver contact points. Version with padlocking facility in „0“-, or position „left“; measuring instrument AM 72 for CT connection n/1A, Scale 0 - 100/150 %. 1 x M32 bottom.</b>				

6		062	0 I	GHG 293 1000 R0001
6		065	0 I	GHG 293 1000 R0002

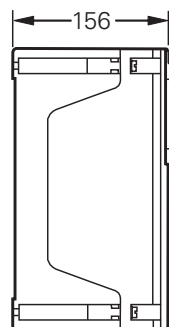
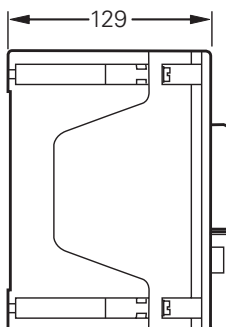
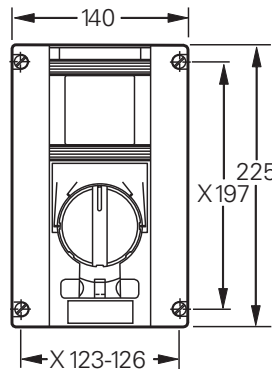
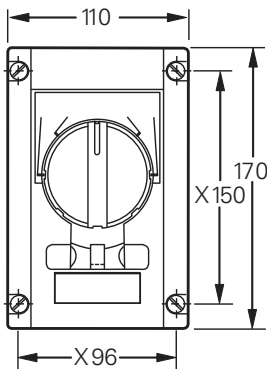


Accessories

Type	Application	Fixing method	OU	Order No.
<b>Mounting plate for type 292</b>				
Size 2	wall mounting	snap on	1	GHG 610 1953 R0104
Size 2	pipe clamp	snap on	1	GHG 610 1953 R0105
Size 2	trellis-work mounting	snap on	1	GHG 610 1953 R0106
Size 4	wall mounting	snap on *	1	GHG 610 1953 R0128
Size 4	trellis-work mounting	snap on *	1	GHG 610 1953 R0128
Size 4	pipe clamp	snap on *	1	GHG 610 1953 R0132
<b>Mounting plate for type 293</b>				
Size 3	wall mounting	snap on	1	GHG 610 1953 R0118
Size 3	pipe clamp	snap on	1	GHG 610 1953 R0110
Size 3	trellis-work mounting	snap on	1	GHG 610 1953 R0118
Size 5	wall mounting	snap on *	1	GHG 610 1953 R0128
Size 5	trellis-work mounting	snap on *	1	GHG 610 1953 R0128
Size 5	pipe clamp	snap on *	1	GHG 610 1953 R0132
Plug-in fastener for CEAG modules with 5.5 mm and 11 mm fixing elements 4 pieces			10	GHG 610 1953 R0041

\*snap-on with snap-on mounting 5.5 mm

Dimension drawing



GHG 292

GHG 293

X = fixing dimensions

Dimensions in mm



Type 411 83

Type 411 82

Type 411 81

Technical data

Ex-control stations Type 411 81   Type 411 82   Type 411 83		
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 BK1 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	
Rated making-/rated breaking capacity accd. EN 60947-5-1	Ex41 AC-15: U <sub>o</sub> 250 V / I <sub>o</sub> 6 A U <sub>o</sub> 500 V / I <sub>o</sub> 4 A DC-13: U <sub>o</sub> 24 V / I <sub>o</sub> 6 A U <sub>o</sub> 220 V / I <sub>o</sub> 1 A	Ex23 AC-15: U <sub>o</sub> 230 V / I <sub>o</sub> 6 A U <sub>o</sub> 500 V / I <sub>o</sub> 4 A DC-13: U <sub>o</sub> 24 V / I <sub>o</sub> 2 A U <sub>o</sub> 230 V / I <sub>o</sub> 0.5 A
Connecting terminals	2 x 2.5 mm <sup>2</sup>	
Protection class	I	
Degree of protection accd. to EN 60529	IP66 (standard)	
Cable glands/Gland plates/Enclosure drilling	1 x M25 Ex e cable glands for cables from Ø 8 - 17 mm or 1 x M20 thread with brass flange	
Enclosure material	Polyamide	
Enclosure colour	black	

Type 411 81

Dimensions (L x W x H)	85 x 85 x 77.5 mm
Weight (empty)	0.25 kg

Type 411 82

Dimensions (L x W x H)	125 x 85 x 77.5 mm
Weight (empty)	0.35 kg

Type 411 83

Dimensions (L x W x H)	165 x 85 x 77.5 mm
Weight (empty)	0.45 kg

Type 411 82 with measuring instrument AM 72

Movement	Moving iron	Moving coil
Marking accd. to 94/9/EC	Ⓜ II G Ex e II	Ⓜ II G Ex ib IIC
Accuracy	Class 2.5	Class 1.5
Overload range	10-fold -25 sec. 25-fold - 4 sec. 50-fold - 1 sec.	10-fold -5 sec.
Measuring range	n / 1A 0 - 25 A direct	0 - 20 mA 4 - 20 mA
Inductance L <sub>i</sub>	-	≤ 0.1 mH
Capacitance C <sub>i</sub>	-	≤ 0.1 nF
Open circuit voltage max. U <sub>i</sub>	-	30 V
Short circuit current max. I <sub>i</sub>	-	150 mA
Connecting terminals	2 x 1.5 - 4 mm <sup>2</sup>	
Weight	0.70 kg	

<sup>1)</sup> Base enclosure can be rotated after wards (entry from top or down)  
Other versions available on request

## Ex-control stations



Type 411 81...01



Type 411 81...12



Type 411 81...18



Type 411 81...04

4

### Ordering details Type 411 81 with 1 built-in component

Content	Built-in components	Weight approx.	Order No.
	1 x pushbutton DRT 1 NO + 1 NC label: "0, I, START, STOP"	0.40 kg	<b>GHG 411 8100 R0001</b>
	1 x mushroom-head pushbutton SGTE 1 NO + 1 NC "Emergency stop"	0.45 kg	<b>GHG 411 8100 R0002</b>
	1 x mushroom-head pushbutton SGTE 1 NO + 1 NC "Emergency stop" with key unlocking	0.50 kg	<b>GHG 411 8100 R0012</b>
	1 x double pushbutton DDT 1 NO + 1 NC label: "0, I, START, STOP"	0.45 kg	<b>GHG 411 8100 R0009</b>
	1 x key-operated switch SLS 2 NO SW 5 "engaging-engaging-engaging" label: "I 0 II"	0.52 kg	<b>GHG 411 8100 R0018</b>
	1 x control switch SCT 1 change-over SW 6 "engaging-engaging" label: HAND - AUTO label: "0 - I" label: "I - II"	0.45 kg 0.45 kg 0.45 kg	<b>GHG 411 8100 R0003</b> <b>GHG 411 8100 R0004</b> <b>GHG 411 8100 R0005</b>
	1 x control switch SCT 2 NO SW 5 "engaging-engaging-engaging" label: HAND - 0 - AUTO label: "I 0 II" label: "Local Remote Auto"	0.45 kg 0.45 kg 0.45 kg	<b>GHG 411 8100 R0006</b> <b>GHG 411 8100 R0007</b> <b>GHG 411 8100 R0008</b>



Type 411 82...18

Type 411 82...17

Type 411 82...03

Type 411 82...01

**Ordering details Type 411 82 with 2 built-in components**

Content	Built-in components	Weight approx.	Order No.
	2 x pushbutton DRT 1 NO + 1 NC each label: "0, I, START, STOP"	0.54 kg	<b>GHG 411 8200 R0001</b>
X1—⊗—X2  	1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 1 x double pushbutton DDT 1 NO + 1 NC label: "0, I, START, STOP"	0.65 kg	<b>GHG 411 8200 R0003</b>
	1 x double pushbutton DDT 1 NO + 1 NC label: "0, I, START, STOP"		
	1 x mushroom-head pushbutton SGT 1 NO + 1 NC "emergency stop"	0.57 kg	<b>GHG 411 8200 R0016</b>
	1 x control switch SCT 1 change-over SW 6 "engaging-engaging" label: "0 - I"		
	1 x mushroom-head pushbutton SGTE 1 NO + 1 NC "emergency stop"	0.57 kg	<b>GHG 411 8200 R0017</b>
X1—⊗—X2  	1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 1 x key-operated switch 2 NO SW 5 "engaging-engaging-engaging" label: "I 0 II"	0.65 kg	<b>GHG 411 8200 R0018</b>



## Ex-control stations



Type 411 83...01



Type 411 83...03



Type 411 83...23



Type 411 83...04

4

### Ordering details Type 411 83 with 3 built-in components

Content	Built-in components	Weight approx.	Order No.
<p>X1—⊗—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 2 x pushbutton DRT 1 NO + 1 NC each label: “0, I, START, STOP”</p>	0.76 kg	<b>GHG 411 8300 R0001</b>
<p>X1—⊗—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 1 x double pushbutton DDT 1 NO + 1 NC label: “0, I, START, STOP” 1 x mushroom-head pushbutton SGTE 1 NO + 1 NC “emergency stop”</p>	0.80 kg	<b>GHG 411 8300 R0003</b>
<p>1—⊗—2</p>	<p>1 x measuring instrument AM72 CT connection n/1A Scale 0 –100%/150% 1 x control switch SCT 1 NO + 1 NC SW 8 “engaging-engaging-spring return” label: “0 - I”</p>	0.92 kg	<b>GHG 411 8300 R0023</b>
<p>X1—⊗—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 1 x double pushbutton DDT 1 NO + 1 NC label: “0, I, START, STOP” 1 x control switch SCT 1 change-over SW 6 “engaging-engaging” label: “HAND - AUTO”</p>	0.80 kg	<b>GHG 411 8300 R0004</b>



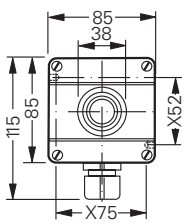
Measuring instrument AM72

**Ordering details measuring instrument AM72, Type 411 82**

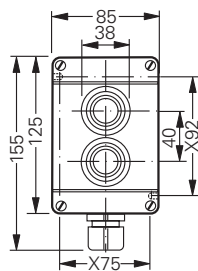
Content Movement	Weight	Order No.	
<b>Version direct measurement with 1 x entry and cable gland M25</b>			
0 - 1 / 1.5 A	Moving iron	0.70 kg	<b>GHG 411 8281 R0002</b>
0 - 2.5 / 3.75 A	Moving iron	0.70 kg	<b>GHG 411 8281 R0003</b>
0 - 5 / 7.5 A	Moving iron	0.70 kg	<b>GHG 411 8281 R0004</b>
0 - 10 / 15 A	Moving iron	0.70 kg	<b>GHG 411 8281 R0005</b>
0 - 16 / 24 A	Moving iron	0.70 kg	<b>GHG 411 8281 R0007</b>
0 - 20 / 24 mA 0-100% / 120% (Ri =320 Ω)	Moving coil	0.80 kg	<b>GHG 411 8285 R0033</b>
4 - 20 / 24 mA 0-100% / 120% (Ri =320 Ω)	Moving coil	0.80 kg	<b>GHG 411 8286 R0035</b>

<b>Version CT connection n/1A with 1 x entry and cable gland M25</b>			
0 - 1 / 1.5 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0002</b>
0 - 2.5 / 3.75 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0003</b>
0 - 5 / 7.5 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0004</b>
0 - 10 / 15 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0005</b>
0 - 15 / 22.5 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0007</b>
0 - 20 / 30 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0008</b>
0 - 30 / 45 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0009</b>
0 - 40 / 60 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0010</b>
0 - 50 / 75 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0011</b>
0 - 60 / 90 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0012</b>
0 - 75 / 112.5 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0013</b>
0 - 100 / 150 A	Moving iron	0.70 kg	<b>GHG 411 8282 R0014</b>
0 - 100% / 150%	Moving iron	0.70 kg	<b>GHG 411 8282 R0001</b>

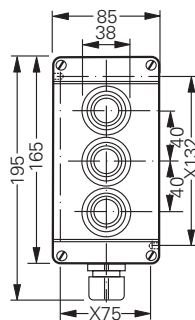
**Dimension drawing**



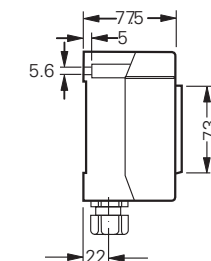
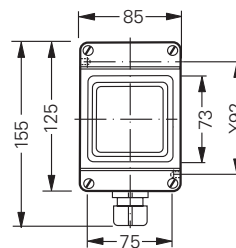
Type 411 81



Type 411 82



Type 411 83

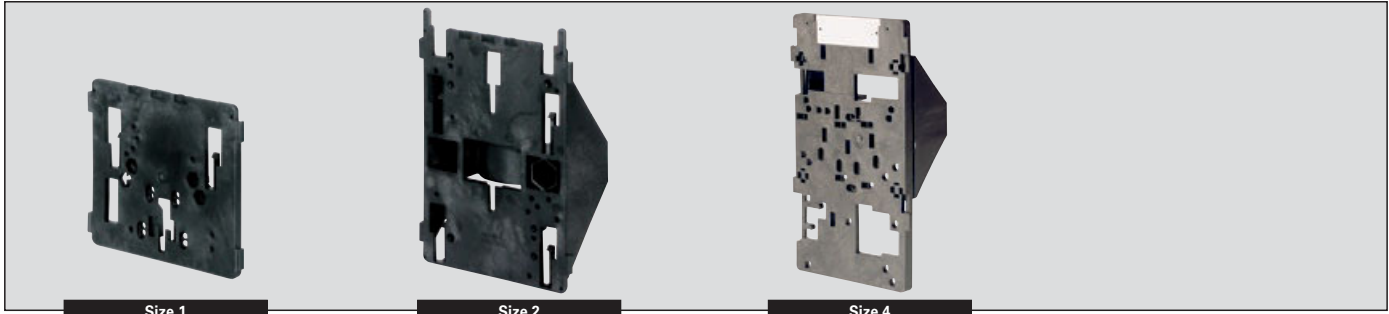


Measuring instrument AM 72

X = fixing dimension

Dimensions in mm

## Ex-control stations



Size 1

Size 2

Size 4

4

## Accessories

### Mounting plate for type 411 81

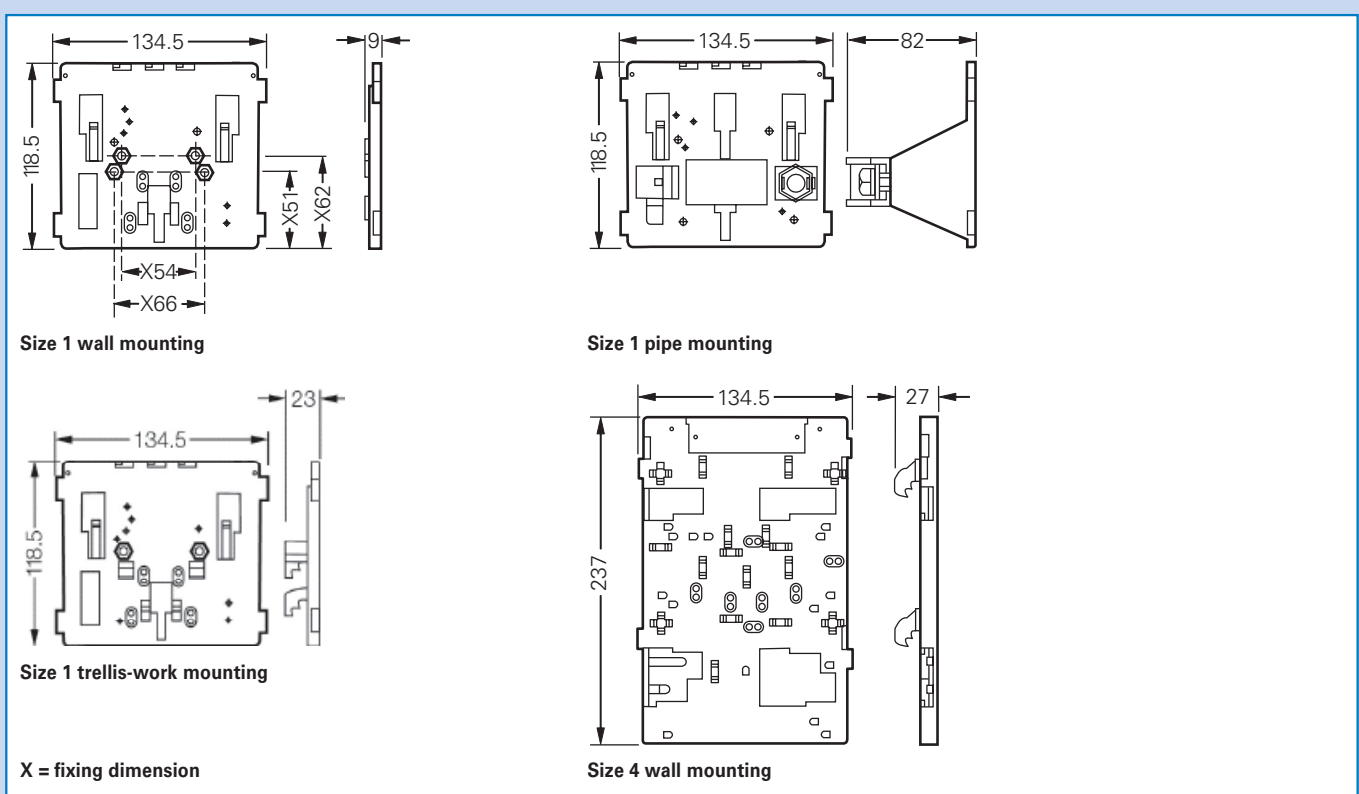
Type	Application	Fixing method	OU	Order No.
Size 1	Wall mounting	screwless mounting	1	GHG 610 1953 R0101
Size 1	Pipe clamp	screwless mounting	1	GHG 610 1953 R0102
Size 1	Trellis-work mounting	screwless mounting	1	GHG 610 1953 R0103
Size 4	Wall mounting	snap-on <sup>1)</sup>	1	GHG 610 1953 R0126
Size 4	Trellis-work mounting	snap-on <sup>1)</sup>	1	GHG 610 1953 R0126
Size 4	Pipe clamp	snap-on <sup>1)</sup>	1	GHG 610 1953 R0130

### Mounting plate for type 411 82 and 411 83

Type	Application	Fixing method	OU	Order No.
Size 2	Wall mounting	screwless mounting	1	GHG 610 1953 R0104
Size 2	Pipe clamp	screwless mounting	1	GHG 610 1953 R0105
Size 2	Trellis-work mounting	screwless mounting	1	GHG 610 1953 R0106
Size 4	Wall mounting	snap-on <sup>1)</sup>	1	GHG 610 1953 R0126
Size 4	Trellis-work mounting	snap-on <sup>1)</sup>	1	GHG 610 1953 R0126
Size 4	Pipe clamp	snap-on <sup>1)</sup>	1	GHG 610 1953 R0130
Plug-in fastener for CEAG modules with 5.5 mm and 11 mm mounting size per 4 pieces			10	GHG 610 1953 R0041

<sup>1)</sup> snap-on with snap-on mounting 5.5 mm

## Dimension drawing



Dimensions in mm



Type 434...



Type 432...

**Technical data**

**Ex-control stations Type 432 | Type 434**

Marking accd. to 94/9/EC	$\text{Ex}$ II 2 G Ex ed ib m IIC T6 $\text{Ex}$ II 2 D Ex tD A21 IP66 T80 °C										
EC-Type Examination Certificate	PTB 00 ATEX 3117										
IECEX Certificate of Conformity	IECEX BK1 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 (with control switch GHG 23 up to 500 V)										
Rated current	16 A (with control switch GHG 23 max. 10 A)										
Rated making-/rated breaking capacity accd. EN 60947-5-1	<table border="0"> <tr> <td>Ex41</td> <td>Ex23</td> </tr> <tr> <td>AC-15: <math>U_o</math> 250 V / <math>I_o</math> 6 A</td> <td>AC-15: <math>U_o</math> 230 V / <math>I_o</math> 6 A</td> </tr> <tr> <td><math>U_o</math> 500 V / <math>I_o</math> 4 A</td> <td><math>U_o</math> 500 V / <math>I_o</math> 4 A</td> </tr> <tr> <td>DC-13: <math>U_o</math> 24 V / <math>I_o</math> 6 A</td> <td>DC-13: <math>U_o</math> 24 V / <math>I_o</math> 2 A</td> </tr> <tr> <td><math>U_o</math> 220 V / <math>I_o</math> 1 A</td> <td><math>U_o</math> 230 V / <math>I_o</math> 0.5 A</td> </tr> </table>	Ex41	Ex23	AC-15: $U_o$ 250 V / $I_o$ 6 A	AC-15: $U_o$ 230 V / $I_o$ 6 A	$U_o$ 500 V / $I_o$ 4 A	$U_o$ 500 V / $I_o$ 4 A	DC-13: $U_o$ 24 V / $I_o$ 6 A	DC-13: $U_o$ 24 V / $I_o$ 2 A	$U_o$ 220 V / $I_o$ 1 A	$U_o$ 230 V / $I_o$ 0.5 A
Ex41	Ex23										
AC-15: $U_o$ 250 V / $I_o$ 6 A	AC-15: $U_o$ 230 V / $I_o$ 6 A										
$U_o$ 500 V / $I_o$ 4 A	$U_o$ 500 V / $I_o$ 4 A										
DC-13: $U_o$ 24 V / $I_o$ 6 A	DC-13: $U_o$ 24 V / $I_o$ 2 A										
$U_o$ 220 V / $I_o$ 1 A	$U_o$ 230 V / $I_o$ 0.5 A										
Connecting terminals	2 x 4 mm <sup>2</sup>										
Protection class	I										
Degree of protection accd. to EN 60529	IP66										
Cable glands/Gland plates/Enclosure drilling	2 x M25 Ex e cable glands for cables from Ø 8 - 17 mm incl. 1 blanking plug or optional 2 x M20 thread with internal brass plate										
Enclosure material	Polyamide										
Enclosure colour	black										

**Type 432**

Dimensions (L x W x H)	156 x 100 x 90 mm
Weight (empty)	0.47 kg

**Type 434**

Dimensions (L x W x H)	245 x 100 x 90 mm
Weight (empty)	0.70 kg

**Type 434 with measuring instrument AM 72**

Movement	Moving iron	Moving coil
Marking accd. to 94/9/EC	$\text{Ex}$ II G Ex e II	$\text{Ex}$ II G Ex ib IIC
Accuracy	Class 2.5	Class 1.5
Overload range	10-fold -25 sec. 25-fold - 4 sec. 50-fold - 1 sec.	10-fold -5 sec.
	indicated 1:1.5, optional 1:6, 1:10	
Measuring range	n / 1A 0 - 25 A direct	0 - 20 mA 4 - 20 mA
Inductance $L_i$	-	≤ 0.1 mH
Capacitance $C_i$	-	≤ 0.1 nF
Open circuit voltage max. $U_i$	-	30 V
Short circuit current max. $I_i$	-	150 mA
Connecting terminals	2 x 1.5 - 4 mm <sup>2</sup>	
Weight	1.25 kg	

<sup>1)</sup> Base enclosure can be rotated after wards (entry from top or down)  
Other versions available on request

## Ex-control stations



Type 432...01

Type 432...02

Type 432...03

Type 432...05

4

### Ordering details Type 432 with 2 built-in components

Content	Built-in components	Weight approx.	Order No.
	2 x pushbutton DRT 1 NO + 1 NC each	label: "0, I, START, STOP"	0.85 kg <b>GHG 432 0011 R0001</b>
	1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 1 x double pushbutton DDT 1 NO + 1 NC label: "0, I, START, STOP"	0.90 kg	<b>GHG 432 0011 R0002</b>
	1 x double pushbutton DDT 1 NO + 1 NC label: "0, I, START, STOP" 1 x mushroom-head pushbutton SGTE 1 NO + 1 NC "emergency stop"	0.85 kg	<b>GHG 432 0011 R0003</b>
	1 x measuring instrument AM45 CT connection n/1A Scale 0 –100%/150% 1 x double pushbutton DDT 2 NC + 1 NO label: "0, I, START, STOP"	0.95 kg	<b>GHG 432 0011 R0005</b>



Type 432...17

Type 432...05

Type 432...03

Ordering details Type 432 with 1 control switch GHG 23

Content	Built-in components	Weight approx.	Order No.
	1 x control switch GHG 23 1 change-over SW 6 "engaging-engaging" label: "HAND - AUTO" label: "0 - I"	0.70 kg 0.70 kg	<b>GHG 432 0001 R0003</b> <b>GHG 432 0001 R0004</b>
	1 x control switch GHG 23 2 NO SW 5 "engaging-engaging-engaging" label: "HAND 0 AUTO" label: "I 0 II"	0.70 kg 0.70 kg	<b>GHG 432 0001 R0005</b> <b>GHG 432 0001 R0006</b>
	1 x control switch GHG 23 1 NO + 1 NC SW 8 "engaging-engaging-spring return" label: "0 - I" label: "AUS-Betrieb-EIN" label: "0 IN START"	0.70 kg 0.70 kg 0.70 kg	<b>GHG 432 0001 R0012</b> <b>GHG 432 0001 R0013</b> <b>GHG 432 0001 R0014</b>
	1 x control switch GHG 23 2 C/O SW 6 "engaging-engaging" label: "I - II" label: "HAND - AUTO"	0.70 kg 0.70 kg	<b>GHG 432 0001 R0015</b> <b>GHG 432 0001 R0016</b>
	1 x control switch GHG 23 2 NO + 1 NC SW 5 "engaging-engaging-engaging" label: "I II III"	0.86 kg	<b>GHG 432 0001 R0017</b>
	1 x control switch GHG 23 2 NO + 1 NC SW 8 "engaging-engaging-spring return" label: "0 - I" label: "AUS-Betrieb-EIN" label: "0 IN START"	0.86 kg 0.86 kg 0.86 kg	<b>GHG 432 0001 R0018</b> <b>GHG 432 0001 R0019</b> <b>GHG 432 0001 R0020</b>

## Ex-control stations



Type 432...10



Type 432...09




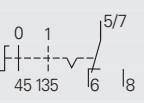

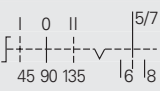

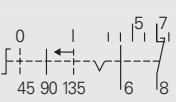
Type 432...08



Type 432...06

4

### Ordering details Type 432 with 2 built-in components

Content	Built-in components	Weight approx.	Order No.
1  - 2  	1 x measuring instrument AM45 CT connection n/1A Scale 0 –100%/150% 1 x control switch GHG 23 1 change-over SW 6 "spring return-engaging" label: "0 - I"	1.35 kg	<b>GHG 432 0011 R0006</b>
1  - 2  	1 x measuring instrument AM45 CT connection n/1A Scale 0 –100%/150% 1 x control switch GHG 23 2 NO SW 5 "engaging-engaging-engaging" label: "I 0 II"	1.35 kg	<b>GHG 432 0011 R0008</b>
1  - 2  	1 x measuring instrument AM45 CT connection n/1A Scale 0 –100%/150% 1 x control switch GHG 23 1 NO + 1 NC SW 8 "engaging-engaging-spring return" label: "0 - I"	1.35 kg	<b>GHG 432 0011 R0009</b>


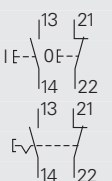



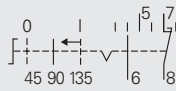


Type 434...11

Type 434...10

Type 434...02

**Ordering details Type 434 with 4 built-in components**

Content	Built-in components	Weight approx.	Order No.
<p>1  - 2</p> 	<p>1 x measuring instrument AM72                      CT connection n/1A                      Scale 0 -100%/150%                      1 x double pushbutton DDT                      1 NO + 1 NC                      label: "0, I, START, STOP"                      1 x mushroom-head pushbutton SGT                      1 NO + 1 NC                      "emergency stop"</p>	1.40 kg	<b>GHG 434 0111 R0002</b>
<p>1  - 2</p> 	<p>1 x measuring instrument AM72                      CT connection n/1A                      Scale 0 -100%/150%                      1 x mushroom-head pushbutton SGTE                      1 NO + 1 NC                      "emergency stop"                      1 x control switch GHG 23                      1 change-over                      SW 6 "engaging-engaging"                      label: "0 - I"</p>	1.55 kg	<b>GHG 434 0111 R0010</b>
<p>1  - 2</p> 	<p>1 x measuring instrument AM72                      CT connection n/1A                      Scale 0 -100%/150%                      1 x mushroom-head pushbutton SGTE                      1 NO + 1 NC                      "emergency stop"                      1 x control switch GHG 23                      1 NO + 1 NC                      SW 8 "engaging-engaging-spring return"                      label: "0 - I"</p>	1.55 kg	<b>GHG 434 0111 R0011</b>



## Ex-control stations



Type 434...04



Type 434...05

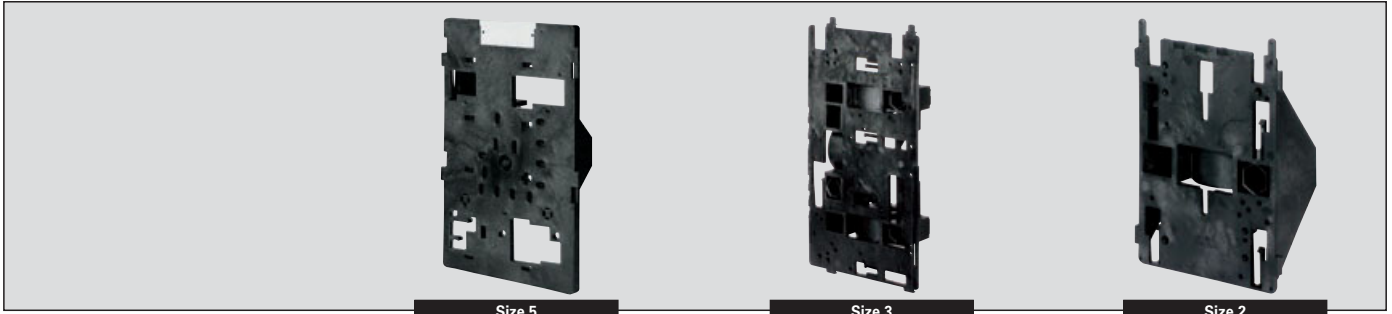


Type 434...09

4

### Ordering details Type 434 with 4 built-in components

Content	Built-in components	Weight approx.	Order No.
<p>X1—⊗—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 2 x pushbutton DRT 1 NO + 1 NC label: “0, I, START, STOP” 1 x mushroom-head pushbutton SGTE 1 NO + 1 NC “emergency stop”</p>	1.45 kg	<b>GHG 434 1111 R0004</b>
<p>X1—⊗—X2</p>	<p>2 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 2 x double pushbutton DDT 1 NO + 1 NC label: “0, I, START, STOP”</p>	1.45 kg	<b>GHG 434 1111 R0005</b>
<p>X1—⊗—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 1 x double pushbutton DDT 1 NO + 1 NC label: “0, I, START, STOP” 1 x mushroom-head pushbutton SGTE 1 NO + 1 NC “emergency stop” 1 x key-operated switch 2 NO SW 5 “engaging-engaging-engaging” label: “I 0 II”</p>	1.55 kg	<b>GHG 434 1111 R0009</b>



Size 5

Size 3

Size 2

Accessories

Mounting plate for type 432

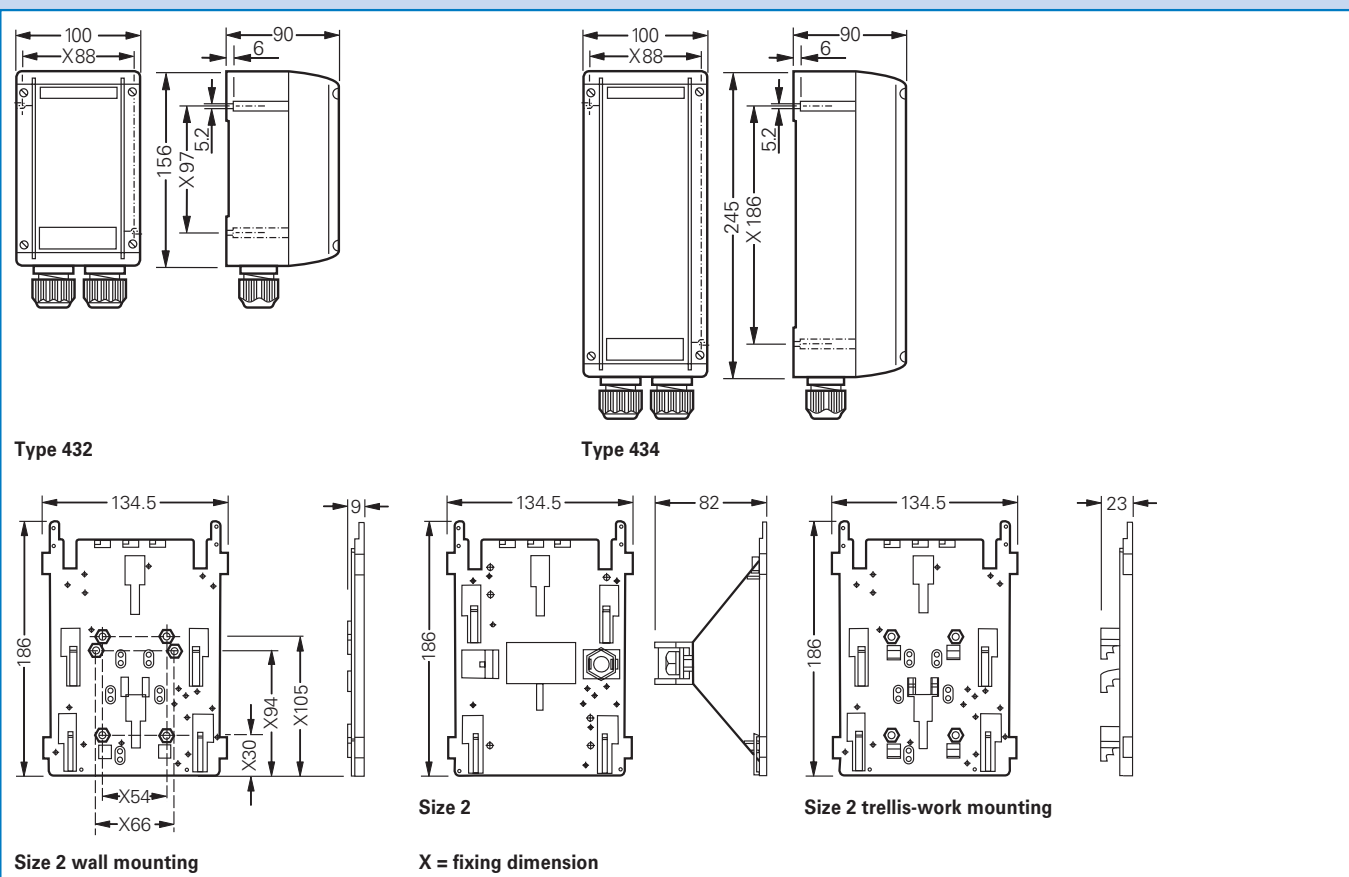
Type	Application	Fixing method	OU	Order No.
Size 2	Wall mounting	screwless mounting	1	GHG 610 1953 R0104
Size 2	Pipe clamp	screwless mounting	1	GHG 610 1953 R0105
Size 2	Trellis-work mounting	screwless mounting	1	GHG 610 1953 R0106
Size 5	Wall mounting	snap on *	1	GHG 610 1953 R0128
Size 5	Trellis-work mounting	snap on *	1	GHG 610 1953 R0128
Size 5	Pipe clamp	snap on *	1	GHG 610 1953 R0132

Mounting plate for type 434

Type	Application	Fixing method	OU	Order No.
Size 3	Wall mounting	screwless mounting	1	GHG 610 1953 R0118
Size 3	Pipe clamp	screwless mounting	1	GHG 610 1953 R0110
Size 3	Trellis-work mounting	screwless mounting	1	GHG 610 1953 R0118
Size 5	Wall mounting	snap on *	1	GHG 610 1953 R0128
Size 5	Trellis-work mounting	snap on *	1	GHG 610 1953 R0128
Size 5	Pipe clamp	snap on *	1	GHG 610 1953 R0132
Plug-in fastener for CEAG modules with 5.5 mm and 11 mm mounting size per 4 pieces			10	GHG 610 1953 R0041

\* snap-on with snap-on mounting 5.5 mm

Dimension drawing



Type 432

Type 434

Size 2 wall mounting

Size 2

Size 2 trellis-work mounting

X = fixing dimension

Dimensions in mm

## 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 <sup>1)</sup> ⊕ II 2 D Ex tD A21 IP66/IP65 T80 °C
EC-Type Examination Certificate	PTB 99 ATEX 1044 <sup>1)</sup>
IECEX Certificate of Conformity	IECEX BKI 07.0023 <sup>1)</sup>
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] IIC T4 .. T6 <sup>1)</sup> Ex tD A21 IP66 T80 °C
Permissible ambient temperature	-20 °C up to +40 °C <sup>1)</sup> -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	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

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

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

<sup>2)</sup> 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

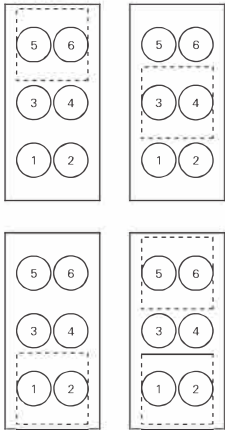


Type 449 23

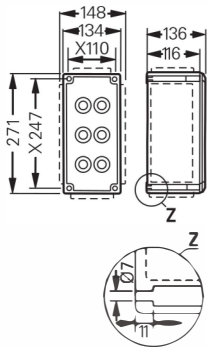


Type 447 23

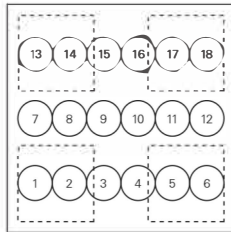
**4 Mounting areas | Dimension drawing**



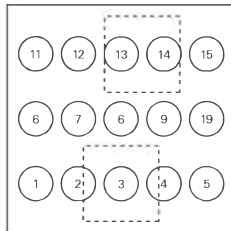
Distance between centres 40, 50 and 60 mm for positioning of built-in components



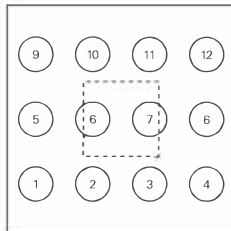
Type 444 23



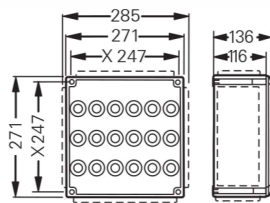
Distance between centres 40 mm



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

Dimensions in mm



Type 447 23



Type 449 23

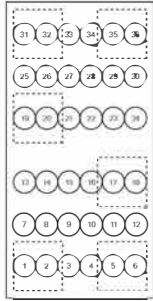


Type 448 23

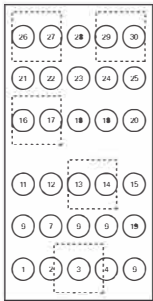


Type 444 23

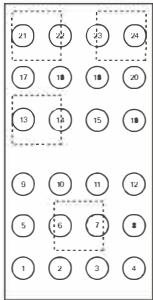
Mounting areas | Dimension drawing



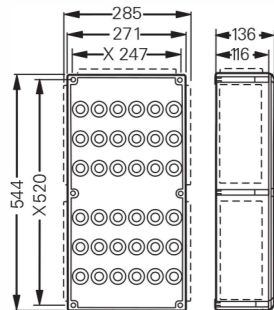
Distance between centres 40 mm



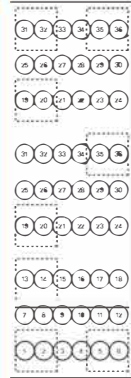
Distance between centres 50 mm



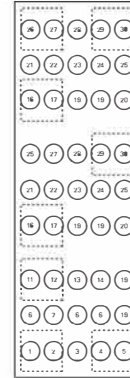
Distance between centres 60 mm



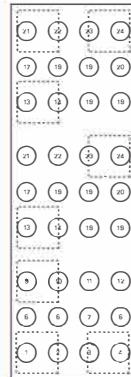
Type 449 23



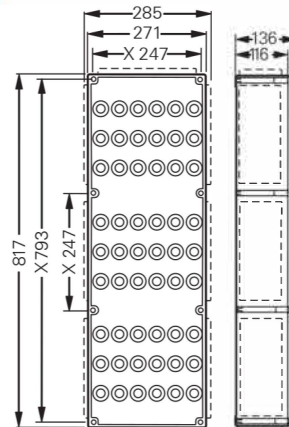
Distance between centres 40 mm



Distance between centres 50 mm



Distance between centres 60 mm



Type 447 23

X = fixing dimension

Dimensions in mm



Switch/Pushbutton

**Technical data**

**Ex-installation switch and Ex-pushbuttons**

Marking accd. to 94/9/EC	Ex II 2 G Ex de IIC T6 / Ex II 2 D Ex tD A21 IP66 T80 °C
EC-Type Examination Certificate	PTB 98 ATEX 3121
IECEX Certificate of Conformity	IECEX BKI 07.0036
Marking accd. to IECEx	Ex ed IIC T6 Ex tD A21 IP66 T67 °C
Permissible ambient temperature	-20 °C up to +40 °C -55 °C up to +55 °C (option)
Rated voltage	250 V, 50 - 60 Hz
Rated current	16 A
Connecting terminals	Switch terminals: 2 x 2.5 mm <sup>2</sup> / PE-terminals: 4 x 2.5 mm <sup>2</sup>
Degree of protection accd. to EN 60529	IP66
Cable glands <sup>1)</sup>	Ex e cable glands max. 2 x M25; 2 x M20 thread
Weight	0.32 kg
Enclosure material	Polyamide

**Ordering details**

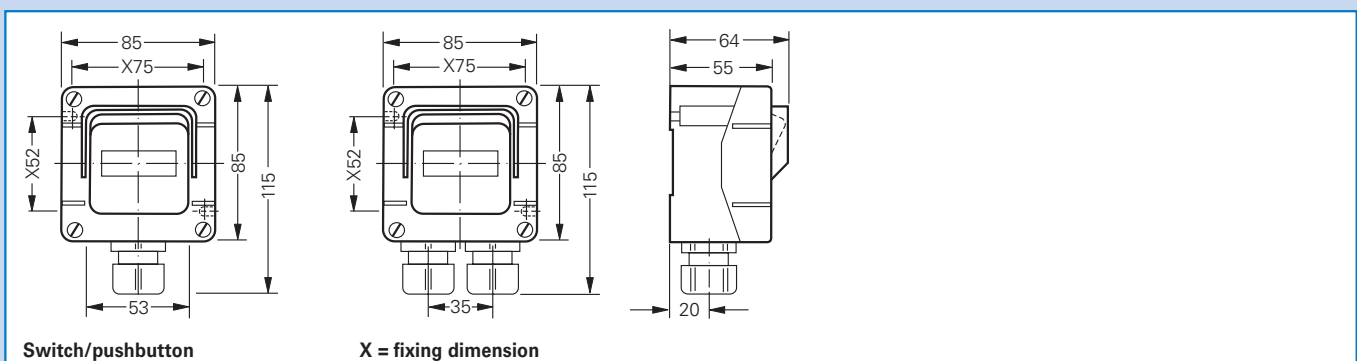
Type	Circuit	Cable glands <sup>1)</sup>	Order No.
ON-OFF switch 2-pole  -55 °C up to +55 °C		1 x M25	<b>GHG 273 2000 R0017</b>
		2 x M25	<b>GHG 273 2000 R0018</b>
		2 x M20 <sup>2)</sup>	<b>GHG 273 2000 R0003</b>
		1 x M25	<b>GHG 273 2000 R0022</b>
Change-over switch  -55 °C up to +55 °C		1 x M25	<b>GHG 273 6000 R0011</b>
		2 x M20 <sup>2)</sup>	<b>GHG 273 6000 R0003</b>
		2 x M25	<b>GHG 273 6000 R0014</b>
		2 x M25	<b>GHG 273 2000 R9017</b>
Pushbutton  -55 °C up to +55 °C		1 x M25	<b>GHG 273 4000 R0004</b>
		2 x M25	<b>GHG 273 4000 R0007</b>
		1 x M25	<b>GHG 273 2000 R0010</b>

<sup>1)</sup> Base enclosure can be rotated after wards (entry from top or down)

<sup>2)</sup> Threaded only

Other versions available on request

**Dimension drawing**



Dimensions in mm