

An aerial photograph of a large offshore oil platform in the middle of a deep blue ocean. The platform has a yellow and red helipad on top, various pipes, ladders, and structural elements. The water is choppy with small waves.

# **Ex-Control units and control stations**









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#### 4 Material selection

At the heart of every electrical system is the control station. Even under the most adverse conditions, CEAG control stations can be used and operated reliably. The enclosures consist of impact-resistant thermoplastic, glass-fibre-reinforced polyester, light alloy or stainless steel. The robust materials, thermoplastic and polyester, fulfil the specification for surface resistance  $< 10^9 \Omega$  required by EN 60079. The well-tried enclosure materials have proven their high resistance to chemicals in indoor and outdoor installations – especially in the chemical and off-shore industries. All metal parts are made of stainless steel.



#### Combination of moulded plastic enclosures

The modular design of the GHG 44x control-station series lets you combine distribution modules with screwless snap-on mounting logically and at low cost. Standard sizes enable enclosure mounting via flanged joints. The screwless snap-on mounting system also allows the attachment of plastic or brass flanges on the enclosures. This mounting technique also lets you quickly and easily retrofit cable entries on the flanges. System modifications and extensions can thus be implemented in short time and with little effort.







with a slip-on strain relief and protective cap and is then completely certified. Planning and procurement of panel-mounted apparatus with different cable lengths is a thing of the past.

### Panel mounting

CEAG control and indicating elements can be integrated in panels with a wall thickness of up to 5 mm. The CEAG components for panel mounting, such as signal lamps, pushbuttons and switches, can be instantly plugged into the control and indicating elements on the panel via a bayonet-ring fitting. The single-wire installation is clear and simple. All panel-mounted apparatus can be retrofitted for cable connection

### Installation technology

CEAG control stations have a well thought out design concept. The flameproof built-in components, such as signal lamps, pushbuttons and switches, are snap-on mounted to a rail moulded in the enclosure. They can be snapped out of the enclosure to facilitate cable-entry feeding. Notches in the mounting rails define the position of the built-in components and prevent them from being twisted out of place. Low-cut side walls allow a quick and optimised cable connection. CEAG control stations feature standard M25 moulded-plastic cable entries with an 8 to 17 mm clamping diameter. Alternatively, metal screws and flanges can be used for mounting. The metal flanges enable external earthing. The CEAG control stations are installed using pre-wired connection terminals. The wired built-in components are snap-on mounted on a stainless-steel fold-out mounting frame. To connect the control and indicating elements, the mounting frame is folded out, the cables are quickly and easily fed into enclosure and attached logically to the terminals.





# EX - INSTALLATION SWITCH

**16 A, 250 V**  
**Plastic version for Zone 1 and Zone 21**

The explosion-protected installation switches are for use in the Zones 1, 2, 21 and 22. The materials used have proved to be safe and reliable for both indoor and outdoor installations, in particular in chemical and off-shore plants. The robust housings are made of a modified polyamide material.

The large actuator surface of the installation switch allows perfect operation, even when wearing working gloves. A protective collar prevents inadvertent operation. The toggle has a luminescent label which is in accordance with §7 of the Workshop Regulations and is also free from radioactive additives. Due to the external fixing facility, the switch can be installed easily while the cover is closed. Cable entry from the top is made possible by turning the base. In special cases a through wiring is possible as one can see on the illustration opposite.

**International approvals.**

- Large toggle also for working gloves
- Safety standard IP66
- Cable entry from the top or bottom
- Connecting terminals easily accessible







Switch/Pushbutton

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## 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

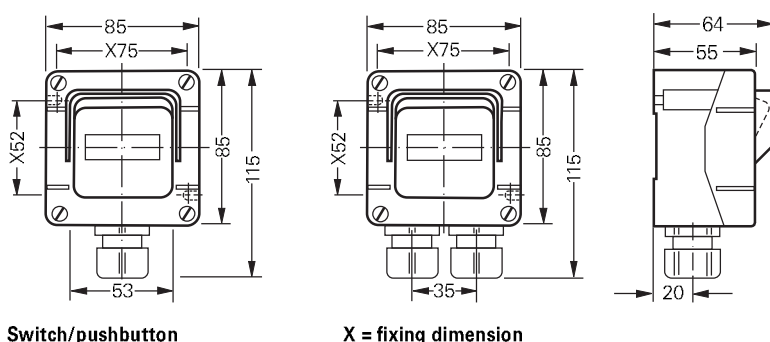
Type	Circuit	Cable glands <sup>1)</sup>	Order No.
ON-OFF switch 2-pole		1 x M25 2 x M25 2 x M20 <sup>2)</sup>	GHG 273 2000 R0017 GHG 273 2000 R0018 GHG 273 2000 R0003
-55 °C up to +55 °C		1 x M25	GHG 273 2000 R0022
Change-over switch		1 x M25 2 x M20 <sup>2)</sup> 2 x M25	GHG 273 6000 R0011 GHG 273 6000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

<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



# EX - CONTROL STATIONS

**Moulded plastic  
Version for Zone 1 and Zone 21**

Even under the most adverse conditions, CEAG control stations can be used and operated reliably. 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. 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. They 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.

Wall mounting can be carried out via easily accessible fixing apertures when the enclosure cover is sealed. CEAG mounting plates offer a time-saving fixing technique. CEAG control stations feature standard M25 moulded-plastic cable entries with an 8 to 17 mm clamping diameter. 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.

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 of all built-in components
- High chemical resistance
- Different enclosures can be combined








**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 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	
Rated making-/rated breaking capacity accd. EN 60947-5-1	Ex41 AC-15: U <sub>b</sub> 250 V / I <sub>b</sub> 6 A U <sub>b</sub> 500 V / I <sub>b</sub> 4 A DC-13: U <sub>b</sub> 24 V / I <sub>b</sub> 6 A U <sub>b</sub> 220 V / I <sub>b</sub> 1 A	Ex23 AC-15: U <sub>b</sub> 230 V / I <sub>b</sub> 6 A U <sub>b</sub> 500 V / I <sub>b</sub> 4 A DC-13: U <sub>b</sub> 24 V / I <sub>b</sub> 2 A U <sub>b</sub> 230 V / I <sub>b</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	Ex II G Ex e II	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.
Measuring range	n / 1A 0 - 25 A direct	0 - 20 mA 4 - 20 mA
Inductance Li	—	≤ 0.1 mH
Capacitance Ci	—	≤ 0.1 nF
Open circuit voltage max. Ui	—	30 V
Short circuit current max. Ii	—	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

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### 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**
**4**

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

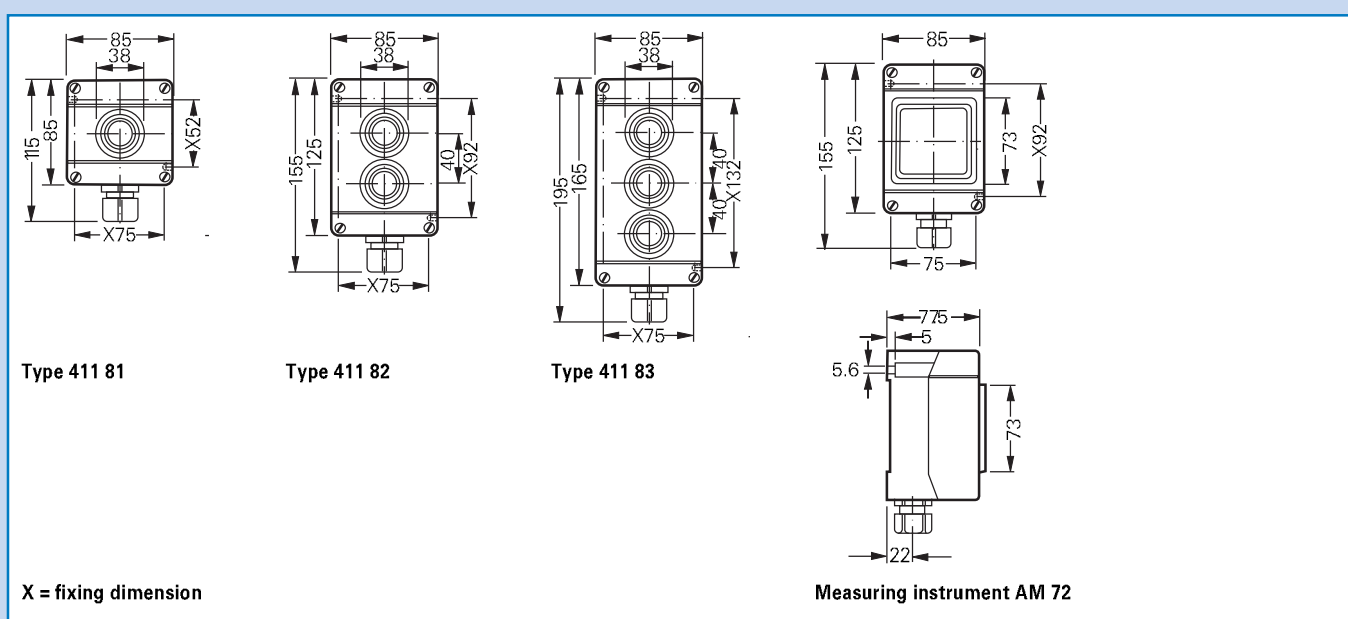
Content	Built-in components	Weight approx.	Order No.
<p>X1—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ 2 x pushbutton DRT 1 NO + 1 NC each label: “0, I, START, STOP”</p>	0.76 kg	<b>GHG 411 8300 R0001</b>
<p>X1—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC 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**
**4**
**Ordering details measuring instrument AM72, Type 411 82**

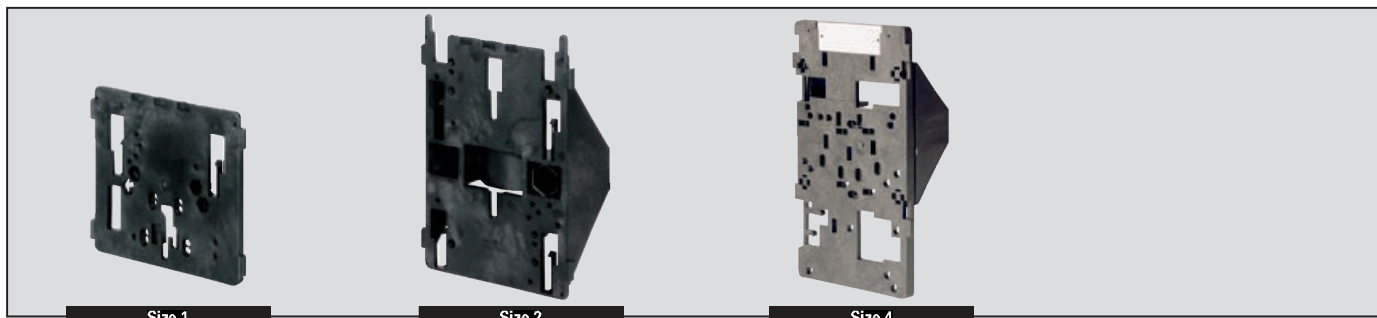
Content Movement	Weight	Order No.	
<b>Version direct measurement with 1 x entry and cable gland M25</b>			
0 - 1 / 1.5 A	Moving iron	0.70 kg	GHG 411 8281 R0002
0 - 2.5 / 3.75 A	Moving iron	0.70 kg	GHG 411 8281 R0003
0 - 5 / 7.5 A	Moving iron	0.70 kg	GHG 411 8281 R0004
0 - 10 / 15 A	Moving iron	0.70 kg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

<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	GHG 411 8282 R0002
0 - 2.5 / 3.75 A	Moving iron	0.70 kg	GHG 411 8282 R0003
0 - 5 / 7.5 A	Moving iron	0.70 kg	GHG 411 8282 R0004
0 - 10 / 15 A	Moving iron	0.70 kg	GHG 411 8282 R0005
0 - 15 / 22.5 A	Moving iron	0.70 kg	GHG 411 8282 R0007
0 - 20 / 30 A	Moving iron	0.70 kg	GHG 411 8282 R0008
0 - 30 / 45 A	Moving iron	0.70 kg	GHG 411 8282 R0009
0 - 40 / 60 A	Moving iron	0.70 kg	GHG 411 8282 R0010
0 - 50 / 75 A	Moving iron	0.70 kg	GHG 411 8282 R0011
0 - 60 / 90 A	Moving iron	0.70 kg	GHG 411 8282 R0012
0 - 75 / 112.5 A	Moving iron	0.70 kg	GHG 411 8282 R0013
0 - 100 / 150 A	Moving iron	0.70 kg	GHG 411 8282 R0014
0 - 100% / 150%	Moving iron	0.70 kg	GHG 411 8282 R0001

**Dimension drawing**


Dimensions in mm

## Ex-control stations



Size 1

Size 2

Size 4

4

## Accessories

### Mounting plate for type 411 81

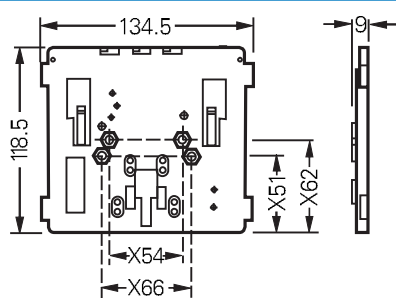
Type	Application	Fixing method	OU	Order No.
Size 1	Wall mounting	screwless mounting	1	GHG 610 1953 R0101
Size 1	Pipe clamp	screwless mounting	1	GHG 610 1953 R0102
Size 1	Trellis-work mounting	screwless mounting	1	GHG 610 1953 R0103
Size 4	Wall mounting	snap-on <sup>1)</sup>	1	GHG 610 1953 R0126
Size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

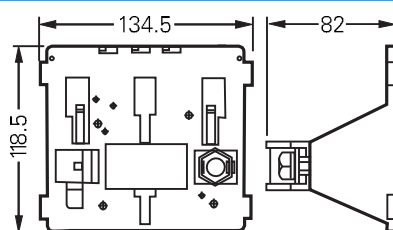
Type	Application	Fixing method	OU	Order No.
Size 2	Wall mounting	screwless mounting	1	GHG 610 1953 R0104
Size 2	Pipe clamp	screwless mounting	1	GHG 610 1953 R0105
Size 2	Trellis-work mounting	screwless mounting	1	GHG 610 1953 R0106
Size 4	Wall mounting	snap-on <sup>1)</sup>	1	GHG 610 1953 R0126
Size 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

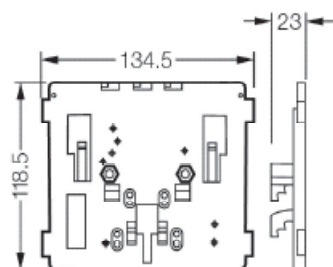
## Dimension drawing



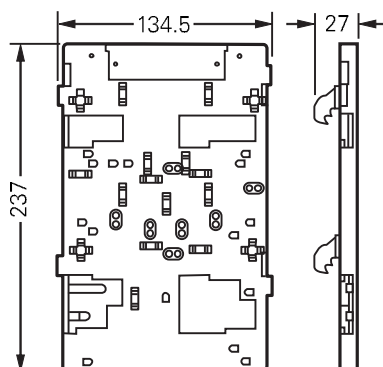
Size 1 wall mounting



Size 1 pipe mounting



Size 1 trellis-work mounting



Size 4 wall mounting

X = fixing dimension

Dimensions in mm






**Type 434...**

**Type 432...**

## Technical data

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

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 (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	Ex41 AC-15: U <sub>b</sub> 250 V / I <sub>b</sub> 6 A U <sub>b</sub> 500 V / I <sub>b</sub> 4 A DC-13: U <sub>b</sub> 24 V / I <sub>b</sub> 6 A U <sub>b</sub> 220 V / I <sub>b</sub> 1 A	Ex23 AC-15: U <sub>b</sub> 230 V / I <sub>b</sub> 6 A U <sub>b</sub> 500 V / I <sub>b</sub> 4 A DC-13: U <sub>b</sub> 24 V / I <sub>b</sub> 2 A U <sub>b</sub> 230 V / I <sub>b</sub> 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	Ex II G Ex e II	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. indicated 1:1.5, optional 1:6, 1:10	10-fold -5 sec.
Measuring range	n / 1A 0 - 25 A direct	0 - 20 mA 4 - 20 mA
Inductance Li	—	≤ 0.1 mH
Capacitance Ci	—	≤ 0.1 nF
Open circuit voltage max. Ui	—	30 V
Short circuit current max. Ii	—	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

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### 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**
**4**

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

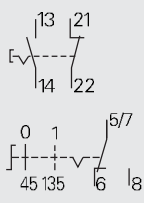
Content	Built-in components	Weight approx.	Order No.
1 —  — 2  	1 x measuring instrument AM45 CT connection n/1A Scale 0 –100%/150% 1 x control switch GHG 23 1 change-over SW 6 “spring return-engaging” label: “0 – I”	1.35 kg	<b>GHG 432 0011 R0006</b>
1 —  — 2  	1 x measuring instrument AM45 CT connection 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**
**4**

Content	Built-in components	Weight approx.	Order No.
1  2  	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"	1.40 kg	<b>GHG 434 0111 R0002</b>
1  2  	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"	1.55 kg	<b>GHG 434 0111 R0010</b>
1  2  	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"	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>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>





# EX - CONTROL STATIONS

## Light alloy Version for Zone 1 and Zone 21

Light-alloy control stations in explosion-protected design are equipped with up to four components. These control stations are made of high-quality cast aluminium-silicon (AlSi). A robust plastic powder coating according to RAL 7031 protects the CEAG control stations against aggressive atmospheres and chemicals. Cover screws as well as all internal and external metal parts are made of stainless steel. CEAG flameproof built-in components, such as signal lamps, pushbuttons and switches, provide snap-on mounting on rails screwed into the enclosures.

To facilitate insertion of cables into the entries, the built-in components can be snapped out of the enclosures. Notches in the mounting rails define the position of the built-in components and prevent them from being twisted out of place.

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

**Internationally approved.**

- High mechanical, chemical and thermal resistance
- Individual configuration
- Impact-resistant plastic powder coating




**Measuring instrument AM72**
**Type 413 85**
**Type 413 84**

## Technical data

### Ex-control stations Type 413 84 | Type 413 85

Marking accd. to 94/9/EC	Ex II 2 G Ex ed ibm 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 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 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	Ex41 AC-15: $U_b$ 250 V / $I_b$ 6 A $U_b$ 500 V / $I_b$ 4 A DC-13: $U_b$ 24 V / $I_b$ 6 A $U_b$ 220 V / $I_b$ 1 A
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	1 x M20 threaded entry
Enclosure material	High quality cast aluminium (AlSi)
Enclosure colour	grey RAL 7031

#### Type 413 84

Dimensions (L x W x H)	122 x 120 x 81 mm
Weight (empty)	0.85 kg

#### Type 413 85

Dimensions (L x W x H)	220 x 120 x 81 mm
Weight (empty)	1.45 kg

#### Type 413 84 with measuring instrument AM 72

Movement	Moving iron	Moving coil
Marking accd. to 94/9/EC	Ex II G Ex e II	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. indicated 1:1.5, optional 1:6, 1:10	10-fold -5 sec.
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 413 84...01



Type 413 84...02



Type 413 84...03



Type 413 84...04

4

### Ordering details Type 413 84 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"	1.25 kg	<b>GHG 413 8400 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"	1.30 kg	<b>GHG 413 8400 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"	1.30 kg	<b>GHG 413 8400 R0003</b>
	1 x measuring instrument AM45 CT connection n/1A Scale 0 –100%/150% 1 x double pushbutton DDT 1 NO + 1 NC label: "0, I, START, STOP"	1.35 kg	<b>GHG 413 8400 R0004</b>



Type 413 85...03



Type 413 85...02



Type 413 85...01

## Ordering details Type 413 85 with 4 built-in components

4

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>	2.10 kg	<b>GHG 413 8500 R0001</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>	2.10 kg	<b>GHG 413 8500 R0002</b>
<p>X1—X2</p>	<p>1 x signal lamp SIL 20-250 V AC/DC coloured lens cover: „white, red, green, yellow“ label: “I 0 II” 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>	2.20 kg	<b>GHG 413 8500 R0003</b>



## Ex-control stations



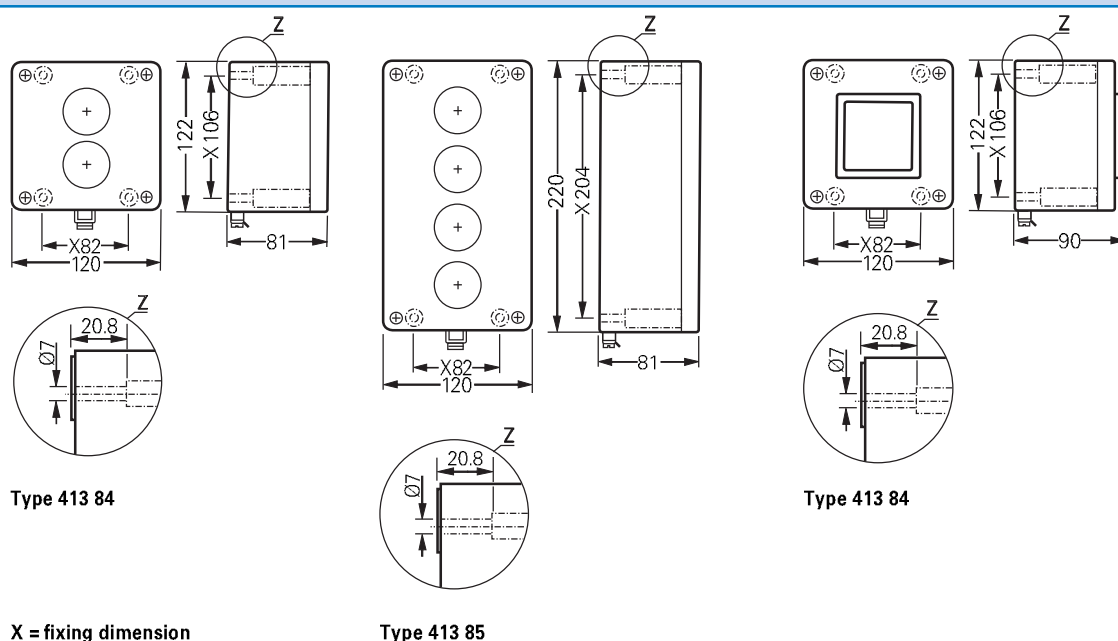
Measuring instrument AM72

4

### Ordering details Type 413 84 with measuring instrument AM72

Content Movement	Weight approx.	Order No.	
<b>Version direct measurement with 1 x threaded entry M20</b>			
0 - 1 / 1.5 A	Moving iron	1.25 kg	<b>GHG 413 8481 R0002</b>
0 - 2.5 / 3.75 A	Moving iron	1.25 kg	<b>GHG 413 8481 R0003</b>
0 - 5 / 7.5 A	Moving iron	1.25 kg	<b>GHG 413 8481 R0004</b>
0 - 10 / 15 A	Moving iron	1.25 kg	<b>GHG 413 8481 R0005</b>
0 - 16 / 24 A	Moving iron	1.25 kg	<b>GHG 413 8481 R0007</b>
0 - 20 / 24 mA 0-100% / 120% (Ri = 320 Ω)	Moving coil	1.35 kg	<b>GHG 413 8481 R0033</b>
4 - 20 / 24 mA 0-100% / 120% (Ri = 320 Ω)	Moving coil	1.35 kg	<b>GHG 413 8481 R0035</b>
<b>Version CT connection n/1A with 1 x threaded entry M20</b>			
0 - 1 / 1.5 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0002</b>
0 - 2.5 / 3.75 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0003</b>
0 - 5 / 7.5 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0004</b>
0 - 10 / 15 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0005</b>
0 - 15 / 22.5 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0007</b>
0 - 20 / 30 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0008</b>
0 - 30 / 45 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0009</b>
0 - 40 / 60 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0010</b>
0 - 50 / 75 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0011</b>
0 - 60 / 90 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0012</b>
0 - 75 / 112.5 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0013</b>
0 - 100 / 150 A	Moving iron	1.25 kg	<b>GHG 413 8482 R0014</b>
0 - 100% / 150%	Moving iron	1.25 kg	<b>GHG 413 8482 R0033</b>

### Dimension drawing





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

**Stainless steel**  
**Version for Zone 1 and Zone 21**

CEAG explosion-protected control stations made of high-grade 316L stainless steel are designed to accommodate up to four built-in components. These stainless-steel control stations with electro-polished surfaces offer protection for applications in the off-shore industry and at sites with especially severe mechanical, chemical and climatic conditions.

CEAG flameproof built-in components, such as signal lamps, pushbuttons and switches, provide snap-on mounting on rails screwed into the enclosures. To facilitate insertion of cables into the entries, the built-in components can be snapped out of the enclosures. Notches in the mounting rails define the position of the built-in components and prevent them from being twisted out of place.

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

**Internationally approved.**

- High mechanical, chemical and thermal resistance
- Individual configuration
- Clean-room applications





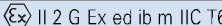


**Type 414 81..**

**Type GHG 414 82**

**Type GHG 414 81**

## Technical data

### Ex-control stations Type 414 81 | Type 414 82

Marking accd. to 94/9/EC	 	
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, Ec 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	Ex41 AC-15: U <sub>b</sub> 250 V / I <sub>b</sub> 6 A U <sub>b</sub> 500 V / I <sub>b</sub> 4 A DC-13: U <sub>b</sub> 24 V / I <sub>b</sub> 6 A U <sub>b</sub> 220 V / I <sub>b</sub> 1 A with gold contact points max. 0.4 A	Ex23 AC-15: U <sub>b</sub> 230 V / I <sub>b</sub> 6 A U <sub>b</sub> 500 V / I <sub>b</sub> 4 A DC-13: U <sub>b</sub> 24 V / I <sub>b</sub> 2 A U <sub>b</sub> 230 V / I <sub>b</sub> 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	1 x thread Ø 21 mm for cable gland M20	
Enclosure material	Stainless steel AISI 316 L	

#### Type 414 81

Dimensions (L x W x H)	166 x 140 x 76 mm
Weight (empty)	1.40 kg

#### Type 414 82

Dimensions (L x W x H)	286 x 140 x 76 mm
Weight (empty)	2.10 kg

#### Type 414 81 with measuring instrument AM 72

Movement	Moving iron	Moving coil
Marking accd. to 94/9/EC	Ex II G Ex e II	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. indicated 1:1.5	10-fold -5 sec.
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 414 81...01



Type 414 81...02



Type 414 81...03



Type 414 81...04

4

### Ordering details Type 414 81 with 2 built-in components

Content*	Built-in components	Weight approx.	Order No.
	2 x pushbutton DRT NO + 1 NC each label: "0, I, START, STOP"	1.80 kg	<b>GHG 414 8100 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"	1.85 kg	<b>GHG 414 8100 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"	1.85 kg	<b>GHG 414 8100 R0003</b>
	1 x measuring instrument AM45 CT connection n/1A Scale 0 –100%/150% 1 x double pushbutton DDT 1 NO + 1 NC label: "0, I, START, STOP"	1.85 kg	<b>GHG 414 8100 R0004</b>

\*Without external fixing lugs (see accessories NO. 9.30)



Type 414 82...03

Type 414 82...02

Type 414 82...01

## Ordering details Type 414 82 with 4 built-in components

4

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 SGT 1 NO + 1 NC “emergency stop”</p>	2.80 kg	<b>GHG 414 8200 R0001</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>	2.80 kg	<b>GHG 414 8200 R0002</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 SGT 1 NO + 1 NC “emergency stop” 1 x key-operated switch 2 NO SW 5 “engaging-engaging-engaging” label: “I 0 II”</p>	2.90 kg	<b>GHG 414 8200 R0003</b>

\*Without external fixing lugs (see accessories NO. 9.30)

## Ex-control stations



Type 414 81..

4

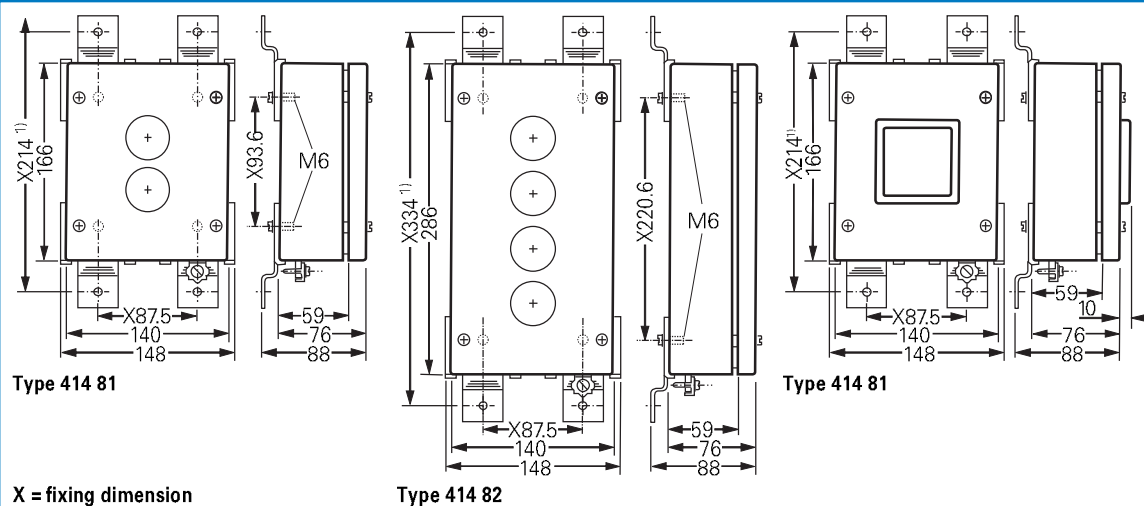
### Ordering details Type 414 81 with measuring instrument AM72

Content	Movement	Weight approx.	Order No.
<b>Version direct measurement with 1 x threaded entry Ø 21 mm (without external fixing lugs)</b>			
0 - 1 / 1.5 A	Moving iron	1.25 kg	GHG 414 8181 R0002
0 - 2.5 / 3.75 A	Moving iron	1.25 kg	GHG 414 8181 R0003
0 - 5 / 7.5 A	Moving iron	1.25 kg	GHG 414 8181 R0004
0 - 10 / 15 A	Moving iron	1.25 kg	GHG 414 8181 R0005
0 - 16 / 24 A	Moving iron	1.25 kg	GHG 414 8181 R0007
0 - 20 / 24 mA 0-100% / 120% (Ri = 320 Ω)	Moving coil	1.35 kg	GHG 414 8181 R0033
4 - 20 / 24 mA 0-100% / 120% (Ri = 320 Ω)	Moving coil	1.35 kg	GHG 414 8181 R0035
<b>Version CT connection n/1A with 1 x threaded entry Ø 21 mm (without external fixing lugs)</b>			
0 - 1 / 1.5 A	Moving iron	1.25 kg	GHG 414 8182 R0002
0 - 2.5 / 3.75 A	Moving iron	1.25 kg	GHG 414 8182 R0003
0 - 5 / 7.5 A	Moving iron	1.25 kg	GHG 414 8182 R0004
0 - 10 / 15 A	Moving iron	1.25 kg	GHG 414 8182 R0005
0 - 15 / 22.5 A	Moving iron	1.25 kg	GHG 414 8182 R0007
0 - 20 / 30 A	Moving iron	1.25 kg	GHG 414 8182 R0008
0 - 30 / 45 A	Moving iron	1.25 kg	GHG 414 8182 R0009
0 - 40 / 60 A	Moving iron	1.25 kg	GHG 414 8182 R0010
0 - 50 / 75 A	Moving iron	1.25 kg	GHG 414 8182 R0011
0 - 60 / 90 A	Moving iron	1.25 kg	GHG 414 8182 R0012
0 - 75 / 112.5 A	Moving iron	1.25 kg	GHG 414 8182 R0013
0 - 100 / 150 A	Moving iron	1.25 kg	GHG 414 8182 R0014
0 - 100% / 150%	Moving iron	1.25 kg	GHG 414 8182 R0033

### Accessories

Type	Order No.
External fixing lugs (2 pcs)	GHG 610 1941 R0013

### Dimension drawing



<sup>1)</sup> Scope of delivery without fixing lugs