

4.3

GHG 413 Control Stations 16 A

Light alloy version for Zone 1, 2, 21 and 22

4

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.



Features

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



Measuring instrument AM72



Type 413 85



Type 413 84

Technical data

4

Ex-control stations Type 413 84 I Type 413 85

Marking accd. to 2014/34/EU	⚡ II 2 G Ex ed ibm 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, 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 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_e 250 V / I_e 6 A U_e 500 V / I_e 4 A DC-13: U_e 24 V / I_e 6 A U_e 110 V / I_e 0.8 A	Ex23 AC-15: U_e 230 V / I_e 6 A U_e 500 V / I_e 4 A DC-13: U_e 24 V / I_e 2 A U_e 230 V / I_e 0.5 A
Connecting terminals	2 x 4 mm ²	
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 2014/34/EU	⚡ 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. 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 ²	
Weight	1.25 kg	

¹⁾ Base enclosure can be rotated after wards (entry from top or down)

Other versions available on request

Ex-light metal control stations GHG 413 84



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	GHG 413 8400 R0001
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"	1.30 kg	GHG 413 8400 R0002
	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	GHG 413 8400 R0003
1——2 	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	GHG 413 8400 R0004



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.
X1—⊗—X2 	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”	2.10 kg	GHG 413 8500 R0001
X1—⊗—X2 	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“	2.10 kg	GHG 413 8500 R0002
X1—⊗—X2 	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“	2.20 kg	GHG 413 8500 R0003

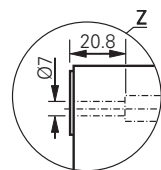
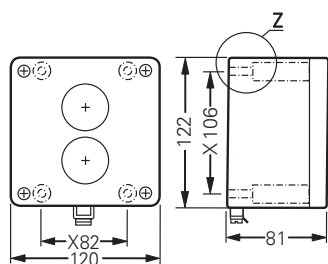


Measuring instrument AM72

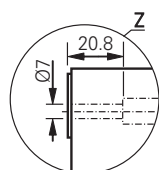
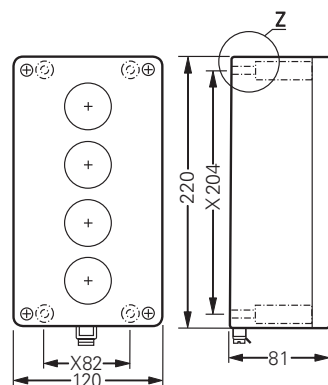
4 Ordering details Type 413 84 with measuring instrument AM72

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

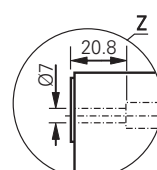
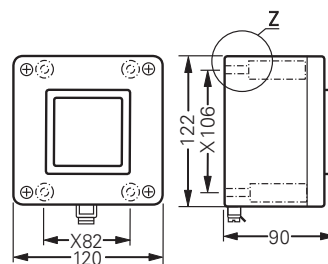
Dimension drawing



Type 413 84



Type 413 85



Type 413 84

X = fixing dimension

EX - CONTROL SWITCHES

**Light alloy
Version for Zone 1**

CEAG explosion-protected control switches are made of high-quality cast aluminium-silicon (AlSi). A robust plastic powder coating according to RAL 7031 protects the CEAG control switches against aggressive atmospheres and chemicals.

4 Cover screws as well as all internal and external metal parts are made of stainless steel.

These switches feature an easy-to-install and easy-to-connect design.

The cam switch version allows implementation of many variants, covering almost all applications in modern control engineering.

An optional locking facility allows to secure the switch against unauthorised or inadvertent actuation with a padlock.

Internationally approved.

- High mechanical, chemical and thermal resistance
- Impact-resistant plastic powder coating
- Snap-on switch holder





GHG 295



GHG 294

Technical data

Ex-control switch Typ 294 without and Typ 295 with measuring instrument

	with GHG 29 switch	with GHG 28 switch
Marking accd. to 94/9/EC	Ex II 2 G Ex ed ia IIC T5/T6 Ex II 2 D Ex tD A21 IP66 T80 °C	Ex II 2 G Ex ed ia IIC T5/T6 Ex 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 293 only)	max. 0 - 25 A direct / n / 1A	
Accuracy (type 293 only)	Class 2.5	
Circuit (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 ² or 1 x 1.0 - 6.0 mm ²	
Degree of protection accd. to EN 60529	IP66	
Cable glands/Gland plates/Enclosure drilling	1 x M25 (Ø 8 - 17 mm) ^{1) 2)}	
Dimensions (L x W x H)	GHG 294	170 x 130 x 129 mm
	GHG 295	260 x 160 x 129 mm
Weight	GHG 294	approx. 1.90 kg (1 level) approx. 2.05 kg (2 level)
	GHG 295	approx. 2.90 kg (1 level) approx. 3.05 kg (2 level)
Enclosure material	high quality cast aluminium-silicon (AlSi)	
Enclosure colour	grey RAL 7031	

¹⁾ Brass flange for metal entries available on request

²⁾ 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 294



GHG 295

4

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

A B1 B2 C D E E2 F ¹⁾
GHG 29_ _ _ _ _ _ _ _

Code	Component	Code
A	control switch	GHG 294
	control switch with measuring instrument	GHG 295

Code	Switch mechanism	Code
B1	spring – engaging – spring	4
	engaging – engaging – engaging	5
	engaging – engaging	6
	spring – engaging – engaging	7
	engaging – engaging – spring	8

Code	Contact	silver contact points	Code	silver contact points
B2		060		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	018
	I II	002	AUS AUTO EIN	019
	STOP START	003	AUS HAND AUTO	020
	HAND AUTO	004	ÖRTLICH AUS FERN	021
	SENKEN HEBEN	005	START NORMAL STOP	022
	REMOTE LOCAL	006	OFF 0 ON	023
	I 0 II	007	HAND OFF AUTO	024
	AUS BETRIEB EIN	008	0 IN START	025
	AUS 0 EIN	009	MAN AUTO	026
	AUF 0 AB	010	START STOP	027
	Entriegelt 0 Verriegelt	011	HEBEN SENKEN	028
	OUT OF HAND	012	OFF ON	029
	LOCAL REMOTE AUTO	013	AUS EIN	030
	STOP 0 START	014	HAND AUTO	031
	HAND 0 AUTO	015	ON OFF	032
	AUF AUS ZU	016	I II III	033
	HAND AUS AUTO	017		



GHG 295



GHG 294

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

4

Code	Padlocking facility	Code
D	none	0
	centre	1
	left	2
	right	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	Code
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 ²⁾	GM ²⁾
		Cable entry with plug	GV
F3	size	M12, M16, M20, M25, M32, M40	M1 Ø ..
F4	number	Ø21, Ø26	..
		Number of entries	..

¹⁾ The code will represent only a selected part of configuration..

²⁾ Only available with metal flange

Ex-control switch



GHG 294



GHG 295

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 „0“,

Measuring instrument AM72 for CT connection „n/1A“, Scale „0 - 50/75 A“,

Cable entry 1 x threaded entry M25 on bottom direct entry.

Code A	B1	B2	C	D	E1	E2	F1	F2	F3	F4
GHG 295 /	5 /	063 /	015 /	1 /	2 /	011 /	GEH /	BO /	M25 /	1

Ordering details

Switching system	Circuit	Code	Labels	Order No.
Control switch type 294 with silver contact points				
Version with locking facility in „0“-, or position „right (Code 3)“, cable gland 1 x M25 bottom.				
6		062	0 I	GHG 294 1000 R0001
6		065	0 I	GHG 294 1000 R0002
4		067	0 I	GHG 294 1000 R0003
8		067	0 I	GHG 294 1000 R0004
4		037	0 I	GHG 294 2000 R0002
8		037	0 I	GHG 294 2000 R0003
5		024	I 0 II	GHG 294 2000 R0004

Switching system	Circuit	Code	Labels	Order No.
Control switch with measuring instrument type 295 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.				
6		062	0 I	GHG 295 1000 R0001
6		065	0 I	GHG 295 1000 R0002

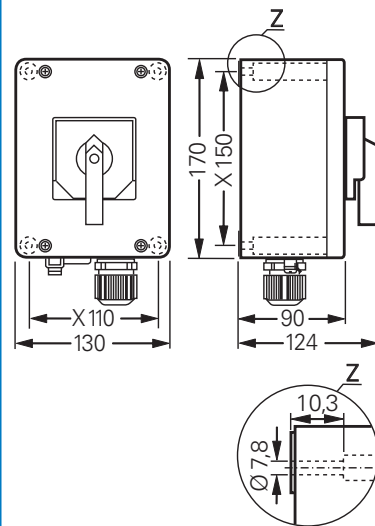


GHG 295

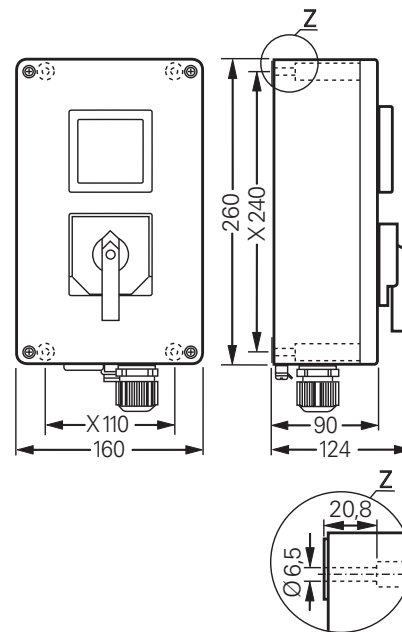


GHG 294

Dimension drawing



GHG 294



GHG 295

X = fixing dimensions