

# EX - MANUAL MOTOR STARTERS

Up to 25 A

Motors have to be protected against overloads, phase failures and overheating: CEAG's power circuit breaker and manual motor starter features phase-failure protection as well as thermal and electromagnetic tripping for reliable motor protection.

5 An optional under-voltage trip or auxiliary contact complements the safety package. The switch position is always indicated by the switch handle – practically excluding wrong operation.

A special safety feature offered by the manual motor starter: It can only be switched on on-site – where the drive is. An operating-current trip for remote switch-off is optional.

CEAG manual motor starters have such a precise tripping time that they are equally suited for the protection of Ex-e as well as Ex-d motors – just to put you on the safe side.

**Internationally approved.**

- Full AC-3 motor switching capacity
- Decisive cost savings with CEAG's mounting system
- Easily accessible connection terminals
- High degree of protection IP66
- Isolating properties according to DIN EN 60947-4-1
- Clear indication of switch position
- Phase-failure protection
- Integrated locking facility





GHG 635 (25 A)

## Technical data

### Ex-manual motor starter GHG 635 (25 A)

Marking accd. to 94/9/EC	Ⓔ II 2 G Ex ed IIC T5/T6 / Ⓔ II 2 D Ex tD A21 IP66 T80 °C	
EC-Type Examination Certificate	PTB 99 ATEX 1162	
IECEX Certificate of Conformity	IECEX BK1 08.0014	
Marking accd. to IECEx	Ex d IIC T6/ Ex tD A21 IP66 T80 °C	
Permissible ambient temperature		
at T6 Ie ≤ 16 A	-20 °C up to +40 °C	
at T5 Ie > 16 A; ≤ 25 A	-20 °C up to +55 °C	
Rated voltage	up to max. 690 V	
Rated current	max. 25 A	
Rated current aux. contact	max. 2 A	
Frequency	50/60 Hz	
Rated making/breaking capacity AC-3 accd. EN 60947-4-1	U <sub>e</sub> 690 V / I <sub>e</sub> 25 A	
Back-up fuse	see table	
Undervoltage trip	tripping at 15 % - 75 % U <sub>n</sub> can be switched on at U > 80 % U <sub>c</sub>	
Connecting terminals	main contact	10 mm <sup>2</sup>
	auxiliary-/Signal contact	2 x 0.75 - 4.0 mm <sup>2</sup>
Thermal tripping characteristic	T II	
Protection class	I	
Degree of protection accd. to EN 60529	IP66	
Cable glands/enclosure drilling		
0.1 - 6.3 A	2 x M25 (d = 8 - 17 mm) <sup>1)</sup>	
6.3 - 25 A	2 x M32 (d = 12 - 21 mm) <sup>1)</sup> , optional metal flange with thread	
Weight	2.5 kg	
Enclosure material	glass-fibre reinforced polyester	
Enclosure colour	black	
Padlocking facility	can be locked in OFF position with 3 commercially available padlocks (Ø max. 6 mm)	

<sup>1)</sup> Version with aux. contact or under voltage trip with additional cable gland M25

## Ex-manual motor starter



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### Ordering coding for special version

5

Description	Content	Undervoltage trip	Aux. contact	R...
GHG 635 1	A	B	C	R...

#### Coding

A	Content	1 = Standard version		
B	Undervoltage trip	0 = without undervoltage trip		
		1 = undervoltage trip	230 V	
		2 = undervoltage trip	400 V	
		3 = undervoltage trip	440 V	
		4 = undervoltage trip	500 V	
		5 = undervoltage trip	24 V	
		6 = undervoltage trip	48 V	
		7 = undervoltage trip	60 V	
		8 = undervoltage trip	110 V	
C	Auxiliary contact	9 = undervoltage trip	415 V	
		1 = without aux. contact		
		2 = with aux. contact 1 NO + 1 NC		
		3 = with aux. contact 2 NO		

### Short-circuit protection up to 100 kA and maximum backup fuse

Setting range	230 V AC		400 V AC		500 V AC		690 V AC		Temp.- Class	Order No. A B C R...
	Ics	gL, aM	Ics	gL, aM	Ics	gL, aM	Ics	gL, aM		
0.1 A ... 0.16 A									T6	GHG 635 1 1 0 1 R0101
0.16 A ... 0.25 A									T6	GHG 635 1 1 0 1 R0102
0.25 A ... 0.40 A			short-circuit						T6	GHG 635 1 1 0 1 R0103
0.40 A ... 0.63 A			no backup-fuse						T6	GHG 635 1 1 0 1 R0104
0.63 A ... 1.0 A			required						T6	GHG 635 1 1 0 1 R0105
1.0 A ... 1.6 A									T6	GHG 635 1 1 0 1 R0106
1.6 A ... 2.5 A						40 kA	25 A		T6	GHG 635 1 1 0 1 R0107
2.5 A ... 4.0 A					40 kA	35/40 A	10 kA	40 A	T6	GHG 635 1 1 0 1 R0108
4.0 A ... 6.3 A					30 kA	50 A	3 kA	40 A	T6	GHG 635 1 1 0 1 R0109
6.3 A ... 9.0 A					30 kA	80 A	3 kA	50 A	T6	GHG 635 1 1 0 1 R0110
9.0 A ... 12.5 A			50 kA	80 A	20 kA	80 A	3 kA	50 A	T6	GHG 635 1 1 0 1 R0111
12.5 A ... 16.0 A			50 kA	100 A	20 kA	100 A	3 kA	50 A	T6	GHG 635 1 1 0 1 R0112
16.0 A ... 20.0 A			50 kA	100 A	20 kA	100 A	2 kA	50 A	T5	GHG 635 1 1 0 1 R0113
20.0 A ... 25.0 A	50 kA	125 A	50 kA	125 A	20 kA	125 A	2 kA	50 A	T5	GHG 635 1 1 0 1 R0114

Customized version on request



GHG 635 (25 A)

**Accessories**

**Mounting plate for Ex-Main current switches 25 A**

Type	Application	Fixing method	Order No.
Size 3	Wall mounting	screwless mounting	<b>GHG 610 1953 R0118</b>
Size 3	Pipe clamp	screwless mounting	<b>GHG 610 1953 R0110</b>
Size 3	Trellis-work mounting	screwless mounting	<b>GHG 610 1953 R0118</b>

**Accessories for mounting plates**

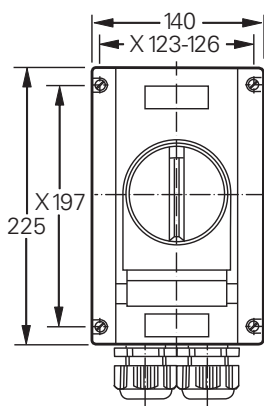
Type	OU	Order No.
Label holder with type label (blank) for mounting plate size 1, 2, 2A and 3	10	<b>GHG 610 1953 R0057</b>
Mounting set for pipes 1" (of 27 - 30 mm) for mounting plates with pipe fixing	10	<b>GHG 610 1953 R0020</b>

**Protective canopy for mounting plate**

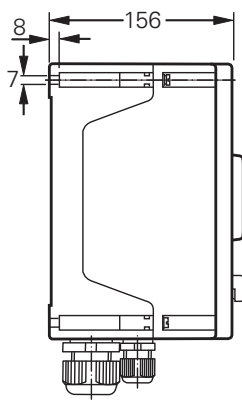
Type	Application	OU	Order No.
Size 3	for pipe mounting plate size 3 vertical	1	<b>GHG 610 1955 R0104</b>
Size 3A	for mounting plates wall/trellis fixing size 3 vertical	1	<b>GHG 610 1955 R0105</b>
Size 3B	for mounting plates pipe fixing size 3 horizontal	1	<b>GHG 610 1955 R0106</b>

Please pay attention that only order units (OU) according to the ordering details can be delivered.

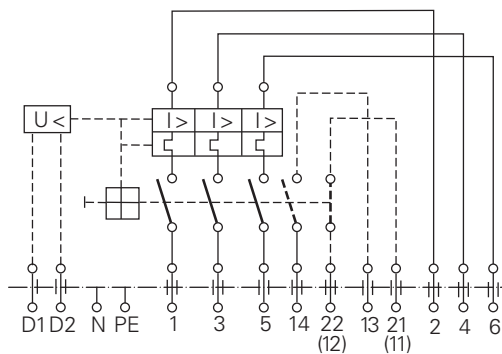
**Dimension drawing | Wiring diagram**



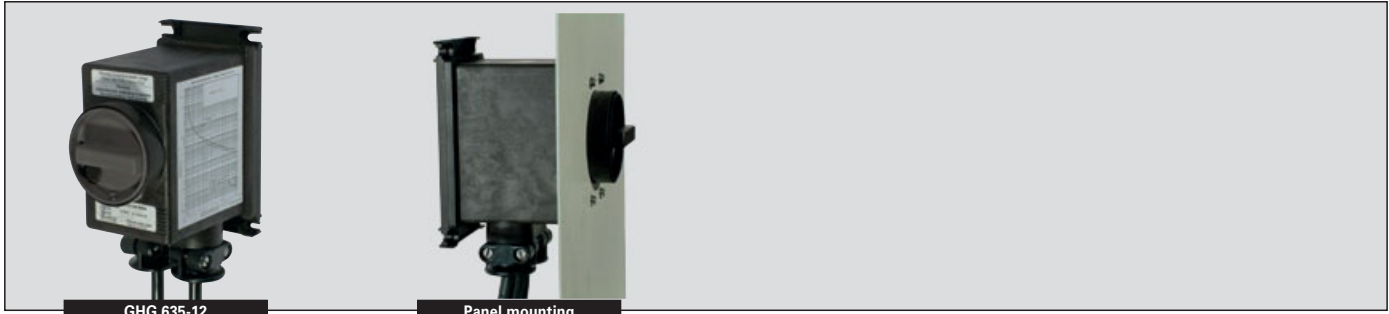
GHG 635



X = fixing dimensions



## Ex-manual motor starter



GHG 635-12

Panel mounting

### Technical data

#### Ex-manual motor starter GHG 635-12

Marking accd. to 94/9/EC	⊕ II 2 G Ex d IIC T6 / ⊕ II 2 D Ex tD A21 IP66 T80 °C
EC-Type Examination Certificate	PTB 05 ATEX 1020
Permissible ambient temperature	-20 °C up to +40 °C
Rated voltage	up to max. 690 V
Rated current	0.1 up to 16 A
Frequency	50/60 Hz
Rated making/breaking capacity AC-3 accd. EN 60947-3-4-1	U <sub>e</sub> 650 V / I <sub>e</sub> 16 A
Rated voltage undervoltage trip	400 V 50/60 Hz (Standard version) 440 V / 500 V / 24 V / 48 V / 60 V on request tripping at 35 % – 70 % U <sub>c</sub>
Undervoltage trip	can be switched on at U > 85 % U <sub>c</sub>
Back-up fuse	up to 400 V AC short circuit proof up to 50 kA up to 6.3 A; 30 kA up to 16 A
Thermal tripping characteristic	T II
Protection class	I
Degree of protection accd. to EN 60529	IP66
Connecting cable	H07RN-F (standard 3 m, other length on request)
Weight	1 kg (without cable)
Enclosure material	glass-fibre reinforced polyamide
Enclosure colour	black
Padlocking facility	can be locked in OFF position with 3 commercially available padlocks (Ø max. 6 mm)

### Short-circuit protection up to 100 kA and maximum backup fuse

Setting range	240 V AC		400 V AC		500 V AC		690 V AC		
	I <sub>cs</sub>	gL, aM	I <sub>cs</sub>	gL, aM	I <sub>cs</sub>	gL, aM	I <sub>cs</sub>	gL, aM	
0.1 A ... 0.16 A	short-circuit no backup-fuse required up to I <sub>cc</sub> = 50 A								
0.16 A ... 0.25 A									
0.25 A ... 0.40 A									
0.40 A ... 0.63 A									
0.63 A ... 1.0 A									
1.0 A ... 1.6 A									
1.6 A ... 2.5 A					40 kA	25 A			
2.5 A ... 4.0 A							10 kA	40 A	
4.0 A ... 6.3 A					40 kA	50 A	7 kA	40 A	
6.3 A ... 9.0 A					30 kA	80 A	5 kA	50 A	
9.0 A ... 12.5 A					27 kA	80 A	4.5 kA	50 A	
12.5 A ... 16.0 A					25 kA	100 A	4 kA	50 A	



Panel mounting

with mounting plate

GHG 635-12

**Ordering details**

Setting range	undervoltage trip	Cord length	Order No.
<b>Ex-manual motor starter GHG 635-12</b>			
0.1 - 0.16 A	no	2 x 3 m	GHG 635 1200 R0001
	400 V	2 x 3 m	GHG 635 1220 R0001
0.16 - 0.25 A	no	2 x 3 m	GHG 635 1200 R0002
	400 V	2 x 3 m	GHG 635 1220 R0002
0.25 - 0.40 A	no	2 x 3 m	GHG 635 1200 R0003
	400 V	2 x 3 m	GHG 635 1220 R0003
0.40 - 0.63 A	no	2 x 3 m	GHG 635 1200 R0004
	400 V	2 x 3 m	GHG 635 1220 R0004
0.63 - 1.0 A	no	2 x 3 m	GHG 635 1200 R0005
	400 V	2 x 3 m	GHG 635 1220 R0005
1.0 - 1.6 A	no	2 x 3 m	GHG 635 1200 R0006
	400 V	2 x 3 m	GHG 635 1220 R0006
1.6 - 2.5 A	no	2 x 3 m	GHG 635 1200 R0007
	400 V	2 x 3 m	GHG 635 1220 R0007
2.5 - 4.0 A	no	2 x 3 m	GHG 635 1200 R0008
	400 V	2 x 3 m	GHG 635 1220 R0008
4.0 - 6.3 A	no	2 x 3 m	GHG 635 1200 R0009
	400 V	2 x 3 m	GHG 635 1220 R0009
6.3 - 9 A	no	2 x 3 m	GHG 635 1200 R0010
	400 V	2 x 3 m	GHG 635 1220 R0010
9 - 12.5 A	no	2 x 3 m	GHG 635 1200 R0011
	400 V	2 x 3 m	GHG 635 1220 R0011
12.5 - 16 A	no	2 x 3 m	GHG 635 1200 R0012
	400 V	2 x 3 m	GHG 635 1220 R0012

## Ex-manual motor starter



GHG 635-12

with mounting plate

Panel mounting

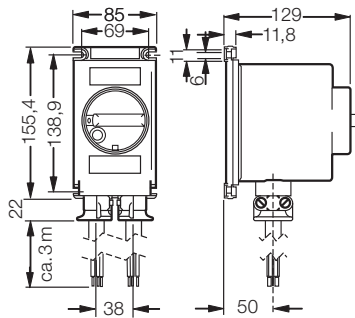
## Accessories

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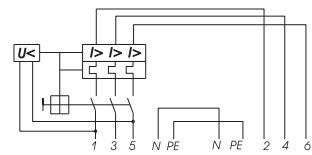
### Mounting plate Ex-manual motor starter GHG 635-12

Type	Application	Order No.
Mounting plate	Mounting plate for pipe mounting (1" or 2") and square profile 41 x 41 mm or U-profile 60 x 40 mm incl. snap-on fixing clips	<b>GHG 630 1926 R0001</b>
Screws size 1	5 self-tapping screws for panel mounting 1 - 2 mm wall thickness	<b>GHG 630 1925 R0001</b>
Screws size 2	5 self-tapping screws for panel mounting 2 - 3 mm wall thickness	<b>GHG 630 1925 R0002</b>

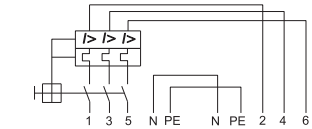
## Dimension drawing | Wiring diagram



GHG 635-12



with undervoltage trip



without undervoltage trip

