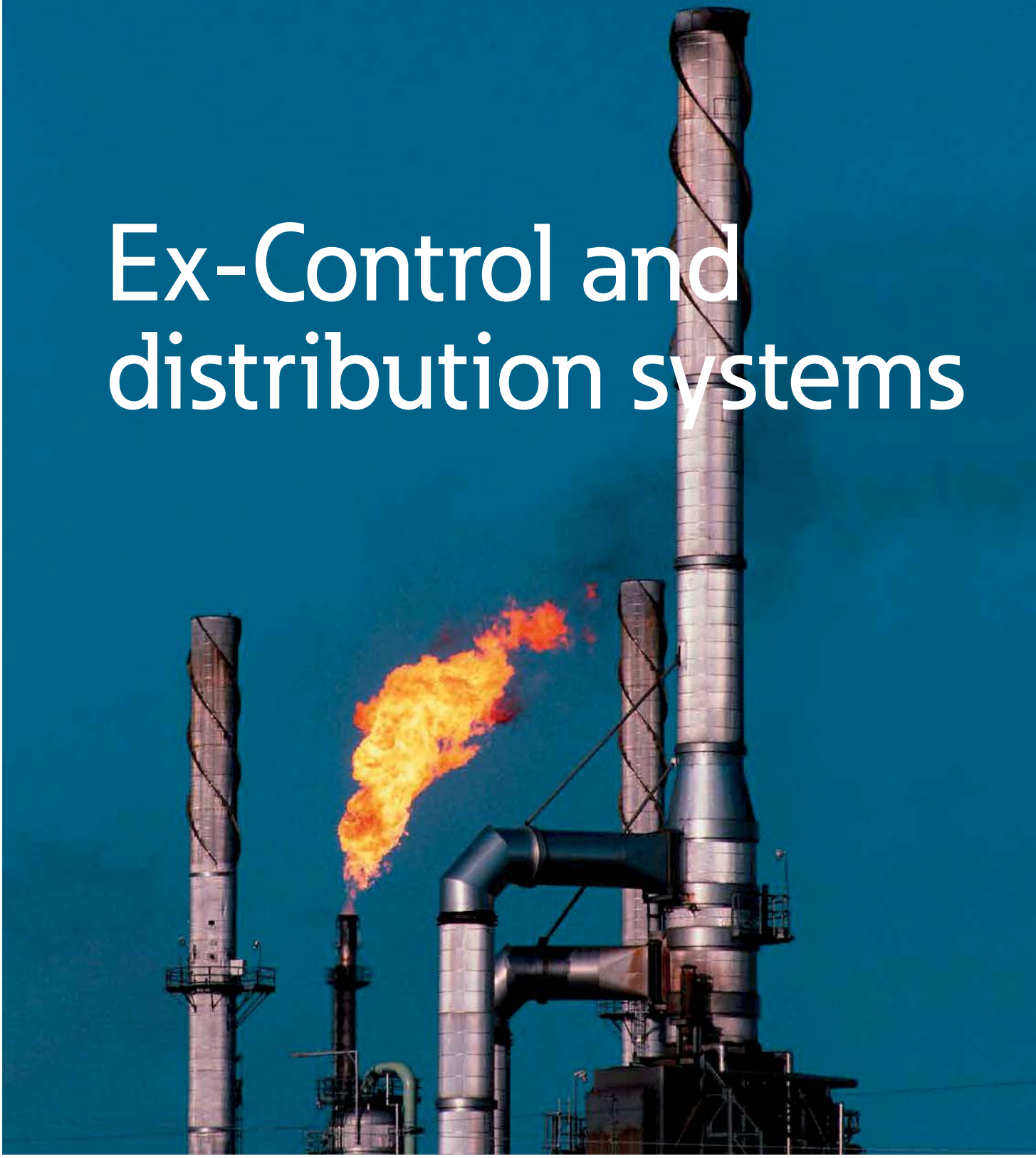
Ex-Control and distribution systems



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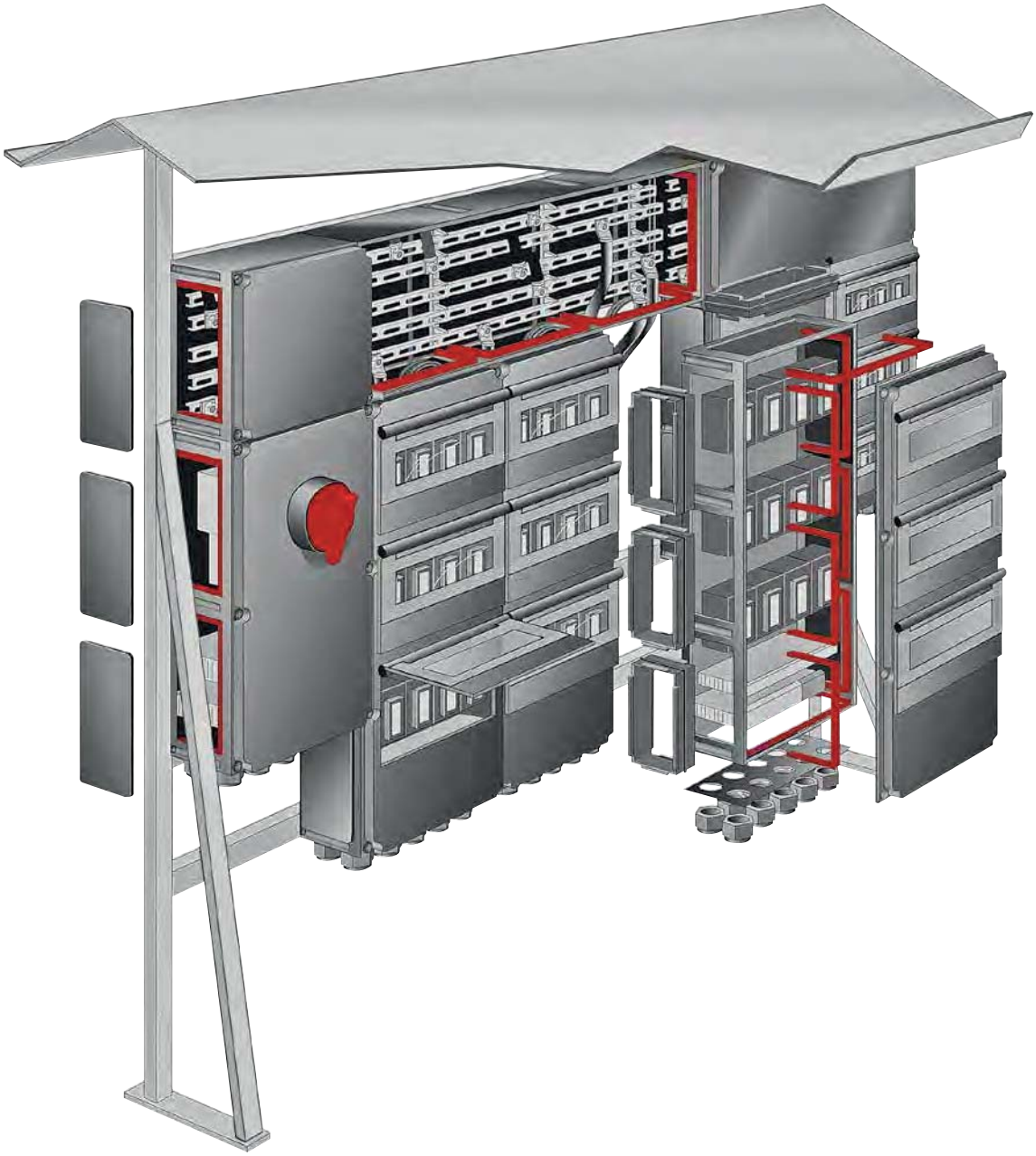


Distributions

If electrical apparatus is to be used in hazardous areas, i.e. potentially explosive atmospheres, where arcing or sparking can occur, it must be protected according to EN 60079 pp. by special constructional measures. CEAG explosion- protected products derives its high degree of safety through the combination of various types of protection. Thus, flameproof encapsulated devices (Ex-d), for instance, are also integrated in enclosures of the „Increased Safety“ type (Ex-e). As these components are of modular design, they can be combined according to customers‘ requirements. The modules are inserted by simple snap-on rail mounting. Electrical apparatus with metal enclosures may be used in type „flameproof enclosure“ (E-d) without any volume limit. Up to three high- capacity apparatus with non-metal enclosures may take up an enclosure volume of up to 2000 cm^3. However, the heat generated in the enclosure must be dissipated, so that the temperature on the external surface of the enclosure does not exceed the limit set by the respective temperature class.

Product range

The extensive CEAG product range offers everything you‘re looking for – just in time: no matter whether you need a flameproof encapsulated component, an encapsulation of the components in a flameproof enclosure – or a combination of both.

Material

Whatever material you care for, CEAG has it: Distributions are available in the most diverse materials, such as glass-fibre reinforced polyester, electro-polished stainless steel or die-cast light alloy in explosion group IIB and IIC or alternatively polyester powder-coated steel. The explosion-protected CEAG distributions are certified for hazardous areas of Zones 1 and 2. We also have the right solution for Zones 21 and 22 for you.

Snapy snap-on

The Cooper Crouse-Hinds GmbH gives you explosion protection in a snap – even with distributions. The enclosures and the main switches are of modular design in standardised sizes and can thus be combined as desired using the reliable flange snap-on mounting technique. Cable entries of all kinds can be mounted individually on the screwless plastic or brass flanges. And since these flanges can be inserted in a snap, cable entries can be easily mounted at any time. The same applies to other extensions or modifications. The snap-on technique gives you greater flexibility and cost-effectiveness for installations in hazardous areas.

Modular design

The modular distribution design makes modifications and extensions a snap: Remove the flange, insert the new enclosure, connect the apparatus, done! Moreover, you can do this as often as your system demands. The only limitation is space.

Rational component replacement

Components which can be quickly and reliably removed and inserted with the snap-on technique provide you with a rational method of replacing components for servicing as well as a simple and easy means of system extension.

Frameworks

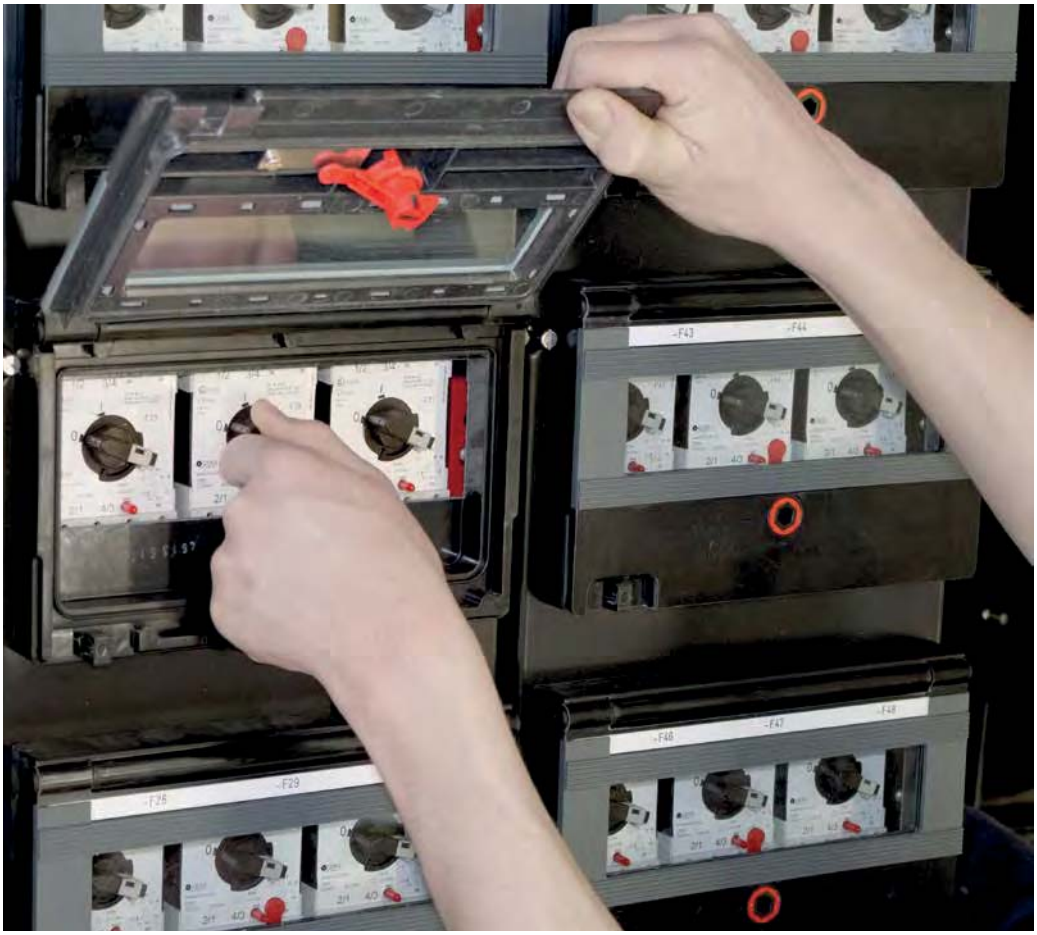
Modular CEAG enclosures of different series can be combined into large distribution systems on standardised wall-mounting or free-standing frameworks. The frameworks come in standardised sizes to accommodate the enclosure modules and can be extended as required. For outdoor installations, we recommend canopies to protect the distribution system from the sun and rain. Smaller distributions are mounted on flat or U-rails. All enclosures are made of galvanised steel or – as an option – stainless steel.

Bus bars

Inexpensive installations: Using the CEAG bus-bar system, a number of circuits can be simply and quickly connected for high cost-effectiveness. If required, individually encapsulated control and indicating units, such as pushbuttons, control switches or measuring instruments, can also be connected to the bus bars.

Worldwide approvals

We have years of experience with explosion- protection approvals worldwide and we carefully monitor the latest trends and developments. For our customers, this means not only better consultation, but future-proof products, such as ATEX- compatible systems and components. IECEx-Scheme conform products will be taken for granted.



Actuating flaps

Via actuating flaps, integrated in the enclosure cover, switches and relays can be actuated without opening the enclosure. The switch positions of the built-in components can be seen from the outside. As an added security measure, the actuating flaps can be locked.

Explosion groups IIB (+H2) and IIC

Eaton's Crouse-Hinds Business offers a complete product line of Ex-d distributions for gas explosion groups IIB and IIC. All common industrial switchgear that gives off arcs or sparks can be built into flameproof enclosures. The distributions for explosion group IIC are designed for easy installation via „Increased Safety" type connection boxes. Enclosures in explosion group IIB are interconnected via flameproof cable bushings.

Planning and customized solutions

Regardless of whether you have an idea in mind or functional descriptions and wiring diagrams on paper, talk to our experienced project specialists. Our highly-qualified engineers and master technicians will provide you with expert advice and an offer. If you wish, they will also compile the needed documentation for your project (including a parts list as well as dimension, wiring and terminal diagrams as necessary) – on paper or as data files. You can rely on our flexible production for the assembly of your system. All systems and their components are 100% inspected and tested. You're welcome to perform a final acceptance test – including a complete electrical function test – in our laboratory.

Ex-Distributions in Moulded Plastic Design

Modular design GHG 619

Safety for your protection

CEAG products provides explosion protection in a snap – and that also applies to distributions.

Electrical distributions for Ex-areas must be protected according to EN 60079 by constructional measures. Thus, the Eaton's Crouse-Hinds Business flameproof moulded-plastic distributions provide type Ex-e protection.

The enclosure and main-switch modules are available in the following materials: fibreglass reinforced polyester, electro-polished stainless steel and polyester powder-coated steel. Moulded plastic enclosures are flame-retardant according to UL 94 VO. All modules come in standardised sizes and can be interconnected as desired.

Cable entries of all kinds can be mounted individually on the screwless plastic or brass flanges. Since these flanges can be inserted in a snap, cable entries can be easily mounted at any time. The same applies to other extensions or modifications.

Bus-bar modular

A bus-bar system can be used to provide power to the individual components. The flameproof encapsulated modules (Ex-d) can be combined according to customers' specifications. Five enclosure sizes provide enough space for whatever modules are required: MCBs, RCDs, RCBOs, contactors, motor starters, over current trips, star-delta time relays or main switches. The modules are inserted in the distribution by simple snap-on rail mounting. Thus, modules can be replaced or added quickly and reliably. Lockable actuating flaps allow operation without opening the enclosure.

Features

- **Modular slip-on assembly**
- **High IP66 protection**
- **Snap-on components**
- **Retrofitting**

Technical data

	MCB distribution for lighting circuits I heating circuits I socket distribution
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib m [ia/ib] IIC T6/T5/T4 Ⓔx II 2 D Ex tD A21 IP66/IP65 T80 °C, T95 °C
EC-Type Examination Certificate	PTB 99 ATEX 1044
Permissible ambient temperature	–20 °C up to +40 °C –55 °C up to +55 °C (option)
IECEx Certificate of Conformity	IECEx BKI 06.0007
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] T4 ... T6 Ex tD A21 IP66 T80 °C
Rated voltage	up to 690 V (depends on components)
Rated current	up to 315 A (depends on components)
Protection class	I (II as an option)
Terminal cross section	up to 300 mm²
Degree of protection accd. to EN 60529	IP66
Weight	see ordering details
Enclosure material	glass-fibre reinforced polyester
Enclosure colour	black

Ordering details distribution for lighting circuits

Content	Type	MCB 2-pole	Connection terminals	Cable glands	Weight approx.	Order No.
40 A	1	8 x 16 A	10 mm²	1 x M40 cable gland 8 x M25 cable gland	20 kg	**EXKO 214 600 G 0000**
80 A	2	12 x 16 A	16 mm²	1 x M50 cable gland 12 x M25 cable gland	32 kg	**EXKO 214 600 G 0001**
80 A	3	24 x 16 A	16 mm²	1 x M50 cable gland 24 x M25 cable gland	56 kg	**EXKO 214 600 G 0002**

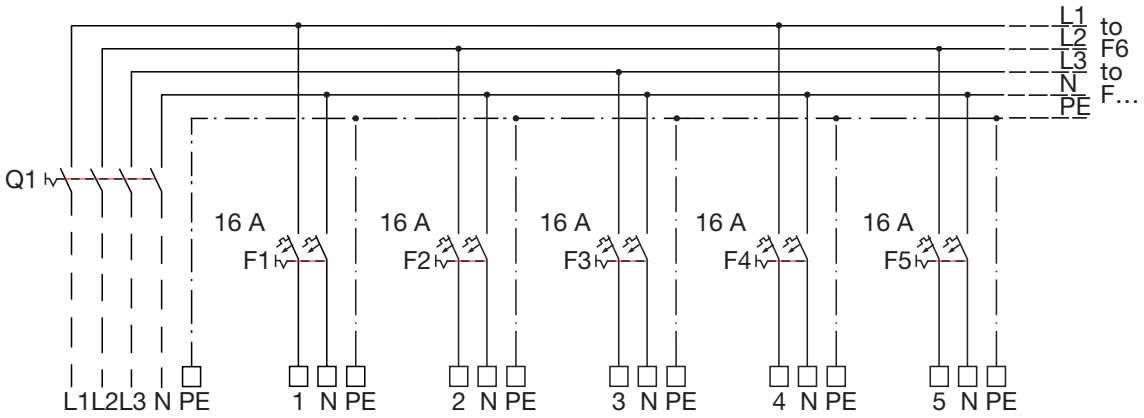
Ordering details distribution for heating circuits

Content	Type	RCBO 2-pole	Connection terminals	Cable glands	Weight approx.	Order No.
40 A	1	8 x 16 A, 30 mA	10 mm²	1 x M40 cable gland 8 x M25 cable gland	20 kg	**EXKO 214 600 G 0003**
80 A	2	12 x 16 A, 30 mA	16 mm²	1 x M50 cable gland 12 x M25 cable gland	32 kg	**EXKO 214 600 G 0004**
80 A	3	24 x 16 A, 30 mA	16 mm²	1 x M50 cable gland 24 x M25 cable gland	56 kg	**EXKO 214 600 G 0005**

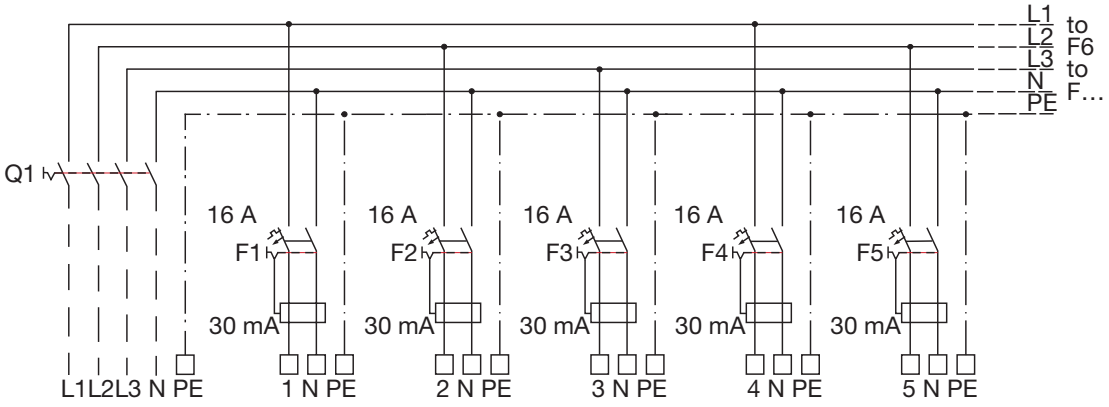
Ordering details distribution for sockets

Content MCB	Type	Socket outlets	Cable glands	Weight approx.	Order No.
2 x 16 A	1	2 x 16 A 3-pole	1 x M40 cable gland	10 kg	**EXKO 233 800 C 0001**
2 x 16 A 1 x 32 A	2	1 x 16 A 3-pole 1 x 16 A 5-pole 1 x 32 A 5-pole	1 x M40	20 kg	**EXKO 233 800 C 0002**
4 x 16 A	3	2 x 16 A 3-pole 2 x 16 A 5-pole	1 x M40	25 kg	**EXKO 233 800 C 0003**

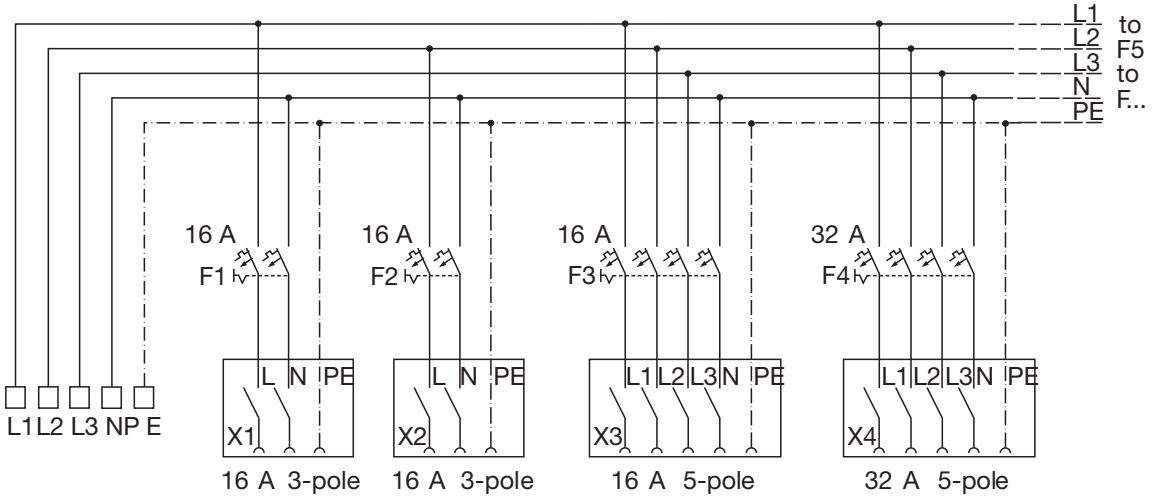
Wiring diagram lighting distribution I heating circuits I socket distribution



Lighting distribution

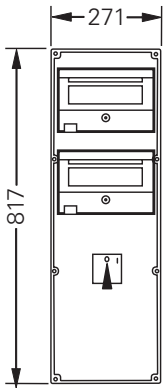


Heating circuits

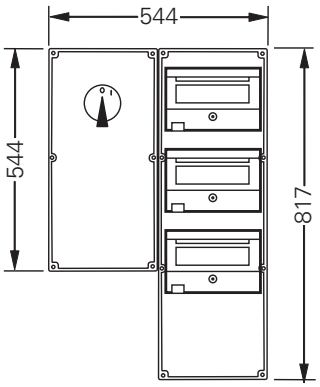


Socket distribution, must be protected by RCD

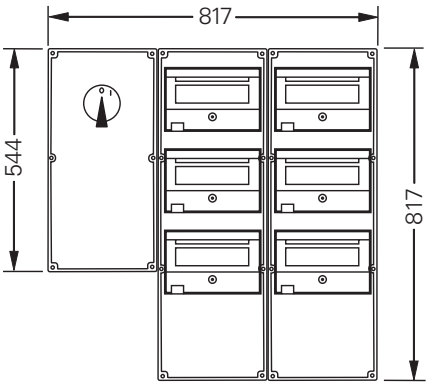
Dimension drawing lighting distribution I heating circuits I socket distribution



Type 1

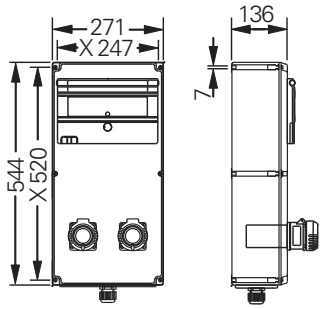


Type 2

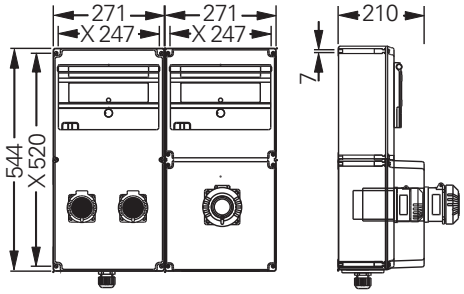


Type 3

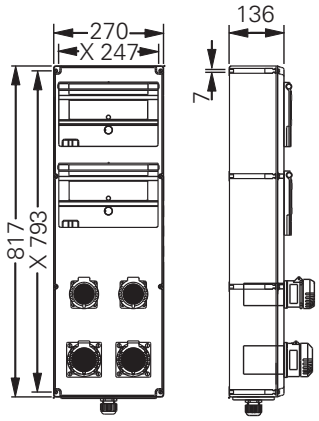
Lighting distribution/heating circuits



Type 1



Type 2



Type 3

Socket distribution

X = fixing dimension

6

Dimensions in mm

EXKO 231 402 L 1122

Technical data

		Twilight switch with Ex-e enclosure
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex Ex d e IIC T5 Gb
EC-Type Examination Certificate terminal box	GHG 721: GHG 74:	BVS 13 ATEX E 013 X BVS 12 ATEX E 118 X
EC-Type Examination Certificate twilight switch		PTB 06 ATEX 1017 X
Permissible ambient temperature		-40°C to +55°C
IECEx Certificate of Conformity terminal box	GHG 721: GHG 74:	IECEx BVS 13.0031X IECEx BVS 12.0071X
Marking accd. to IECEx		Ex d e IIC T5 Gb
Rated voltage		105 - 305 V 50/60 Hz
Rated current		max. 10 A
Protection class		I
Rated switching capacity		1800 VA
Light sensitivity		4 - 11 lux, 7 - 12 lux, 10 - 15 lux, adjustable
Degree of protection accd. to EN 60529		IP66
Enclosure material		glass-fibre reinforced polyester or stainless steel
Enclosure colour		black or polished

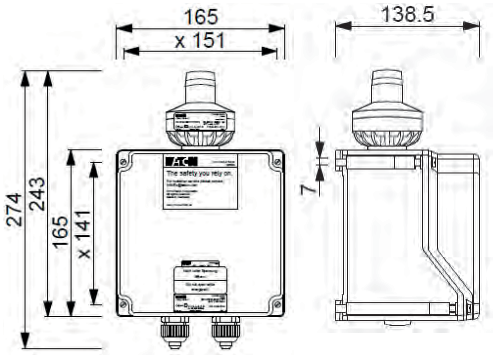
Ordering details twilight switch with Ex-e enclosure

Type of enclosure	Cable entry	Type of gland	Terminals	Order No.
GHG 721 00	direct	2 x M20 threaded plug	6 x UT2.5 + 4 x UT2.5 PE	**EXKO 231 402 L1121**
GHG 721 00	direct	2 x M20 threaded plug	3 x UT4 + 2 x UT4 PE	**EXKO 231 402 L1122**
GHG 721 00	direct	1 x M25 cable gland	3 x UT4 + 2 x UT4 PE	**EXKO 231 402 L1131**
GHG 721 00	internal earth plate	1 x M20 threaded plug	3 x UT4 + 2 x UT4 PE	**EXKO 231 402 L1212**
GHG 721 00	internal earth plate +PE	1 x M20 threaded plug	4 x WDU2,5 + 2 x WPE4 + 1 x WPE10	**EXKO 231 400 L3212**
GHG 744 21	flange	2 x M20 threaded plug + BD	3 x UT4 + 2 x UT4 PE	**EXKO 231 405 L1322**

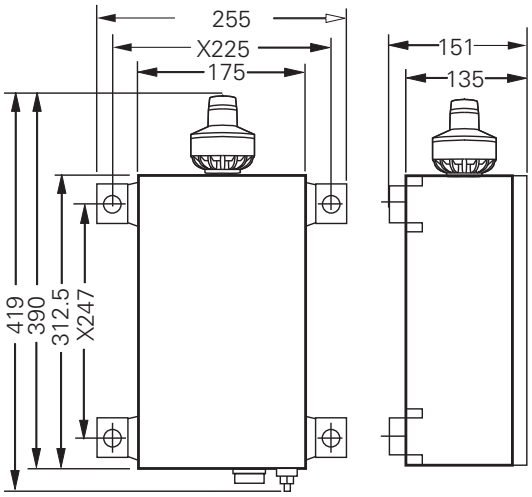
Other versions available on request

EXKO 231 402 L 1122

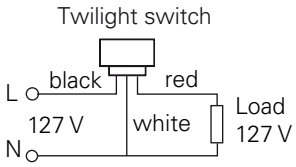
Dimension drawing I wiring diagram



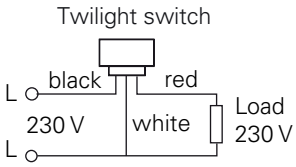
GHG 721 00



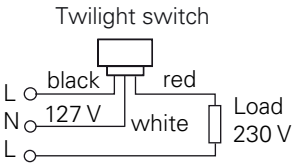
GHG 744 21



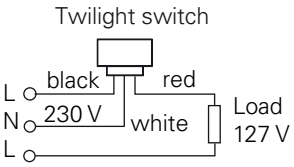
3 phase 127 V / 230 V



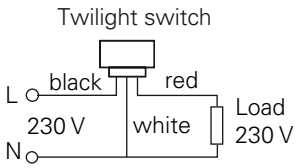
3 phase 127 V / 230 V



3 phase 127 V / 230 V



3 phase 127 V / 230 V



3 phase 230 V / 400 V

Dimensions in mm

EXKO 208900 A 0001

EXKO 208900 C 0004

Technical data

	Complete motor starter distribution
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib m [ia/ib]IIC T4 ... T6 Ⓔx II 2 D Ex tD A21 IP66/IP65 T80 °C/T95 °C
EC-Type Examination Certificate	PTB 99 ATEX 1044
Permissible ambient temperature	–20 °C up to +40 °C –55 °C up to +55 °C (option)
IECEx Certificate of Conformity	IECEx BKI 06.0007
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] T4 ... T6 Ex tD A21 IP66 T80 °C
Rated voltage	690 V
Rated power	up to 22 KW
Protection class	I
Terminal cross section	up to 240 mm²
Degree of protection accd. to EN 60529	IP66
Weight	see ordering details
Enclosure material	glass-fibre reinforced polyester
Enclosure colour	black

Ordering details complete motor starter distribution

Content Motor capacity to AC 3	Type	Connection terminals	Cable glands	Weight approx.	Order No.
Direct circuit					
4 KW	1	10 mm²	3 x M25 cable gland	6 kg	**EXKO 208 900 A 0001**
5.5 KW	2	16 mm²	3 x M25 cable gland	8 kg	**EXKO 208 900 A 0002**
7.5 KW	2	16 mm²	3 x M25 cable gland	8 kg	**EXKO 208 900 A 0003**
Reversing circuit					
4 KW	2	10 mm²	3 x M25 cable gland	10 kg	**EXKO 208 900 B 0001**
5.5 KW	2	16 mm²	3 x M25 cable gland	10 kg	**EXKO 208 900 B 0002**
7.5 KW	2	16 mm²	3 x M25 cable gland	10 kg	**EXKO 208 900 B 0003**
Star-delta starter					
4 KW	2	10 mm²	4 x M25 cable gland	12 kg	**EXKO 208 900 C 0001**
5.5 KW	2	16 mm²	4 x M25 cable gland	12 kg	**EXKO 208 900 C 0002**
7.5 KW	2	16 mm²	4 x M25 cable gland	12 kg	**EXKO 208 900 C 0003**
11 KW	3	16 mm²	1 x M25 cable gland 3 x M25 cable gland	18 kg	**EXKO 208 900 C 0004**
15 KW	3	16 mm²	2 x M32 cable gland 1 x M40 cable gland	18 kg	**EXKO 208 900 C 0005**

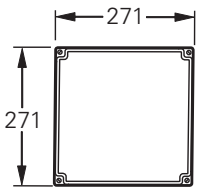
The motor starters are completely wired for connection by customer.

Starters for different motor power available on request. For more than 22 kW please see Ex-d light alloy motor starters on page 2.6.92, 2.6.107 or 2.6.116

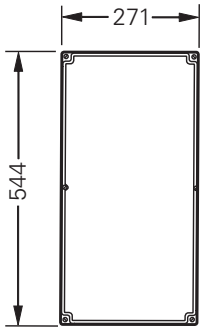
EXKO 208900 C 0004

EXKO 208900 A 0001

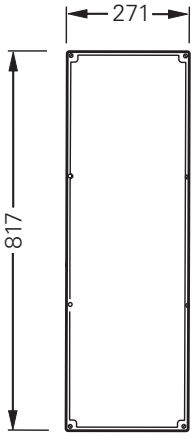
Dimension drawing I wiring diagram



Type 1

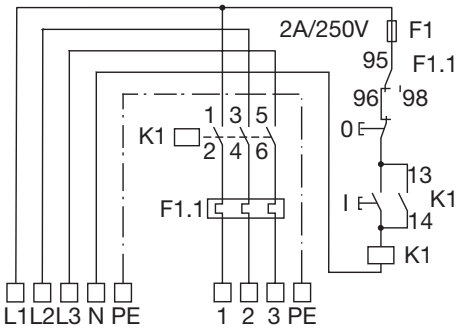


Type 2

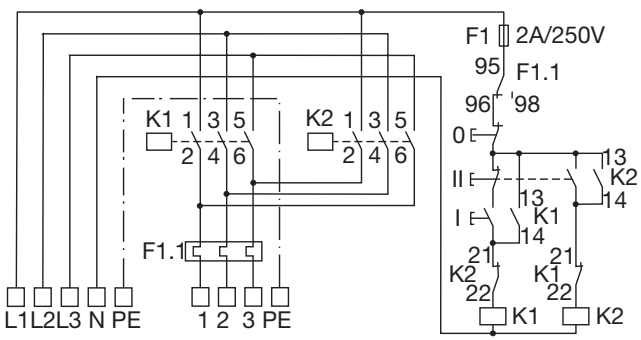


Type 3

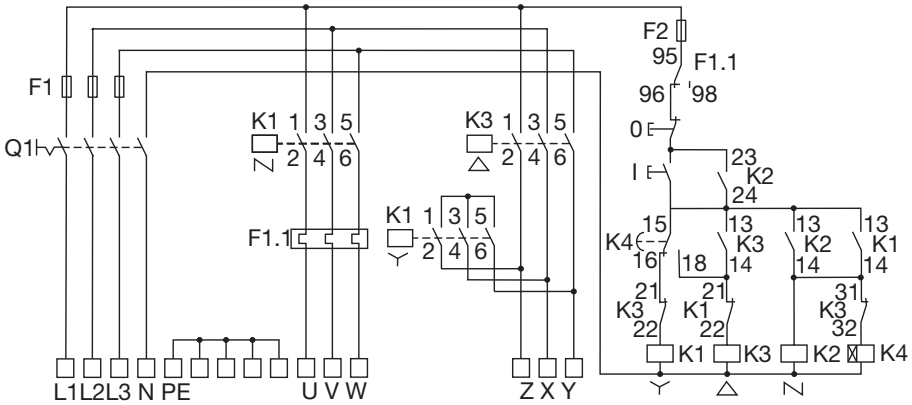
Direct circuit



Reversing circuit



Star-delta starter



Dimensions in mm

Ex-Distributions in Metal Design

Modular design made of stainless steel or powder coated sheet metal GHG 619

Robust enclosure for harsh ambient conditions

Distributions made of stainless steel or powder coated sheet steel for protection against aggressive environments are used for lighting, heating, motor and socket circuits in potentially explosive atmospheres.

The distributions contain components with flameproof enclosures. These flameproof components, such as MCBs, fuses etc., provide thermal and magnetic protection and can be snapped on individually on the DIN rails.

The distribution systems are available in stainless steel enclosures of various sizes. On standardised wall-mounting or free-standing frameworks, the enclosures can be combined into large distribution systems. The frameworks come in standardised sizes to accommodate the enclosures and can be extended as required. MCBs, RCDs and other components can be operated via lockable actuating flaps, integrated in the enclosure cover, without opening the enclosure. CEAG fuse and MCB distributions provide cost-effective solutions.
They fulfil all the requirements specified by the chemical, petrochemical and offshore industries.

Features

- **Combinable for larger distributions**
- **Actuating flaps for easy operation**
- **Snap-on components**
- **Protection type IP66**
- **Easy to retrofit**

EXKO 223 100

Technical data

	MCB distribution for lighting circuits I heating circuits I socket distribution
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib m [ia/ib] IIC T6/T5/T4 Ⓔx II 2 D Ex tD A21 IP66/IP65 T80 °C, T95 °C
EC-Type Examination Certificate	PTB 99 ATEX 1044
Permissible ambient temperature	–20 °C up to +40 °C –55 °C up to +55 °C (option)
IECEx Certificate of Conformity	IECEx BKI 06.0007
Marking accd. to IECEx	Ex de ia/ib m [ia/ib] T4 ... T6 Ex tD A21 IP66 T80 °C
Rated voltage	up to 690 V (depends on components)
Rated current	up to 315 A (depends on components)
Protection class	I
Terminal cross section	up to 300 mm²
Degree of protection accd. to EN 60529	IP66
Enclosure material	Stainless steel AISI 316 L / powder coated sheet steel
Enclosure colour	electro-polished

Ordering details distribution for lighting circuits (stainless steel)

Content	Type	MCB 2-pole	Connection terminals	Cable glands	Weight approx.	Order No.
40 A	1	8 x 16 A	10 mm²	1 x M40 cable gland 8 x M25 cable gland	22 kg	**EXKO 223 100 Q 0000**
80 A	2	12 x 16 A	16 mm²	1 x M50 cable gland 12 x M25 cable gland	34 kg	**EXKO 223 100 Q 0001**
80 A	3	24 x 16 A	16 mm²	1 x M50 cable gland 24 x M25 cable gland	58 kg	**EXKO 223 100 Q 0002**

Ordering details distribution for heating circuits (stainless steel)

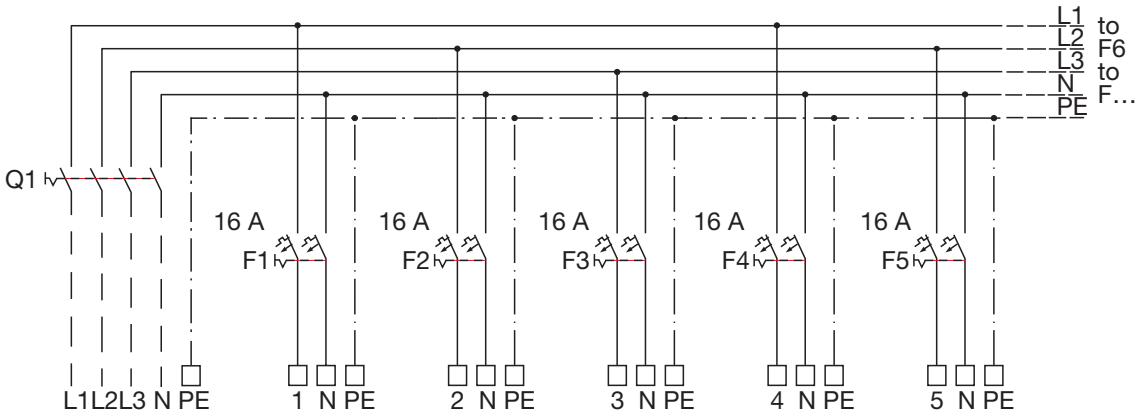
Content	Type	RCBO 2-pole	Connection terminals	Cable glands	Weight approx.	Order No.
40 A	1	8 x 16 A, 30 mA	10 mm²	1 x M40 cable gland 8 x M25 cable gland	22 kg	**EXKO 223 100 Q 0003**
80 A	2	12 x 16 A, 30 mA	16 mm²	1 x M50 cable gland 12 x M25 cable gland	34 kg	**EXKO 223 100 Q 0004**
80 A	3	24 x 16 A, 30 mA	16 mm²	1 x M50 cable gland 24 x M25 cable gland	58 kg	**EXKO 223 100 Q 0005**

Ordering details distribution for sockets (stainless steel)

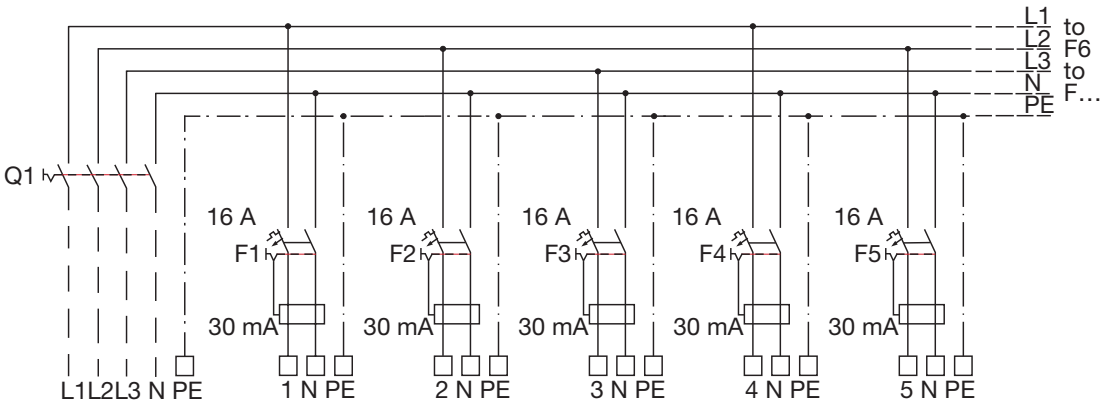
Content MCB	Type	Socket outlets	Cable glands	Weight approx.	Order No.
2 x 16 A	1	2 x 16 A 3-pole	1 x M40 cable gland	12 kg	**EXKO 223 800 C 0004**
2 x 16 A 1 x 32 A	2	1 x 16 A 3-pole 1 x 16 A 5-pole 1 x 32 A 5-pole	1 x M40	22 kg	**EXKO 223 800 C 0005**
4 x 16 A	3	2 x 16 A 3-pole 2 x 16 A 5-pole	1 x M40	27 kg	**EXKO 223 800 C 0006**

EXKO 223 100

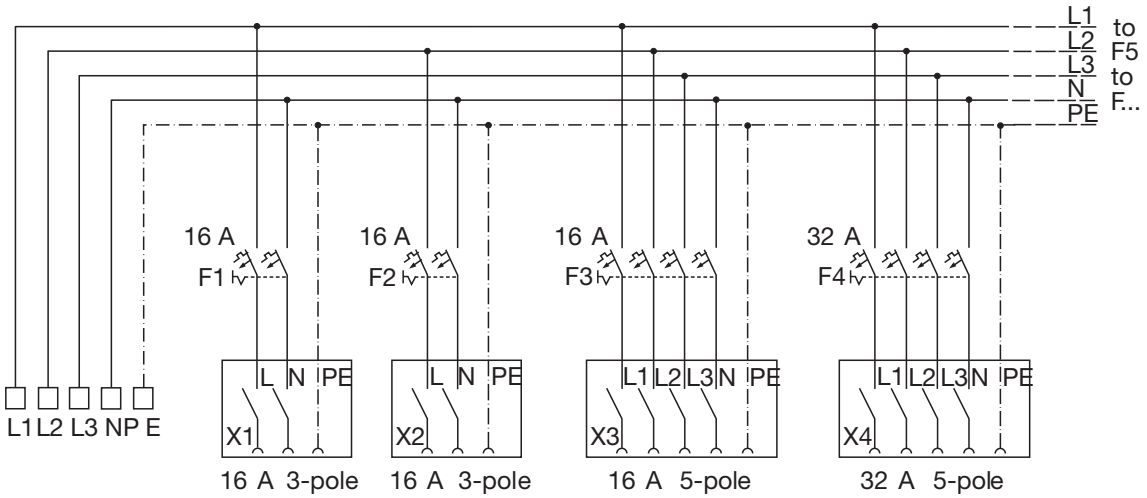
Wiring diagram lighting distribution I heating circuits I socket distribution



Lighting distribution



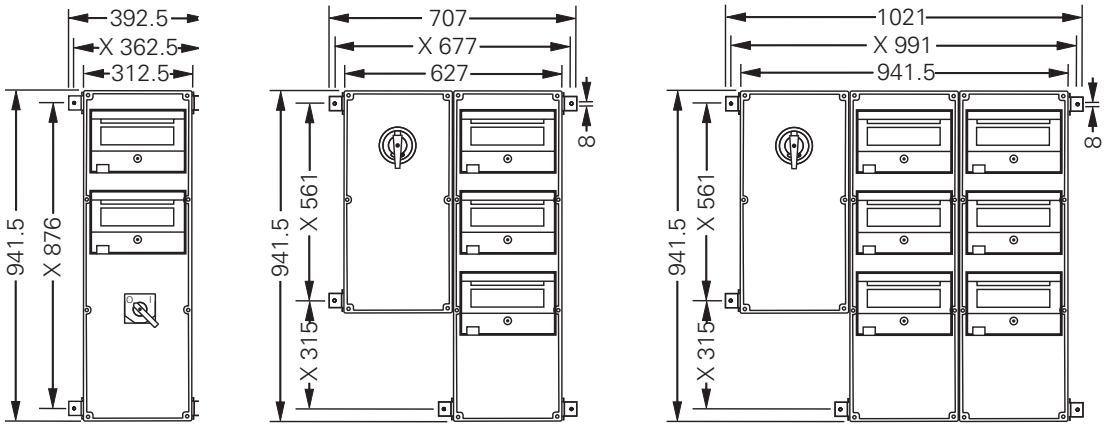
Heating circuits



Socket distribution, must be protected by RCD

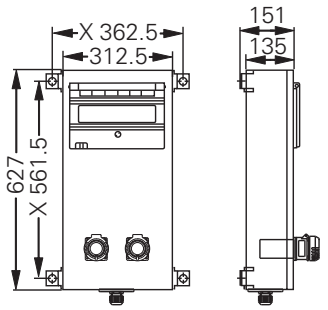
EXKO 223 100

Dimension drawing lighting distribution I heating circuits I socket distribution

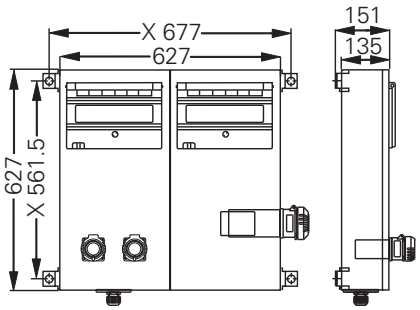


Type 1 **Type 2** **Type 3**

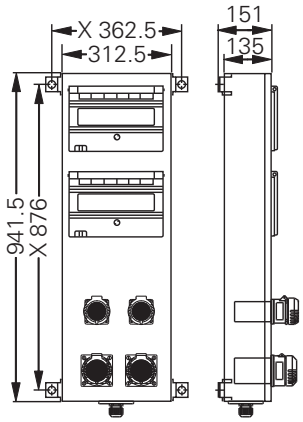
Lighting distribution/heating circuits **X = fixing dimension**



Type 1



Type 2



Type 3

Socket distribution **X = fixing dimension**

Dimensions in mm

Ex-d Built-in Components GHG 62

Flameproof encapsulation up to 63 A

Safety easy to install

If arcing or sparking electrical apparatus are used in hazardous areas, i.e. potentially explosive atmospheres, they must be protected according to EN 60079 pp by special constructional measures.

The Eaton's Crouse-Hinds explosion protected apparatus, such as the modules in Ex-e distributions, derives its high degree of safety through the combination of various types of protection. Thus, flameproof encapsulated components (Ex-d), for instance, are also integrated in enclosures of the type "Increased Safety" (Ex-e).

As these components are of modular design, they can be combined according to customers' requirements. Four enclosure sizes provide enough space for whatever modules are required: MCBs, RCDs, RCBOs or motor starters. Protected by a transparent flap, all modules can be conveniently monitored and operated.

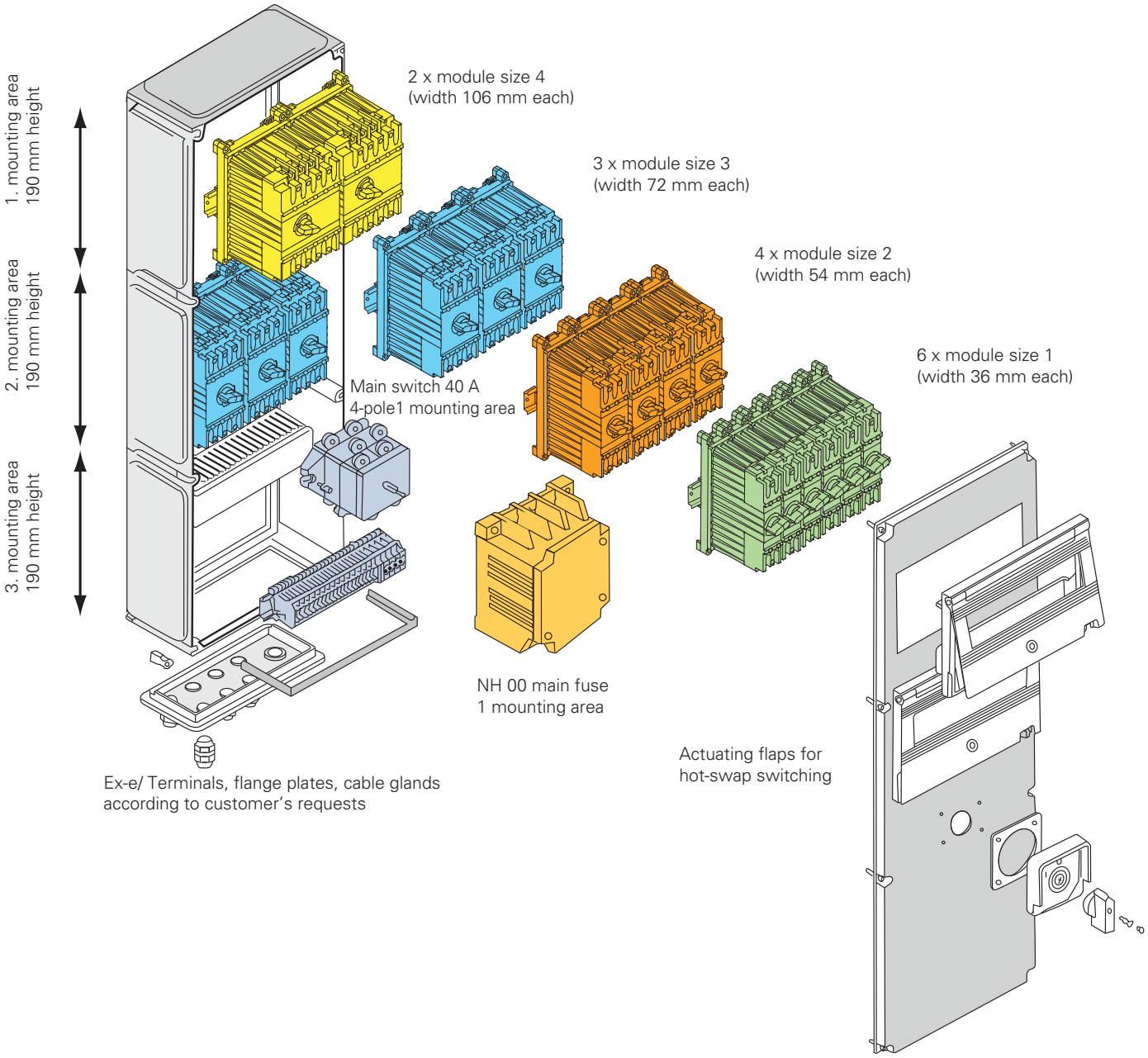
The modules are inserted in the distribution by simple snap-on rail mounting. Thus, modules can be replaced or added quickly and reliably. That makes servicing and extension work simpler and faster – and thus more cost-efficient.

We've also provided for your personal safety: MCBs, RCDs, RCBOs and power circuit breakers can be equipped with a lock in the OFF position. That protects you during your work on the system against inadvertent switching on

– better safe than sorry!

Features

- **Modular design**
- **Easy to maintain**
- **Wde range of built-in components**
- **Rated current up to 63 A**
- **Wide ambient temperature range -45°C up to +55 °C**



6

Individual modular distributions

Eaton's Crouse-Hinds Series explosion protected Ex-e moulded-plastic distributions can be individually assembled and equipped with various components. Enclosure modules of size 1, 2, 3 and 4 are available for combining flameproof encapsulated modules (Ex-d) according to customers' specifications.

Four enclosure sizes provide enough space for whatever modules are required: MCBs, RCDs, RCBOs or motor starters. Different module sizes can be placed side by side in one mounting space. The modules are inserted in the distribution by simple snap-on rail mounting. Thus, modules can be replaced or added quickly and reliably. Lockable actuating flaps allow easy operation without opening the enclosure.

For an easy selection of certified components two temperature information are provided:

1. Operating temperature range
   This defines the max. permitted temperature range of component in the installed state. This has to be considered when configuring
2. Ambient temperature range
   These temperature range defines the expected ambient temperature range for a fully planned equipment and is based on the experiences of configured devices at normal installation conditions. However, it must be observed in any case, the conditions of the type examination certificate. These temperatures are purely based on explosion protection. Mechanical and electrical function based on the installation situation (e.g. self-heating) have to be considered. **For binding function ambient temperatures please refer to the product manual.**

size 4

size 3

size 2

size 1

Technical data

		MCB 0.5 A up to 63 A			
Marking accd. to 2014/34/EU		⟨Ex⟩ II 2 G Ex de IIB/IIC Gb or Ex de [ia] ib IIB/IIC Gb			
EC-Type Examination Certificate		BVS 09 ATEX E 145 U			
Marking accd. to IECEx		Ex de IIB/IIC Gb			
IECEx Certificate of Conformity		IECEx BVS 10.0002 U			
Application temperature[1)]		-20 °C up to +55 °C (IIC) -45 °C up to +55 °C (IIB) (size 1 and 2)			
Operating temperature range		-20 °C up to +110 °C (IIC) -45 °C up to +110 °C (IIB) (size 1 and 2)			
Rated voltage	main contact aux. contact	max. 400 V AC (+ 10 %) max. 250 V AC			
Rated current	main contact aux. contact	0.5 A to 63 A max. 5 A			
Rated switching capacity 2/3 phase 230 V AC (133/230 V AC) kA/cos φ 400 V AC (230/400 V AC) kA/cos φ		10 kA 10/0.5 10/0.5			
Back-up fuse depend on rated current		up to 100 A			
Connecting terminals	main contact size 1 - 4	1 x 1.5 mm² - 1 x 16 mm² fine wire with wire end sleeve/single wire 2 x 1.5 mm² - 2 x 6 mm² fine wire with wire end sleeve/single wire up to 2 x 16 mm² with cable lug GHG9059025R0010 up to 1 x 25 mm² or 2 x 25 mm² with cable lug GHG5101916R0001			
	auxiliary-/signal contact	1.5 mm² up to 2.5 mm² fine wire with wire end sleeve/single wire			
Module size		1	2	3	4
No of main contacts		1	2	3	4
No. of auxillary contacts		2	3	4	5
Weight		0.6 kg	0.9 kg	1.2 kg	1.6 kg
Enclosure material		Polyamide			
Padlocking facility		in OFF position with a commercially available padlock			

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the internal components have to be taken into account.
See also page 2.6.19.


size 1


size 2


size 3


size 4

Order Code miniature circuit breaker (MCB): 0.5 up to 63 A

GHG 622 XXXX R0YYY

1. Contacts

Contact arrangement						Circuit	No of main contacts		No of main contacts		No of main contacts		No of main contacts	
Additional components	Main contact	Aux. contact	Signal contact	Overload release	Undervoltage release		1 pole (XXXX)	module size	2 pole (XXXX)	module size	3 pole (XXXX)	module size	4 pole (XXXX)	module size
none	x	---	---	---	---	---	**1101**	1	**2101**	2	**3101**	3	**4101**	4
one additional component	x	1 NO	---	---	---	1	**1102**	1	**2102**	2	**3102**	3		
	x	1 NC	---	---	---	2	**1103**	1	**2103**	2	**3103**	3		
	x	1 C/O	---	---	---	3	**2104**	2					**4102**	4
	x	2 NO	---	---	---	4					**4118**	4		
	x	1 NO + 1 C/O	---	---	---	5			**3112**	3				
	x	1 NO + 1 C/O	---	---	---						**4114**	4		
	x	---	1 C/O	---	---	8	**2105**	2	**3113**	3	**4109**	4	**4103**	4
	x	---	---	12-60 V	---	9	**2106**	2	**3105**	3	**4107**	4		
	x	---	---	110 - 415 V	---	9	**2107**	2	**3106**	3	**4108**	4		
	x	---	---	---	24 V AC	10			**3107**	3	**4104**	4		
	x	---	---	---	110 V AC	10			**3108**	3	**4105**	4		
	x	---	---	---	230 V AC	10			**3109**	3	**4106**	4		
two additional components	x	1 NO	1 C/O	---	---	1+8							**4113**	4
	x	1 C/O	1 C/O	---	---	3+8			**3104**	3	**4110**	4		
	x	1 NO	---	12-60 V	---	1+9			**3110**	3				
	x	1 C/O	---	12-60 V	---	2+9			**3111**	3				
	x	---	1 C/O	12-60 V	---	8+9			**4111**	4				
	x	---	1 C/O	110 - 415 V	---	8+9			**4112**	4				
	x	---	1 C/O	---	24 V AC	8+10			**4115**	4				
	x	---	1 C/O	---	110 V AC	8+10			**4116**	4				
	x	---	1 C/O	---	230 V AC	8+10			**4117**	4				
three additional components	x	1 NC	1 C/O	12-60 V	---	1+8+9			**4119**	4				
	x	1 NC	1 C/O	110 - 415 V	---	1+8+9			**4120**	4				
	x	1 NO + 1 NC	1 C/O	---	24 V AC	1+8+10			**4121**	4				
	x	1 NO + 1 NC	1 C/O	---	110 V AC	1+8+10			**4122**	4				
	x	1 NO + 1 NC	1 C/O	---	230 V AC	1+8+10			**4123**	4				
	x	1 NO + 1 NC	1 C/O	---	24 V AC	1+8+10			**4124**	4				
	x	1 NO + 1 NC	---	---	230 V AC	1+8+10					**4125**	4		

Example: 2-pole MCB with two additional contacts (1 x aux. contact 1NO + 1 overload release 12 - 60 V)
XXXX=3110 (module size 3) --> GHG 622 3110 R0YYY

GHG 622 XXXX R0YYY

2. Tripping current

Built-in components MCBs: order code MCB 0.5 up to 63 A - Icn = 6 kA

Tripping Current	Characteristic K			Characteristic Z			Characteristic B			Characteristic C		
	Max. Back-up fuse gG	Powerloss per pole	YYY	Max. back-up fuse gG	Powerloss per pole	YYY	Max. back-up fuse gG	Powerloss per pole	YYY	Max. back-up fuse gG	Powerloss per pole	YYY
0.5 A	not necessary	1.6 W	513	not necessary	2.5 W	581				not necessary	1.4 W	621
1 A		1.6 W	515		2.3 W	582					1.4 W	622
1.6 A		1.8 W	516		2.8 W	583					1.6 W	623
2 A		1.9 W	517		2.5 W	584					1.8 W	624
3 A	20 A	1.5 W	518	20 A	1.8 W	585				20 A	1.3 W	625
4 A	25 A	2.0 W	519	20 A	2.4 W	586				20 A	1.8 W	626
6 A	63 A	1.9 W	520	35 A	3.7 W	587	63 A	2.0 W	601	40 A	2.0 W	627
8 A	63 A	2.5 W	521	40 A	3.45 W	588				63 A	1.0 W	628
10 A	63 A	1.26 W	522	63 A	1.7 W	589	100 A	1.3 W	602	100 A	1.3 W	629
13 A	63 A	1.26 W	523				100 A	2.3 W	603	100 A	2.3 W	630
16 A	80 A	2.0 W	524	63 A	2.8 W	590	100 A	1.8 W	604	100 A	1.8 W	631
20 A	80 A	2.7 W	525	80 A	2.4 W	591	100 A	2.5 W	605	100 A	2.5 W	632
25 A	100 A	2.9 W	526	80 A	2.6 W	592	100 A	3.2 W	606	100 A	3.2 W	633
32 A	100 A	3.6 W	527	100 A	2.9 W	593	100 A	3.7 W	607	100 A	3.7 W	634
40 A	125 A	4.5 W	528	100 A	4.1 W	594	125 A	4.8 W	608	125 A	4.8 W	635
50 A	160 A	2.9 W	529	125 A	4.4 W	595	160 A	3.25 W	609	160 A	3.25 W	636
63 A	160 A	5.2 W	530	125 A	5.2 W	596	160 A	4.8 W	610	160 A	4.8W	637

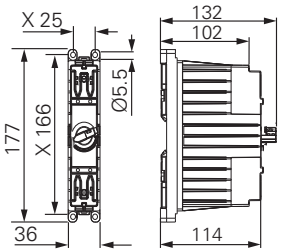
Built-in components MCBs: order code MCB 0.5 up to 63 - Icn = 10 kA

Tripping current	Characteristic K			Characteristic Z			Characteristic B			Characteristic C		
	Max. back-up fuse gG	Powerloss per pole	YYY	Max. back-up fuse gG	Powerloss per pole	YYY	Max. back-up fuse gG	Powerloss per pole	YYY	Max. back-up fuse gG	Powerloss per pole	YYY
0.5 A	not necessary	1.6 W	013							not necessary	1.4 W	121
1 A		1.6 W	015								1.4 W	122
1.6 A		1.8 W	016								1.6 W	123
2 A		1.9 W	017								1.8 W	124
3 A	20 A	1.5 W	018							20 A	1.3 W	125
4 A	25 A	2.0 W	019							20 A	1.8 W	126
6 A	63 A	1.9 W	020				63 A	2.0 W	101	40 A	2.0 W	127
8 A	63 A	2.5 W	021							63 A	1.0 W	128
10 A	63 A	1.3 W	022				100 A	1.3 W	102	100 A	1.3 W	129
13 A	63 A	1.3 W	023				100 A	2.3 W	103	100 A	2.3 W	130
16 A	80 A	2.0 W	024				100 A	1.8 W	104	100 A	1.8 W	131
20 A	80 A	2.7 W	025				100 A	2.5 W	105	100 A	2.5 W	132
25 A	100 A	2.9 W	026				100 A	3.2 W	106	100 A	3.2 W	133
32 A	100 A	3.6 W	027				100 A	3.7 W	107	100 A	3.7 W	134
40 A	125 A	4.5 W	028				125 A	4.8 W	108	125 A	4.8 W	135
50 A	160 A	2.9 W	029				160 A	3.3 W	109	160 A	3.3 W	136
63 A	160 A	5.2 W	030				160 A	4.8 W	110	160 A	4.8 W	137

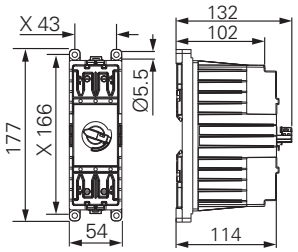
Built-in components MCBs: order code MCB 0.5 up to 63 A - Icn = 15/25 kA

Tripping current	Characteristic K			Characteristic Z			Characteristic B			Characteristic C		
	Max. Back-up fuse gG	Powerloss per pole	YYY	Max. Back-up fuse gG	Powerloss per pole	YYY	Max. Back-up fuse gG	Powerloss per pole	YYY	Max. Back-up fuse gG	Powerloss per pole	YYY
0.5 A	not necessary	1.4 W	263	not necessary	2.5 W	331				not necessary	1.4 W	371
1 A		1.4 W	265		2.3 W	332					1.4 W	372
1.6 A		1.6 W	266		2.8 W	333					1.6 W	373
2 A		1.8 W	267		2.5 W	334					1.8 W	374
3 A	25 A	1.9 W	268	25 A	1.9 W	335				25 A	1.9W	375
4 A	30 A	2.4 W	269	35 A	2.6 W	336				25 A	2.4 W	376
6 A	63 A	2.2 W	270	63 A	3.7 W	337	63 A	2.2 W	351	63 A	2.2 W	377
8 A	80 A	2.9 W	271	80 A	3.5 W	338				63 A	2.9 W	378
10 A	100 A	1.4 W	272	100 A	2.1 W	339	80 A	1.4 W	352	80 A	1.4 W	379
13 A	100 A	2.3 W	273				80 A	2.3 W	353	80 A	2.3 W	380
16 A	100 A	2.5 W	274	100 A	2.8 W	340	100 A	2.5 W	354	100 A	2.5 W	381
20 A	100 A	2.9 W	275	100 A	2.9 W	341	100 A	2.9 W	355	100 A	2.9 W	382
25 A	125 A	3.5 W	276	125 A	3.5 W	342	100 A	3.5 W	356	100 A	3.5 W	383
32 A	160 A	4.2 W	277	160 A	4.2 W	343	125 A	4.2 W	357	125 A	4.2 W	384
40 A	160 A	6.4 W	278	160 A	6.4 W	344	125 A	6.4 W	358	125 A	6.4 W	385
50 A	160A	3.0 W	279	160 A	4.4 W	345	160 A	3.0 W	359	160 A	3.0 W	386
63 A	160 A	5.6 W	280	160 A	5.2 W	346	160 A	5.6 W	360	160 A	5.6 W	387

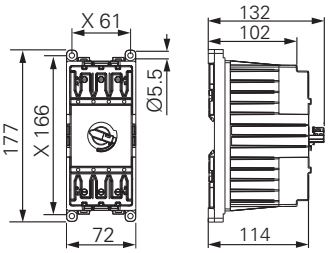
Dimension drawing / termination diagram



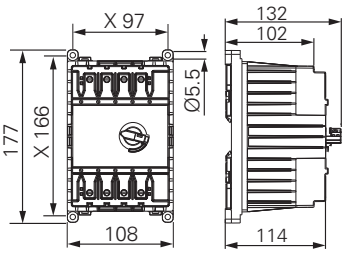
Module size 1



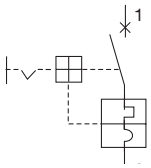
Module size 2



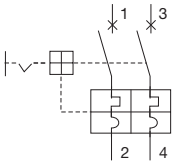
Module size 3



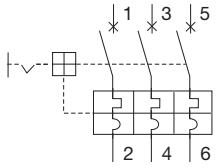
Module size 4



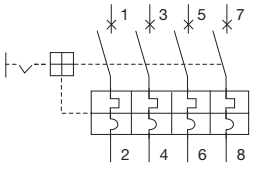
1. 1-pole MCB



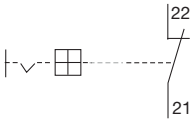
2. 2-pole MCB



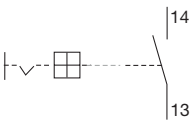
3. 3-pole MCB



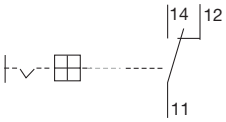
4. 4-pole MCB



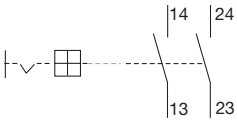
5. HK 1 NC



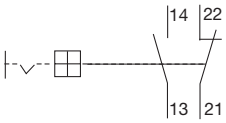
6. HK 1 NO



7. HK 1 C/O

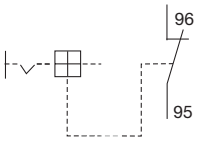


8. HK 2 NO

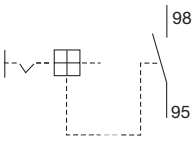


9. HK 1 NO + 1 NC

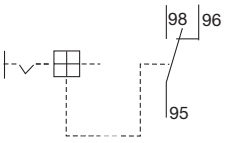
HK: aux. contact, NC: normally closed, NO: normally open, C/O: Changeover



10. SK 1

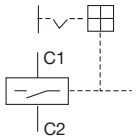


11. SK 1 NO



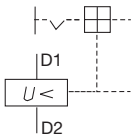
12. SK 1 C/O

SK: Signal contact



13. AA

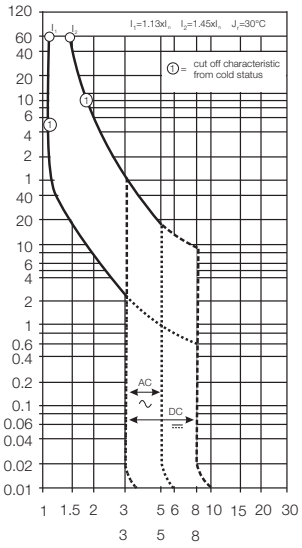
AA: shunt opening release



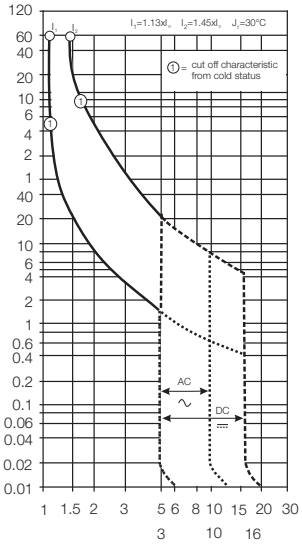
14. UA

UA: undervoltage trip

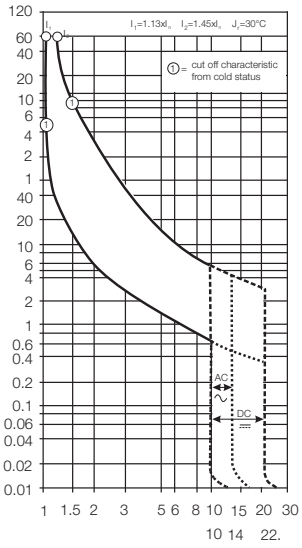
Tripping characteristic



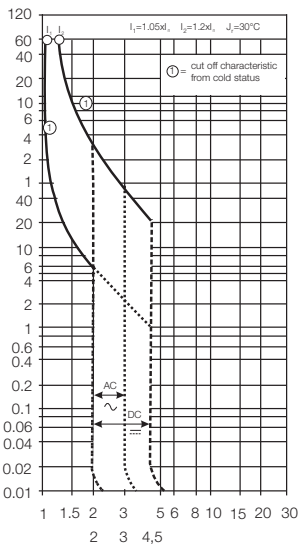
MCB characteristic B



MCB characteristic C



MCB characteristic K



MCB characteristic Z

Size 2

Size 3

Size 4

Technical data

		Residual current circuit breakers RCD from 30 mA up to 0.5 A (25/40/63 A)	
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex db eb IIC / Ex db eb IIB	
EC-Type Examination Certificate		BVS 09 ATEX E 145 U	
Marking accd. to IECEx		Ex de IIB/IIC Gb	
IECEx Certificate of Conformity		IECEx BVS 10.0002 U	
Operating temperature range		-20 °C up to +110 °C (IIC) -45 °C up to +110 °C (IIB) (size 1 and 2)	
Application temperature [1]		-20 °C up to +55 °C (IIC) -45 °C up to +55 °C (IIB) (size 1 and 2)	
Rated voltage	main contact aux. contact	max. 400 V AC (+ 10 %) max. 250 V AC	
Rated current	main contact aux. contact	0.5 A up to max. 63 A max. 5 A	
Rated residual operating current IDn		0.03 up to 0.5 A	
Back-up fuse depend on rated current		up to 100 A	
Connecting terminals	main contact size 1 -4	1 x 1.5 mm² - 1 x 16 mm² fine wire with wire end sleeve/single wire 2 x 1.5 mm² - 2 x 6 mm² fine wire with wire end sleeve/single wire up to 2 x 16 mm² with cable lug GHG9059025R0010 up to 1 x 25 mm² or 2 x 25 mm² with cable lug GHG5101916R0001	
	auxiliary-/signal contact	1.5 mm² up to 2.5 mm² fine wire with wire end sleeve/single wire	
Module size		2	4
No of main contacts		2	4
No. of auxiliary contacts		1	1
Weight		0.9 kg	1.6 kg
Enclosure material		Polyamide	
Padlocking facility		in OFF position with a commercially available padlock	

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also page 2.6.19.


Size 2


Size 3


Size 4

Order Code RCDs 25/40/63 A

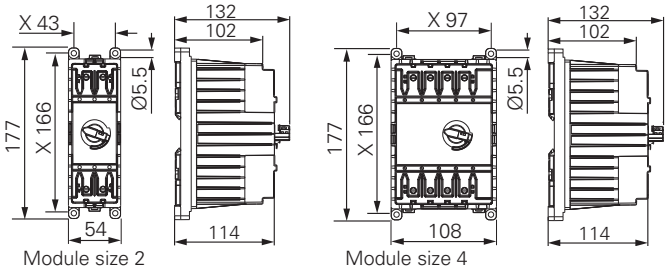
GHG 624 XXXX R0YYY

1. Contacts 2. Tripping current/Rated current

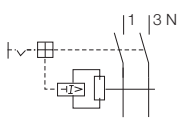
1. Contact arrangement				Termination diagram	No of main contacts		No of main contacts	
Additional components	Main contact	Aux. contact	Signal contact		2 pole (XXXX)	Module size	4 pole (XXXX)	Module size
None	x	---	---	15/18	**2101**	2	**4101**	4
One	x	1 C/O	---	16/19	**3101**	3	**4102**	4
	x	---	1 C/O	17/20	**3102**	3	**4103**	4

2. Rated residual operating current IDn	Rated current 25 A			Rated current 40 A			Rated current 63 A		
	Power dissipation in W			Power dissipation in W			Power dissipation in W		
	2 pole	4 pole	YYY	2 pole	4 pole	YYY	2 pole	4 pole	YYY
0.03 A	2.0	4.8	**012**	4.8	8.4	**013**	7.2	13.2	**014**
0.1 A	2.0	4.8	**022**	4.8	8.4	**023**	7.2	13.2	**024**
0.3 A	2.0	4.8	**032**	4.8	8.4	**033**	7.2	13.2	**034**
0.5 A	2.0	4.8	**042**	4.8	8.4	**043**	7.2	13.2	**044**

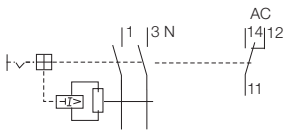
Dimension drawing / termination diagram / tripping characteristic



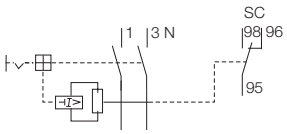
Module size 2 Module size 4



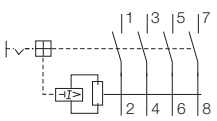
15. 2-pole MCB



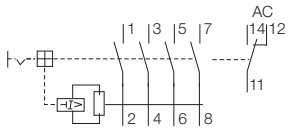
16. 2-pole MCB with aux. contact



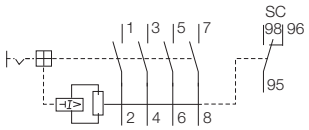
17. 2-pole MCB with signal contact



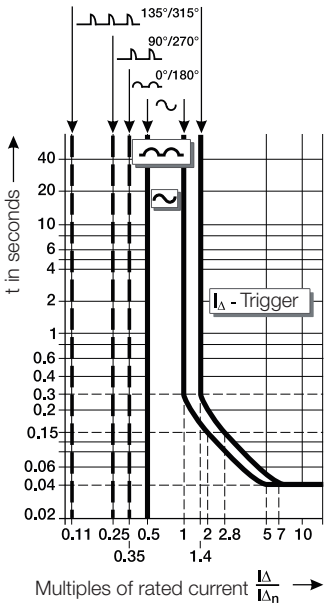
18. 4-pole MCB



19. 4-pole MCB with aux. contact



20. 4-pole MCB with signal contact



Tripping current for RCD

Size 2

Size 3

Size 4

Technical data

		RCBOs from 10 mA up to 0.3 A (trip current 0.5 A - 63 A)		
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex db eb IIC / Ex db eb IIB		
EC-Type Examination Certificate		BVS 09 ATEX E 145 U		
Marking accd. to IECEx		Ex de IIB/IIC Gb		
IECEx Certificate of Conformity		IECEx BVS 10.0002 U		
Operating temperature range		-20 °C up to +110 °C (IIC) -45 °C up to +110 °C (IIB) (option - size 1 and 2)		
Application temperature [1]		-20 °C up to +55 °C (IIC) -45 °C up to +55 °C (IIB) (option - size 1 and 2)		
Rated voltage	main contact aux. contact	max. 400 V AC (+ 10 %) max. 250 V AC		
Rated current	main contact aux. contact	max. 63 A max. 5 A		
Rated switching capacity 2/3 phase 230 V AC (133/230 V AC) kA/cos φ 400 V AC (230/400 V AC) kA/cos φ		6 kA/10 kA (depends on MCB) 10/0.5 10/0.5		
Rated residual operating current ID_n		0.01 up to 0.3 A		
Back-up fuse depend on rated current		up to 100 A		
Connecting terminals	main contact size 1 - 4	1 x 1.5 mm² - 1 x 16 mm² fine wire with wire end sleeve/single wire 2 x 1.5 mm² - 2 x 6 mm² fine wire with wire end sleeve/single wire up to 2 x 16 mm² with cable lug GHG9059025R0010 up to 1 x 25 mm² or 2 x 25 mm² with cable lug GHG5101916R0001		
	auxiliary-/signal contact	1.5 mm² up to 2.5 mm² fine wire with wire end sleeve/single wire		
Module size		2	3	4
No of main contacts		1	1	2
No. of auxiliary contacts		0	1	1
Weight		0.9 kg	1.2 kg	1.6 kg
Enclosure material		Polyamide		
Padlocking facility		in OFF position with a commercially available padlock		

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.


Size 2


Size 3


Size 4

Order Code RCBOs

GHG 625 XXXX R0YYY

1. Contacts

1. Contacts - Icn = 6 kA

Contact arrangement							Term. diag.	No of main contacts		No of main contacts	
Additional components	Main Contact	Aux. contact	Signal contact	N	RCBO			1 pol. (xxxx)	Module size	2 pol. (xxxx)	Module size
					DS201	DDA202+S202					
None	x	-	-	-	-	B/C/K	24			**4101**	4
	x	-	-	x	-	-	21	**2101**	2		
	x	-	-	x	B/C/K	-	21	**2102**	2		
One	x	-	1 C/O	x	-	-	23	**3101**	3		
	x	1 C/O	-	x	-	-	22	**3102**	3		
	x	-	1 C/O	x	B/C/K	-	23	**3103**	3		
	x	1 C/O	-	x	B/C/K	-	22	**3104**	3		
	x	1 C/O	-	-	-	B/C/K	25			**4102**	4
	x	-	1 C/O	-	-	B/C/K	26			**4103**	4
Two	x	2 C/O	-	x	B/C/K	-	25	**3105**	3		
	x	1 C/O	1 C/O	-	B/C/K	-	27	**3106**	3		

1. Contacts - Icn = 10 kA

Contact arrangement								Term. diag	No of main contacts		No of main contacts	
Additional components	Main Contact	Aux. contact	Signal contact	N	RCBO				1 pol. (xxxx)	Module size	2 pol. (xxxx)	Module size
					DS201M	DS202CM	DDA202+ S202 (M/P)					
None	x	-	-	-	-	B/C	-	24			**2121**	2
	x	-	-	-	-	-	B/C/K	24			**4101**	4
	x	-	-	x	-	-	-	21	**2101**	2		
	x	-	-	x	B/C	-	-	21	**2102**	2		
One	x	-	1 C/O	x	-	-	-	23	**3101**	3		
	x	1 C/O	-	x	-	-	-	22	**3102**	3		
	x	-	1 C/O	x	B/C	-	-	23	**3103**	3		
	x	1 C/O	-	x	B/C	-	-	22	**3104**	3		
	x	2 W	-	x	B/C	-	-	22	**3105**	3		
	x	-	1 C/O		-	B/C	-	26			**3121**	3
	x	1 C/O	-	-	-	B/C	-	25			**3122**	3
	x	1 C/O	-	-	-	-	B/C/K	25			**4102**	4
	x	-	1 C/O	-	-	-	B/C/K	26			**4103**	4
Two	x	2 C/O	-	x	B/C		-	22	**3105**	3		

Size 2

Size 3

Size 4

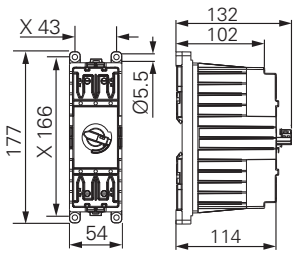
GHG 625 XXXX R Z YYY

2. Rated residual operating current ID_n 3. Tripping current

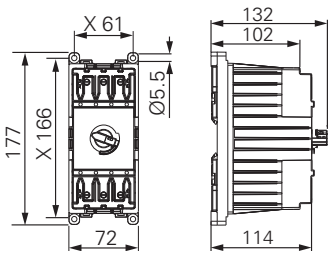
Tripping current	B-Characteristic 6 kA				C-Characteristic 6 kA				K-Characteristic 6 kA			
Type	DS201			DDA202	DS201			DDA202	DS201			DDA202
2. Rated residual operating current IDn												
	ID_n (mA)				ID_n (mA)				ID_n (mA)			
	10	30	300	+ABB S202	10	30	300	+ABB S202	10	30	300	+ABB S202
Z	0	1	3	-	0	1	3	-	0	1	3	-
3. Tripping Current												
0.5 A	-	-	-	-		-	-	**621**	-	-	-	**513**
1 A	-	-	-	-	-	-	-	**622**	-	**046**	**046**	**515**
1.6 A	-	-	-	-	-	-	-	**623**	-	-	-	**516**
2 A	-	-	-	-	-	**024**	**024**	**624**	-	**047**	**047**	**517**
3 A	-	-	-	-	-	-	-	**625**	-	-	-	**518**
4 A	-	-	-	-	-	**025**	**025**	**626**	-	**048**	**048**	**519**
6 A	-	**004**	**004**	**601**	-	**026**	**026**	**627**	-	**049**	**049**	**520**
8A	-	-	-	-	-	**027**	**027**	**628**	-	**050**	**050**	**521**
10 A	**005**	**005**	**005**	**602**	**028**	**028**	**028**	**629**	-	**051**	**051**	**522**
13 A	**006**	**006**	**006**	**603**	**029**	**029**	**029**	**630**	**051**	**052**	**052**	**523**
16 A	**007**	**007**	**007**	**604**	**030**	**030**	**030**	**631**	**052**	**053**	**053**	**524**
20 A	-	**008**	**008**	**605**	-	**031**	**031**	**632**	**053**	**054**	**054**	**525**
25 A	-	**009**	**009**	**606**	-	**032**	**032**	**633**	-	**055**	**055**	**526**
32 A	-	**010**	**010**	**607**	-	**033**	**033**	**634**	-	**056**	**056**	**527**
40 A	-	**011**	**011**	**608**	-	**034**	**034**	**635**	-	**057**	**057**	**528**
50 A	-	-	-	**609**	-	-	-	**636**	-	-	-	**529**
63 A	-	-	-	**610**	-	-	-	**637**	-	-	-	**530**

Tripping current	B-Characteristic 10 kA								C-Characteristic 10 kA								K-Characteristic 10 kA	
Type	DS201M			DS202CM			DDA202	DDA202	DS201M			DS202CM			DDA202	DDA202	DDA202	DDA202
2. Rated residual operating current ID_n																		
	ID_n (mA)								ID_n (mA)									
	10	30	300	10	30	300	+ABBS202M	+ABBS202P	10	30	300	10	30	300	+ABBS202M	+ABBS202P	+ABBS202M	+ABBS202P
z	0	1	3	0	1	3	-	-	0	1	3	0	1	3	-	-	-	-
3. Tripping Current																		
0.5 A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	**371**	013	**263**
1 A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	**372**	015	**265**
1.6 A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	**373**	016	**266**
2 A		-	-	-	-	-	-	-	-	-	-	-	-	-	124	**374**	017	**267**
4 A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125	**375**	018	**268**
3 A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	126	**376**	019	**269**
6 A	-	**254**	**254**	-	**004**	**004**	**101**	**351**	-	**276**	**276**	-	**026**	**026**	127	**377**	020	**270**
8 A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128	**378**	021	**271**
10 A	**255**	**255**	**255**	**005**	**005**	**005**	**102**	**352**	**278**	**278**	**278**	-	**028**	**028**	129	**379**	022	**272**
13 A	-	**256**	**256**	**006**	**006**	**006**	**103**	**353**	-	**279**	**279**	**029**	**029**	**029**	130	**380**	023	**273**
16 A	**257**	**257**	**257**	**007**	**007**	**007**	**104**	**354**	**280**	**280**	**280**	**030**	**030**	**030**	131	**381**	024	**274**
20 A	-	**258**	**258**	-	**008**	**008**	**105**	**355**	-	**281**	**281**	-	**031**	**031**	132	**382**	025	**275**
25 A	-	**259**	**259**	-	**009**	**009**	**106**	**356**	-	**282**	**282**	-	**032**	**032**	133	**383**	026	**276**
32 A	-	**260**	**260**	-	**010**	**010**	**107**	**357**	-	**283**	**283**	-	**033**	**033**	134	**384**	027	**277**
40 A	-	**261**	**261**	-	-	-	**108**	**358**	-	**284**	**284**	-	-	-	135	**385**	028	**278**
50 A	-	-	-	-	-	-	**109**	**359**	-	-	-	-	-	-	136	**386**	029	**279**
63 A	-	-	-	-	-	-	**110**	**360**	-	-	-	-	-	-	137	**387**	030	**280**

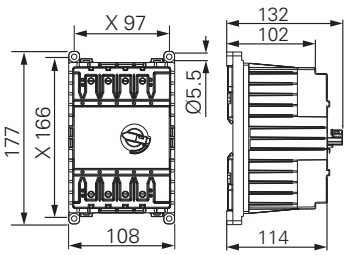
Dimension drawing / Termination diagram



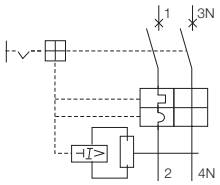
Module size 2



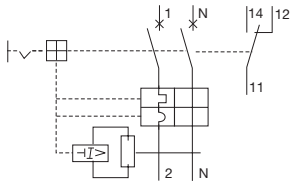
Module size 3



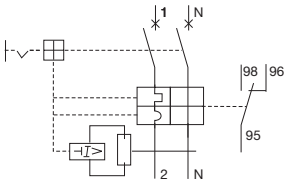
Module size 4



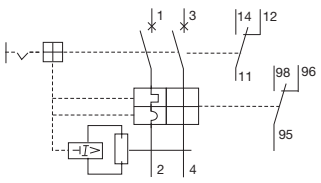
21. RCBO 1-pole + N



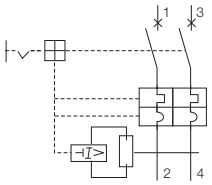
22. RCBO 1-pol. + N with HK



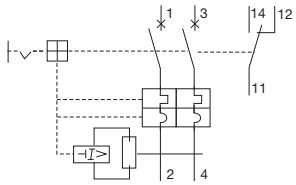
23. RCBO 1-pol. + N with SK



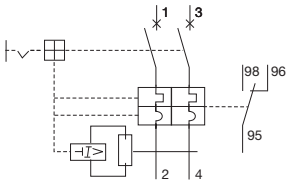
27. RCBO 1-pol. with HK and NO



24. RCBO 2-pole

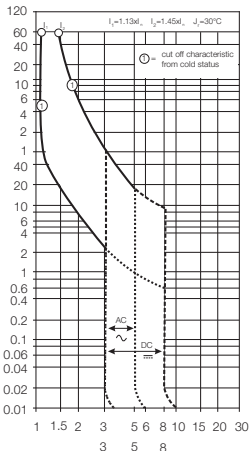


25. RCBO 2-pol. with HK

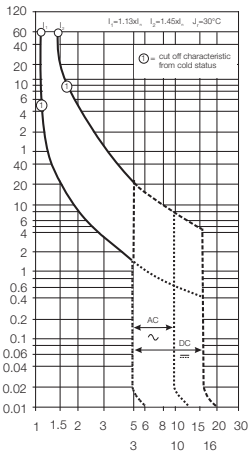


26. RCBO 2-pol. with SK

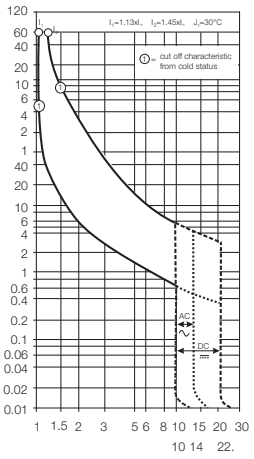
Tripping characteristic



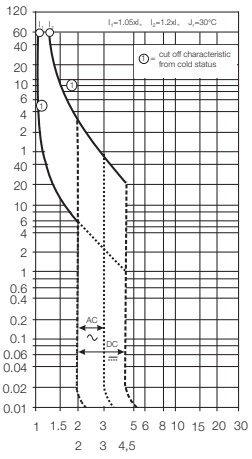
MCB Characteristic B



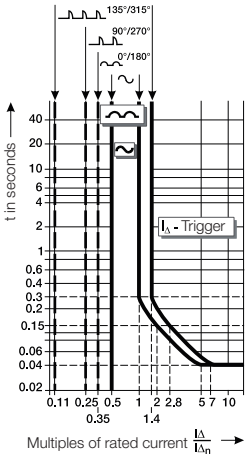
MCB Characteristic C



MCB Characteristic K



MCB Characteristic Z



RCD Characteristic

GHG 627 power contactor 3-pole up to 63 A / 30 kW (optional overcurrent relay) / 4-pole up to 55 A

3-pole 45 A

3-pole 45 A with thermal release

Technical data

		Contactor 3 / 4 pole up to 30 kW					
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex db eb IIC / Ex db eb IIB					
EC-Type Examination Certificate		BVS 09 ATEX E 145 U					
Marking accd. to IECEx		Ex de IIB/IIC Gb					
IECEx Certificate of Conformity		IECEx BVS 10.0002 U					
Operating temperature range		-20 °C up to +110 °C (IIC)					
Application temperature [1]		-20 °C up to +55 °C (IIC)					
Rated voltage	main contact (3-pole) main contact (4-pole) aux. contact	max. 690 V AC / max. 220 V DC max. 690 V AC / max. 440 V DC max. 690 V AC / max. 600 V DC depending on current					
Rated current	main contact aux. contact	max. 63 A (3-pole) / max. 55 A (4-pole) max. 5 A					
Size (3-pole) AC-1 current / AC-3 load		28 A / 5.5 kW	30 A / 7.5 kW	45 A / 11 kW	50 A / 15 kW	50 A / 18.5 kW	63 A / 30 kW
Rated making/breaking capacity accd. to EN 60947-4-1 AC-3 (3-pole)		U_e 400 V/ Pe 4 kW	U_e 400 V/ Pe 7.5 kW	U_e 400 V/ Pe 11 kW	U_e 400 V/ Pe 18.5 kW	U_e 400 V/ Pe 18.5 kW	U_e 400 V/ Pe 30 kW
Size (4-pole) AC-1 current		25 A	30 A	45 A	55 A		
Rated making/breaking capacity accd. to EN 60947-4-1 AC-1 (4-pole)		U_e 400 V/ Ie 25 A	U_e 400 V/ Ie 30 A	U_e 400 V/ Ie 45 A	U_e 400 V/ Ie 55 A		
Connecting terminals	main contact size	1 x 1.5 mm² - 1 x 16 mm² fine wire with wire end sleeve/single wire 2 x 1.5 mm² - 2 x 6 mm² fine wire with wire end sleeve/single wire up to 2 x 16 mm² with cable lug GHG9059025R0010 up to 1 x 25 mm² or 2 x 25 mm² with cable lug GHG5101916R0001					
	auxiliary-/signal contact	1.5 mm² up to 2.5 mm² fine wire with wire end sleeve/single wire					
Module size		5					
No of main contacts		3 / 4					
No. of auxiliary contacts		2 / 4					
Weight		2.5 kg					
Enclosure material		Polyamide					

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

3-pole 45 A with thermal release

3-pole 45 A

Order code power contactor 3-pole

GHG 627 51XX RYYZZ

1. Contactor configuration 3-pole XX

Main components	Main contact	Aux. contact	Module size	Termination diagram	3 pol. (XX)
3 pole contactor	x	2 (1NO + 1NC)	5	1	**11**
3 pole contactor	x	4 (2NO + 2 NC)	5	2	**12**
3 pole contactor + relay	x	2 (1NO + 1NC)	5	3	**17**

2. Relay current setting YY

Relay current setting				Ir (A)					
		no relay (2 ac[1])	no relay (4 ac[1])	4.2 - 5.7	7.6 - 10	13 - 16	20 - 24	24 - 29	35 - 40
YY		**00**	**00**	**14**	**16**	**18**	**20**	**21**	**23**

3. Nominal current & control voltage ZZ

AC-1 Current	AC-3 Power	Control Voltage	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ
28 A	5.5 kW	24 V / 20 V to 60 V AC/DC	**01**	**01**						
30 A	7.5 kW	24 V / 20 V to 60 V AC/DC	**02**	**02**	**02**	**02**	**02**			
45 A	11 kW	24 V / 20 V to 60 V AC/DC	**03**	**03**	**03**	**03**	**03**	**03**		
50 A	15 kW	24 V / 20 V to 60 V AC/DC	**04**	**04**			**04**	**04**	**04**	
50 A	18.5 kW	24 V / 20 V to 60 V AC/DC	**05**	**05**				**05**	**05**	**05**
63 A	30 kW	24 V / 20 V to 60 V AC/DC	**08**							
28 A	5.5 kW	100 V to 250 V AC/DC	**11**	**11**						
30 A	7.5 kW	100 V to 250 V AC/DC	**12**	**12**	**12**	**12**	**12**			
45 A	11 kW	100 V to 250 V AC/DC	**13**	**13**	**13**	**13**	**13**	**13**		
50 A	15 kW	100 V to 250 V AC/DC	**14**	**14**			**14**	**14**	**14**	
50 A	18.5 kW	100 V to 250 V AC/DC	**15**	**15**				**15**	**15**	**15**
63 A	30 kW	100 V to 250 V AC/DC	**18**							
28 A	5.5 kW	250 V to 500 V AC/DC	**21**	**21**						
30 A	7.5 kW	250 V to 500 V AC/DC	**22**	**22**						
45 A	11 kW	250 V to 500 V AC/DC	**23**	**23**						
50 A	15 kW	250 V to 500 V AC/DC	**24**	**24**						
50 A	18.5 kW	250 V to 500 V AC/DC	**25**	**25**						
63 A	30 kW	250 V to 500 V AC/DC	**28**							

[1] ac = auxiliary contact

Example: 3-Pole power contactor with relay Ir=13 - 16 A, no auxiliary contacts, 45 A / 11 kW, control voltage 250 - 500 V
3-Pole contactor with relay Ir=13 - 16 A: **XX = 17**
Ir=13 - 16 A, no auxiliary contacts: **YY = 18**
45 A / 11 kW, control voltage 250 - 500 V: **ZZ = 13**

Order No. **GHG 627 5117 R1813**

4-pole 45 A

order code power contactor 4-pole

GHG 627 51XX R00YY

1. Contactor configuration 4-pole XX

Main components	Main contact	Aux. contact	Module size	Termination diagram	4-pol. (XX)
4 pole contactor	x	2 (1NO + 1NC)	5	4	**14**
4 pole contactor	x	4 (2NO + 2NC)	5	5	**15**

2. AC-1 current / Control voltage YY

AC-1 Current	Control voltage		
	24 - 60 V AC/DC	100 - 250 V AC/DC	250 - 500 V AC/DC
	YY	YY	YY
25 A	**01**	**11**	**21**
30 A	**02**	**12**	**22**
45 A	**03**	**13**	**23**
55 A	**04**	**14**	**24**

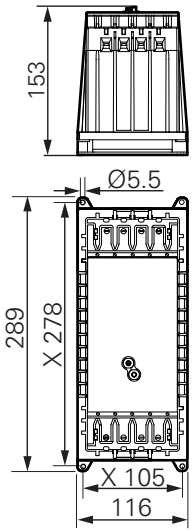
Example: 4-Pole power contactor, 4 auxiliary contacts, 55 A / 18.5 kW, control voltage 100 - 250 V
4-Pole contactor with 4 auxiliary contacts: **XX = 15**
55 A / 18.5 kW, control voltage 100 - 250 V: **YY = 14**

Order No. **GHG 627 5115 R0014**

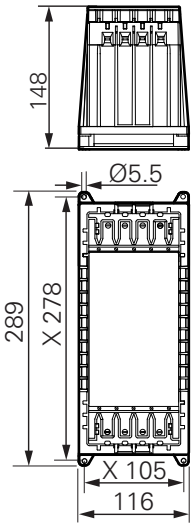
3-pole 45 A with thermal release

3-pole 45 A

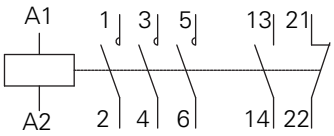
Dimension drawing /Termination diagram



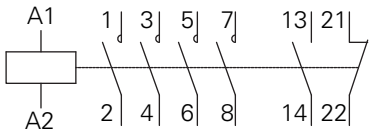
Module size 5 with relay



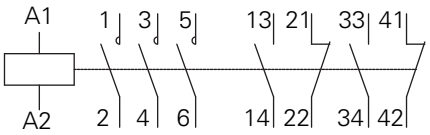
Module size 5 without relay



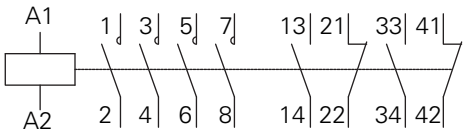
1. Power contactor 3-pole + 2 ac



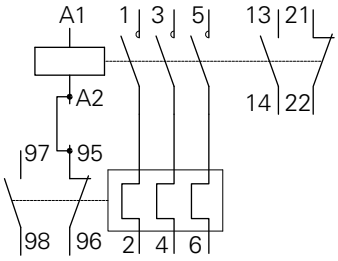
4. Power contactor 4-pole + 2 ac



2. Power contactor 3-pole + 4 ac



5. Power contactor 4-pole + 4 ac



3. Power contactor 3-pole + relay

ac = aux. contact

Ex-d Built-in Components GHG 61

Flameproof encapsulation up to 40 A

Safety easy to install

If electrical apparatus is to be used in hazardous areas, i.e. potentially explosive atmospheres, where arcing or sparking can occur, it must be protected according to EN 60079 pp by special constructional measures. Eaton's Crouse-Hinds Business explosion-protected apparatus, such as the modules in Ex-e distributions, derives its high degree of safety through the combination of various types of protection.

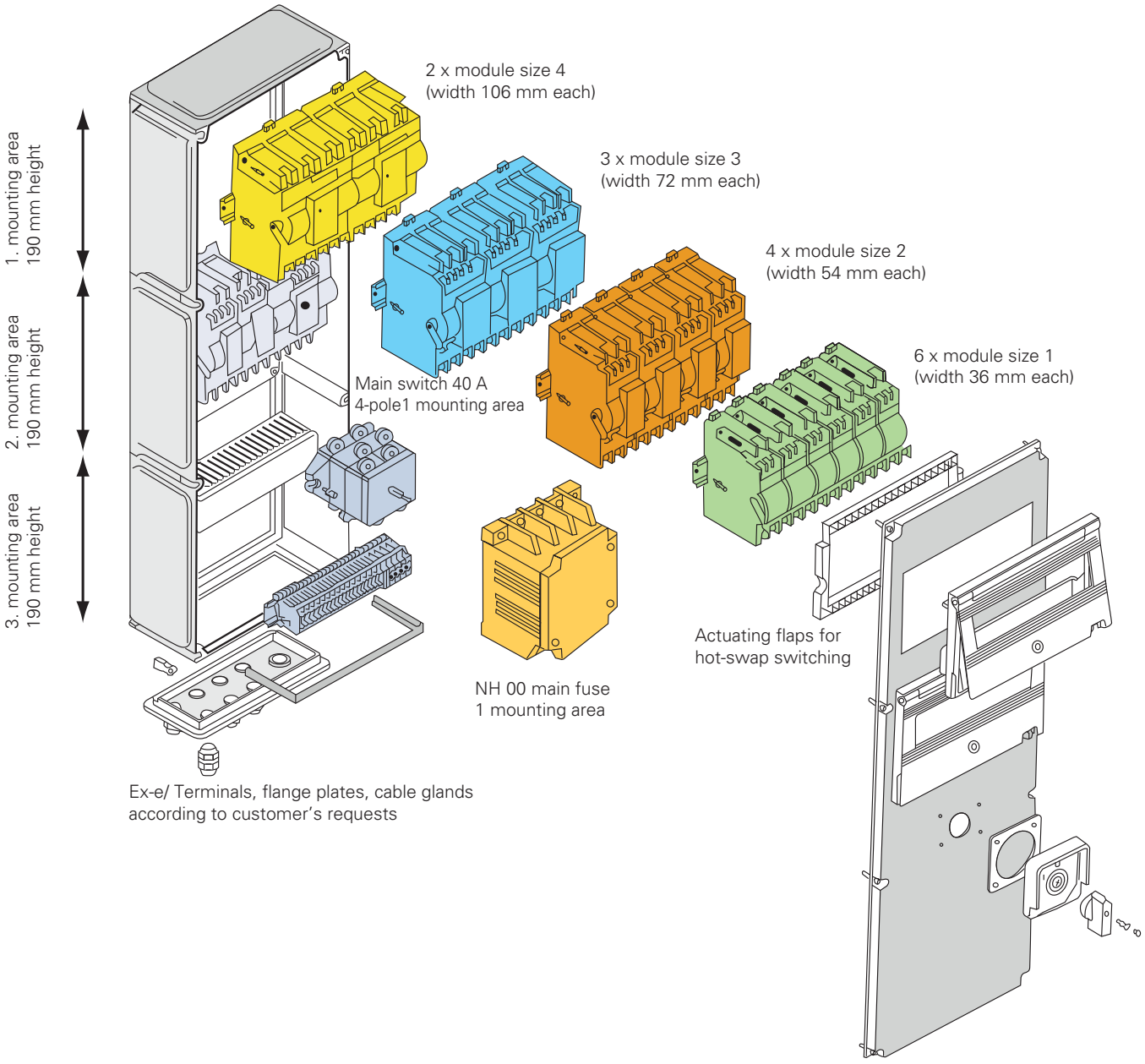
Thus, flameproof encapsulated components (Ex-d), for instance, are also integrated in enclosures of the type "Increased Safety" (Ex-e). As these components are of modular design, they can be combined according to customers' requirements. Five enclosure sizes provide enough space for whatever modules are required: MCBs, RCDs, RCBOs contactors, motor starters, over-current trips, star-delta time relays or main switches. Protected by a transparent flap, all modules can be conveniently monitored and operated.

The modules are inserted in the distribution by simple snap-on rail mounting. Thus, modules can be replaced or added quickly and reliably. That makes servicing and extension work simpler and faster – and thus more cost efficient.

We've also provided for your personal safety: MCBs, RCDs, RCBOs and power circuit breakers can be equipped with a lock in the OFF position. That protects you during your work on the system against inadvertent switching on – better safe than sorry!

Features

- **Snap-on**
- **Individually combinable**
- **Operation via actuating flap**
- **Optimum space utilisation with 4 enclosure sizes**



Individual modular distributions

Eaton's Crouse-Hinds Business explosion protected Ex-e moulded-plastic distributions can be individually assembled and equipped with various components. Enclosure modules of size 1, 2, 3 and 4 are available for combining flameproof encapsulated modules (Ex-d) according to customers' specifications.

Four enclosure sizes provide enough space for whatever modules are required: MCBs, RCDs, RCBOs, contactors, over-current trips star-delta-time relays or motor starters. Different module sizes can be placed side by side in one mounting space. The modules are inserted in the distribution by simple snap-on rail mounting. Thus, modules can be replaced or added quickly and reliably. Lockable actuating flaps allow easy operation without opening the enclosure.

For an easy selection of certified components two temperature information are provided:

- Operating temperature range
  This defines the max. permitted temperature range of component in the installed state. This has to be considered when configuring
- Ambient temperature range
  These temperature range defines the expected ambient temperature range for a fully planned equipment and is based on the experiences of configured devices at normal installation conditions. However, it must be observed in any case, the conditions of the type examination certificate. These temperatures are purely based on explosion protection. Mechanical and electrical function based on the installation situation (e.g. self-heating) have to be considered. **For binding function ambient temperatures please refer to the product manual.**

Size 1 MCB-1-pole

Size 2 MCB-2-pole

Size 3 MCB-3-pole

Size 4 MCB-4-pole

Technical data

		MCB 0.5 A up to 40 A
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I Mb
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–55 °C up to +110 °C (size 0, 1, 2 - IIC) –20 °C up to +110 °C (size 3, 4 - IIC) –55 °C up to +110 °C (size 3, 4 - IIB)
Application temperature[1)]		–20 °C up to +55 °C (size 3, 4 - IIC) –55 °C up to +55 °C (size 0, 1, 2 - IIC; size 3, 4 - IIB)
Rated voltage	main contact aux. contact	max. 400 V AC (+ 10 %) max. 250 V AC
Rated current	main contact aux. contact	0.5 A up to 40 A max. 5 A
Rated switching capacity 2/3 phase		10 kA
230 V AC (133/230 V AC) kA/cos φ		10/0.5
400 V AC (230/400 V AC) kA/cos φ		10/0.5
Back-up fuse		depend on rated current up to 100 A
Connecting terminals	main contact aux. contact	2 x 10 mm^2 fine wire with wire end sleeve/single wire 2 x 2.5 mm^2 fine wire with wire end sleeve/single wire
Weight	1-pole 2-pole 3-pole 4-pole	0.55 kg size 1 0.95 kg size 2 1.25 kg size 3 1.57 kg size 4
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Options		Auxiliary-signal contact
Padlocking facility		in OFF position with a commercially available padlock

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

Size 4 MCB-4-pole

Size 3 MCB-3-pole

Size 2 MCB-2-pole

Size 1 MCB-1-pole

Order code MCB 0.5 A up to 40 A

GHG 612 XXXX R0YYY

1. Contacts

1. Ordering Code for Contacts

Contacts	Termination diagram[1]	1-pole (xxxx)	Module size[2]	2-pole (xxxx)	Module size[2]	3-pole (xxxx)	Module size[2]	4-pole (xxxx)	Module size[2]
only main contact	A1 up to A5	**1141**	1	**2141**	2	**3141**	3	**4141**	4
+ aux. contact (1 C/O)	B3	**1142**	1	**2142**	2	**3142**	3	**4142**	4
+ aux. contact (1NO+1NC)	B1, B2			**3150**	3				
+ aux. contact (2NO)	B4					**4168**	4		
+ N + aux. contact (1NO+1NC)	A4, B1, B2					**4166**	4		
+1 C/O	C3	**2148**	2	**3157**	3	**4147**	4	**4143**	4
+ signal contact (1NC) + aux. contact (1NO)	C2 + B1					**4148**	4		
+ signal contact (1NO) + aux. contact (1NO)	C1 + B1					**4161**	4	**4160**	4
+ signal contact (1NC) + aux. contact (1NC)	C2 + B2					**4163**	4		
+ Overload release (12 - 60 V)	D	**2150**	2	**3147**	3				
+ Overload release (110 - 415 V)	D	**2151**	2	**3146**	3	**4146**	4		
+ undervoltage trip [3]	E			**3148**	3	**4144**	4		
+ signal contact (1 C/O)	C3								
+ aux. contact (1 C/O)	B3			**3143**	3	**4164**	4		
+ Overload release (110 - 415 V)	D								
+ signal contact (1 C/O)	C3			**4159**	4				
+ Overload release (12 - 60 V)	D								
+ aux. contact (1 C/O)	B3			**3149**	3				
+ Overload release (110 - 415 V)	D								
+ signal contact (1 C/O)	C3								
+ auxiliary contact (1 C/O)	B3			**4165**	4				
+ Overload release (12 - 60 V)	D								
+ signal contact (1 C/O)	C3								
+ aux. contact (1 C/O)	B3			**4169**	4				
+ undervoltage trip [3]	E								
+ signal contact (1 C/O)	C3					**4167**	4		
+ undervoltage trip [3]	E								
+ signal contact (1 C/O)	C3								
+ aux. contact (1 C/O)	B3					**4174**	4		

[1] Termination diagram see page 11.21

[2] Module size see dimension drawing page 11.22

[3] undervoltage trip 12 V DC, 24 V AC/DC, 48 V AC/DC, 110 V AC/DC, 230 V AC/DC, 400 V AC on request


Size 1 MCB-1-pole


Size 2 MCB-2-pole


Size 3 MCB-3-pole


Size 4 MCB-4-pole

Order code MCB 0.5 A up to 40 A

GHG 612 XXXX R0YYY

2. Tripping current

2. Order code for tripping current, characteristic, max. back-up fuse, power dissipation per pole

Tripping current	Characteristic K Max. Back-up fuse gG	YYY	Characteristic Z Max. Back-up fuse gG	YYY	Characteristic B Max. Back-up fuse gG	YYY	Characteristic C Max. Back-up fuse gG	YYY
0.5 A	not necessary	**013**	not necessary	**081**			not necessary	**121**
0.75 A		**014**						
1.0 A		**015**		**082**				**122**
1.6 A		**016**		**083**				**123**
2 A		**017**		**084**				**124**
3 A	20 A	**018**	20 A	**085**			20 A	**125**
4 A	25 A	**019**	20 A	**086**			20 A	**126**
6 A	63 A	**020**	35 A	**087**	63 A	**101**	40 A	**127**
8 A	63 A	**021**	40 A	**088**			63 A	**128**
10 A	63 A	**022**	63 A	**089**	100 A	**102**	100 A	**129**
13 A					100 A	**103**	100 A	**130**
16 A	80 A	**023**	63 A	**090**	100 A	**104**	100 A	**131**
20 A	81 A	**024**	80 A	**091**	100 A	**105**	100 A	**132**
25 A	100 A	**025**	80 A	**092**	100 A	**106**	100 A	**133**
32 A	100 A	**026**	100 A	**093**	100 A	**107**	100 A	**134**
40 A	125 A	**027**	100 A	**094**	125 A	**108**	125 A	**135**

Back-up fuse is only required if at the installation point the max. prospective, unaffected short-circuit current will exceed the rated switching capacity.

Example

GHG 612 XXXX R 0YYY

GHG 612 **3143** R 0**023**

3-pole
+ signal contact (1 C/O)
+ aux. contact (1 C/O)

16 A
K-Characteristic

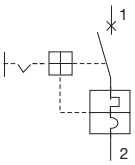

Size 4 MCB-4-pole


Size 3 MCB-3-pole

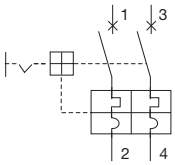

Size 2 MCB-2-pole


Size 1 MCB-1-pole

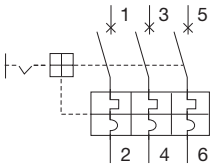
Termination diagram

① 

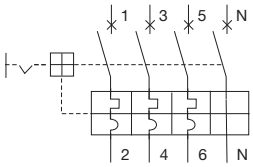
1. 1-pole MCB

② 

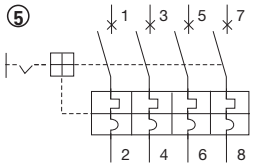
2. 2-pole MCB

③ 

3. 3-pole MCB

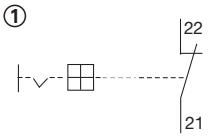
④ 

3. 3-pole + N MCB

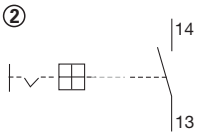
⑤ 

4. 4-pole MCB

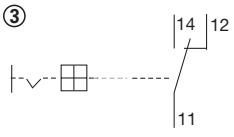
A. main contact

① 

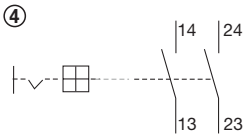
HK 1 NC

② 

HK 1 NO

③ 

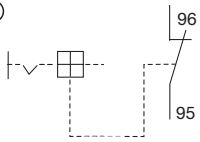
HK 1 C/O

④ 

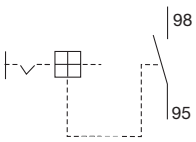
HK 2 NO

HK: aux. contact, NC: normally closed, NO: normally open, C/O: Changeover

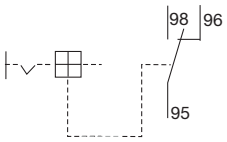
B. Auxiliary contacts

① 

SK 1

② 

SK 1 NO

③ 

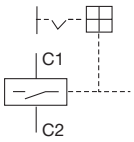
1SK 1 C/O

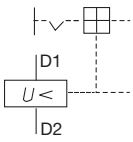
13. AA

14. UA

SK: Signal contact

C. Signal contacts





D. AA: shunt opening release

E. undervoltage trip

HK = main contact
ac = aux. contact
SK = signal contact
AA = shunt opening release
UA = undervoltage trip

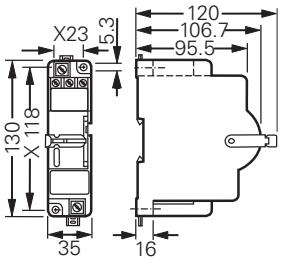
Size 1 MCB-1-pole

Size 2 MCB-2-pole

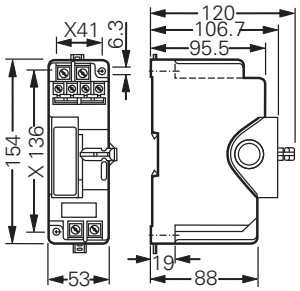
Size 3 MCB-3-pole

Size 4 MCB-4-pole

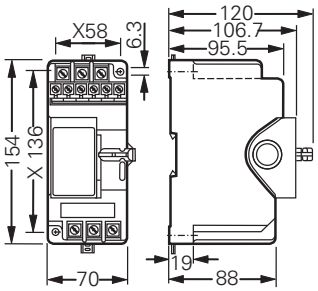
Dimension drawing I Termination diagram



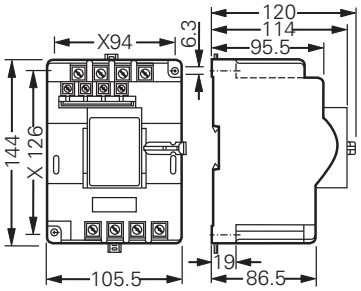
Module size 1



Module size 2



Module size 3



Module size 4

X = fixing dimension

Dimensions in mm

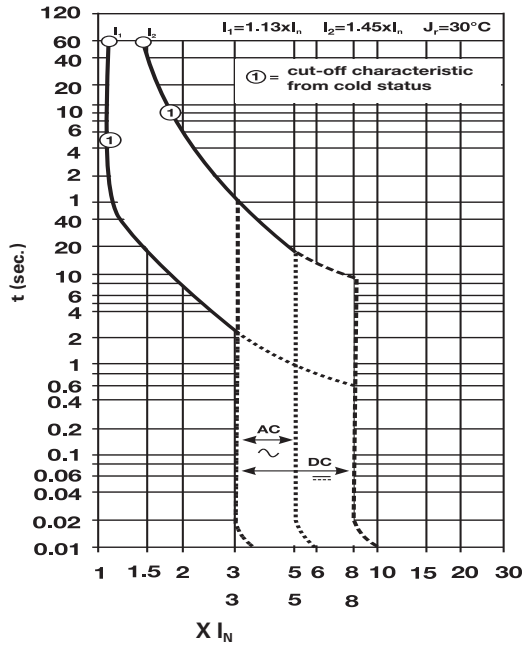
Size 4 MCB-4-pole

Size 3 MCB-3-pole

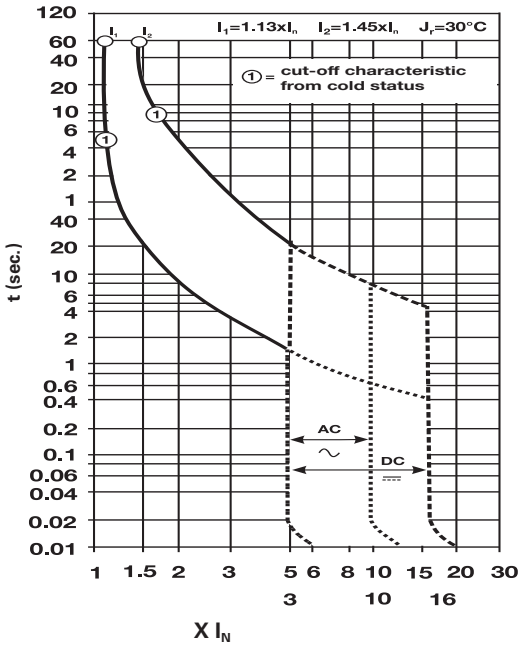
Size 2 MCB-2-pole

Size 1 MCB-1-pole

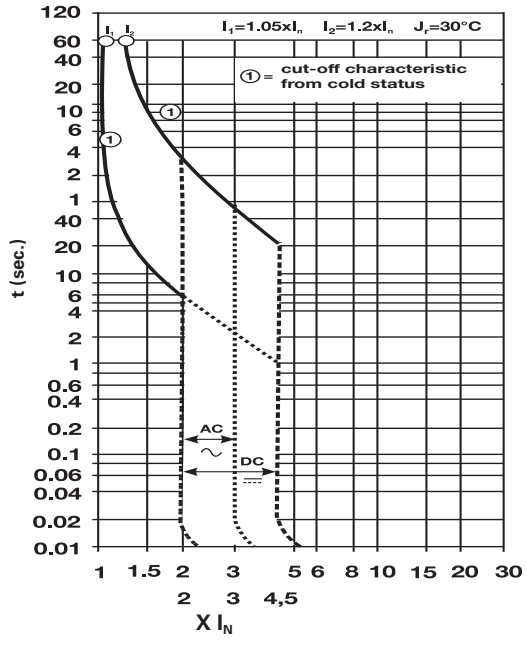
Tripping characteristic



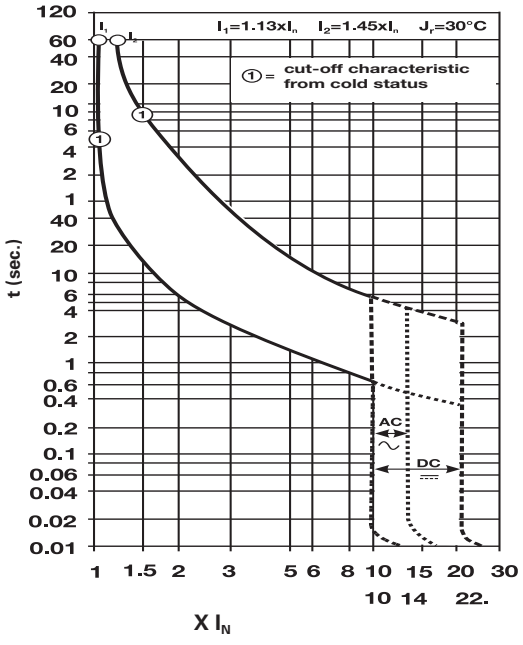
B-Characteristic



C-Characteristic



Z-Characteristic



K-Characteristic

RCBO 2-pole

Technical data

		RCBO 0.5 A up to 40 A
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–20 °C up to +110 °C (size 4 - IIC) –55 °C up to +110 °C (size 4 - IIB)
Application temperature[1)]		–20 °C up to +55 °C (size 4 - IIC) –55 °C up to +55 °C (size 4 - IIB)
Rated voltage	main contact aux. contact	max. 400 V AC (+ 10 %) max. 250 V AC
Rated current	RCD main contact aux. contact	25 A; 40 A 1.0 A up to 40 A max. 5 A
Rated switching capacity 2 phase		10 kA (2-pole)
Back-up fuse	RCD MCB	63 A gG depend on rated current up to 100 A
Connecting terminals	main contact aux. contact	2 x 10 mm^2 fine wire with wire end sleeve/single wire 2 x 2.5 mm^2 fine wire with wire end sleeve/single wire
Weight	1-pole + N 2-pole	0.95 kg size 2 1.57 kg size 4
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Options		auxiliary-/Signal contact
Padlocking facility		in OFF position with a commercially available padlock

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

RCBO 2-pole

Order code RCBO 0.5 A up to 32 A

GHG 612 XXXX RXYYY

1. Contacts
2. Tripping current

1. Order code for RCBO 6 kA

Pole	Characteristic	Contacts	Termination diagram	Module size	XXXX RX
2-pole	K		4	4 105.5 mm	**4156 R 0**
2-pole	K	aux. contact (1 C/O)	5		**4157 R 0**
2-pole	K	Signal contact (1 C/O)	6		**4158 R 0**
2-pole	B, C				**4156 R 2**
2-pole	B, C	aux. contact (1 C/O)	5		**4157 R 2**
2-pole	B, C	Signal contact (1 C/O)	6		**4158 R 2**

1. Order code for RCBO 10 kA

Pole	Characteristic	Contacts	Termination diagram	Module size	XXXX RX
2-pole	K		4	4 105.5 mm	**4156 R 5**
2-pole	K	aux. contact (1 C/O)	5		**4157 R 5**
2-pole	K	signal contact (1 C/O)	6		**4158 R 5**

2. Order code for tripping current and characteristic

Tripping current	Characteristic C (YYY)		Characteristic B (YYY)		Characteristic K (YYY)		Characteristic C (YY)
	30 mA	300 mA	30 mA	300 mA	30 mA	300 mA	100 mA
2 A	**004**	**024**			**084**	**104**	**204**
4 A	**005**	**025**			**085**	**105**	**205**
6 A	**006**	**026**	**046**	**066**	**086**	**106**	**206**
8 A	**007**	**027**	**047**	**067**	**087**	**107**	**207**
10 A	**008**	**028**	**048**	**068**	**088**	**108**	**208**
16 A	**009**	**029**	**049**	**069**	**089**	**109**	**209**
20 A	**010**	**030**	**050**	**070**	**090**	**110**	**210**
25 A	**011**	**031**	**051**	**071**	**091**	**111**	**211**
32 A	**012**	**032**	**052**	**072**	**092**	**112**	**212**
40 A			**053**	**073**	**093**	**113**	**213**

Example

GHG 612 XXXX R XYYY

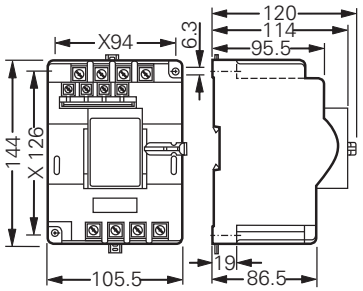
GHG 612 **4157** R 0**090**

K-Characteristic 6 kA; with aux. contact

20 A; 30 mA; K

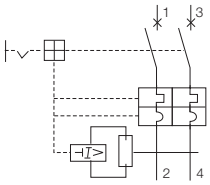
RCBO 2-pole

Dimension drawing I Termination diagram



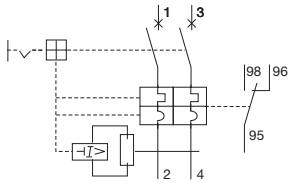
Module size 4

①



RCBO 2-pole

②



RCBO 2-pol. with SK 1 C/O

Tripping characteristic see page 11.23

HK = main contact
ac = aux. contact
SK = Signal contact

Dimensions in mm

RCD-4-pole

RCD-2-pole

Technical data

		RCD from 30 mA to 500 mA
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–55 °C up to +110 °C (size 1, 2 - IIC) –20 °C up to +110 °C (size 3, 4 - IIC) –55 °C up to +110 °C (size 3, 4 - IIB)
Application temperature[1)]		–20 °C up to +55 °C (size 3, 4 - IIC) –55 °C up to +55 °C (size 0, 1, 2 - IIC; size 3, 4 - IIB)
Rated voltage	main contact aux. contact	max. 400 V AC (+ 10 %) max. 250 V AC
Rated current	RCD aux. contact	25 A; 40 A; 63 A max. 5 A
Rated switching capacity		10 kA
Back-up fuse	RCD tipping current	63 A gG 30 mA up to 500 mA
Connecting terminals	main contact aux. contact	2 x 10 mm^2 fine wire with wire end sleeve/single wire 2 x 2.5 mm^2 fine wire with wire end sleeve/single wire
Weight	2-pole 4-pole	0.95 kg size 2 1.57 kg size 4
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Options		aux. contact
Padlocking facility		in OFF position with a commercially available padlock

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

RCD 2-pole

RCD 4-pole

Order code RCD from 30 - 500 mA

GHG 612 XXXX RYYYY

1. Contacts

2. Tripping current

1. Order code for contacts

Contacts	Characteristic	Enclosure width	XXXX
2-pole	only main contact	Enclosure size 2, 53.0 mm	**2144**
2-pole	aux. contact (1 C/O) (F200)		**2147**
4-pole	only main contact	Enclosure size 4, 105.4 mm	**4149**
4-pole	aux. contact (1 C/O) (F200)		**4150**

2. Order code for rated current and tripping current

Rated current	Tripping current	Power dissipation in W		YYYY
		2-pole	4-pole	
25 A	0.03 A	2.0	4.8	**0002**
40 A	0.03 A	4.8	8.4	**0003**
63 A	0.03 A	7.2	13.2	**0004**
25 A	0.1 A	2.0	4.8	**0005**
40 A	0.1 A	4.8	8.4	**0006**
63 A	0.1 A	7.2	13.2	**0007**
25 A	0.3 A	2.0	4.8	**0008**
40 A	0.3 A	4.8	8.4	**0009**
63 A	0.3 A	7.2	13.2	**0010**
25 A	0.5 A	2.0	4.8	**0011**
40 A	0.5 A	4.8	8.4	**0012**
63 A	0.5 A	7.2	13.2	**0013**

Example

GHG 612 XXXX RYYYY

GHG 612 **21 44** R **0002**

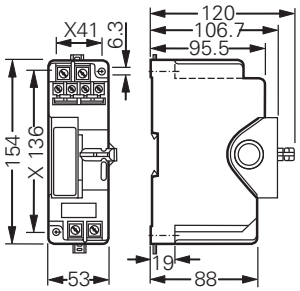
Enclosure size 2, 53 mm — 2 pole — Rated current 25 A

Tripping current 0.03 A

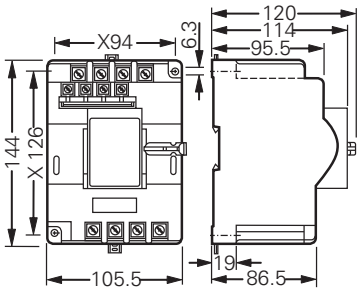
RCD 2-pole

RCD 4-pole

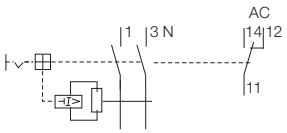
Dimension drawing I Termination diagram



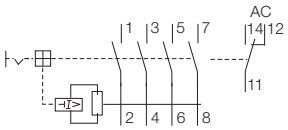
Module size 2



Module size 4 X = fixing dimension



2-pole + ac 1 C/O



4-pole + ac 1 C/O

HK = main contact
ac = aux. contact

Dimensions in mm

NH-00

Technical data

	NH 00 main fuse up to 125 A
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de IIC / Ⓔx I M2 Ex de I
EC-Type Examination Certificate	PTB 99 ATEX 1066 U
IECEx Certificate of Conformity	IECEx BKI 07.0035 U
Marking accd. to IECEx	Ex de IIC
Operating temperature range	–20 °C up to +90 °C
Application temperature[1)]	–20 °C up to +55 °C
Rated voltage aux. contact	690 V max. 250 V AC
Rated current aux. contact	2 A up to 125 A max. 5 A
Rated switching capacity	max. 100 kA, depending on fuse rating
Connecting terminals	up to 95 mm2
Connecting terminals signal contact	2 x 2.5 mm2 fine wire
Min. cross section	up to 25 A 4 mm^2 up to 35 A 6 mm^2 up to 50 A 10 mm^2 up to 63 A 25 mm^2 up to 100 A 50 mm^2 up to 125 A 70 mm^2
Weight	approx. 3.5 kg (without fuse)
Enclosure material	glass-fibre reinforced polyester
Enclosure colour	white
Options	aux. contact

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account.
See also pages 2.6.37.

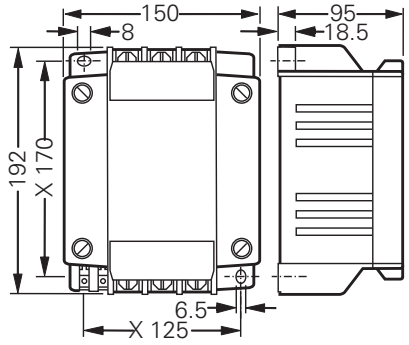
NH-00

Ordering details NH 00 main fuse up to 125 A

Content	Rated current	Mounting width	Order Unit	Order No.
Without signal contact				
Empty enclosure 3-pole	2 A - 100 A	150 mm	2	**GHG 610 1940 R0001**
Empty enclosure 3-pole	2 A - 125 A	150 mm	2	**GHG 610 1940 R0002**
With signal contact (1 NC)				
Empty enclosure 3-pole	2 A - 125 A	150 mm	2	**GHG 610 1940 R0006**

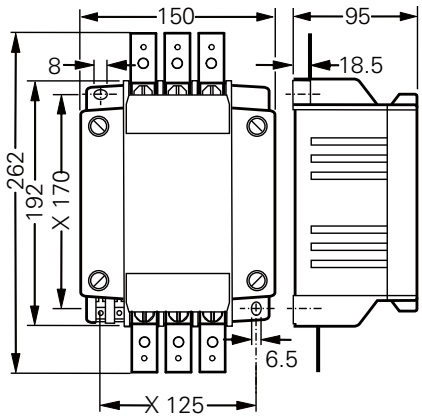
Delivery with fuses on request

Dimension drawing I Termination diagram

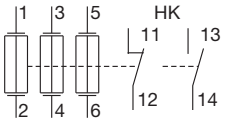


up to 100 A

X = fixing dimension



125 A



NH 00

HK = aux. contact

Dimensions in mm

80 A 4-pole

Technical data

		Main switch up to 180 A				
Marking accd. to 2014/34/EU		⟨Ex⟩ II 2 G Ex de IIC Gb / ⟨Ex⟩ Ex de IIB Gb				
EC-Type Examination Certificate						
switch 20 A		BVS 14 ATEX E 076 U				
switch 40 A		BVS 14 ATEX E 085 U				
switch 80 A		BVS 12 ATEX E 127 U				
switch 125 A up to 180 A		PTB 99 ATEX 1062 U				
IECEx Certificate of Conformity						
switch 20 A		BVS 14.0047 U				
switch 40 A		BVS 14.0055 U				
switch 80 A		IECEx BVS 12.0083 U				
switch 125 A up to 180 A		IECEx BKI 07.0003 U				
Marking accd. to IECEx		Ex de (ia/ib) IIC				
		20 A	40 A	80 A	125 A	180 A
Operating temperature range	(IIB)	–55 °C up to +80 °C	–55 °C up to +90 °C	–55 °C up to +80 °C	–	–
	(IIC)	–40 °C up to +80 °C	–40 °C up to +90 °C	–20 °C up to +80 °C	–20 °C up to +80 °C	–20 °C up to +80 °C
Application temperature[1)]	(IIB)	–55 °C up to +80 °C	–55 °C up to +55 °C	–55 °C up to +55 °C	–	–
	(IIC)	–40 °C up to +55 °C	–40 °C up to +55 °C	–20 °C up to +55 °C	–20 °C up to +55 °C	–20 °C up to +55 °C
Rated voltage		690 V				
Type of switch		20 A	40 A	80 A	125 A	180 A
Rated current		20 A	40 A	80 A	125 A	180 A
Rated making/breaking capacity accd. EN 60947-5-1 AC-3	U_e 400 V	I_e 20 A	Ie 40 A	Ie 80 A	Ie 125 A	Ie 180 A
	U_e 500 V	I_e 16 A	Ie 40 A	Ie 80 A	Ie 125 A	Ie 150 A
	U_e 690 V	I_e 10 A	Ie 32 A	Ie 63 A	Ie 110 A	Ie 125 A
Back-up fuse up to 500 V		35 A gG	80 A gG	160 A gG	200 A gG	250 A gG
Connecting terminals switch 20 A		2 x 1.5 up to 4 mm^2				
switch 40 A		2 x 4 up to 16 mm^2				
switch 80 A		2 x 4 up to 25 mm^2, with cable lug 1 x 35 mm^2				
switch 125 A		2 x 4 up to 70 mm^2, with cable lug 1 x 120 mm^2				
switch 180 A		2 x 4 up to 70 mm^2, with cable lug 1 x 120 mm^2				
Weight		1.0 kg	1.2 kg	3.68 kg	6.3 kg	6.5 kg
Enclosure material		glass-fibre reinforced polyester				
Enclosure colour		white				

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

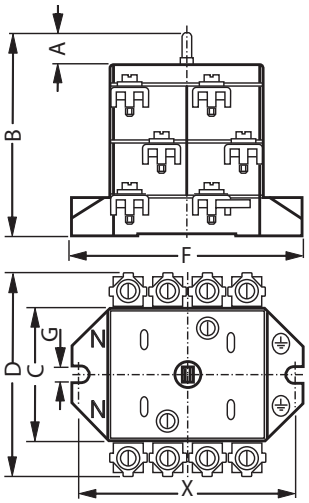
20 A / 40 A fits in flat and high encolsure GHG 619, 80 A /125 A / 180 A fits in high enclosure GHG 619

80 A 4-pole

Ordering details main switch up to 180 A

Content	Rated current	Order No.
Type 3-pole		
3-pole	20 A	**GHG 260 1004 R0005**
3-pole	40 A	**GHG 260 1005 R0005**
3-pole	80 A	**GHG 260 1006 R0003**
3-pole	125 A	**GHG 260 1007 R0003**
3-pole	180 A	**GHG 260 1008 R0003**
Type 4-pole		
4-pole	20 A	**GHG 260 1004 R0006**
4-pole	40 A	**GHG 260 1005 R0006**
4-pole	80 A	**GHG 260 1006 R0004**
4-pole	125 A	**GHG 260 1007 R0004**
4-pole	180 A	**GHG 260 1008 R0004**

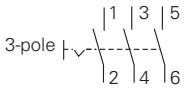
Dimension drawing I Termination diagram

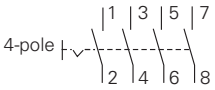


Main switch

Switch

Dimensions	20 A	40 A	80 A	125 A/180 A
A	45	23	32	9
B	110	110	169	173
C	50	73	130	145
D	70.4	118	167	194
X	72	114	140	170
F	80	126	160	192
G	5.5	6.2	9	9





Dimensions in mm

20 A 3-pole

Technical data

		Air-break contactor 20 A
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb /Ⓔx I M 2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–20 °C up to +110 °C IIC –55 °C up to +110 °C IIB
Application temperature[1)]		–20 °C up to +55 °C IIC –55 °C up to +55 °C IIB
Rated voltage	main contact aux. contact control A1-A2	max. 690 V AC max. 250 V AC 12 V up to 400 V AC, 50-60 Hz / 12 V up to 250 V/DC
Rated current	main contact aux. contact	max. 20 A max. 6 A
Rated making/breaking capacity accd. to EN 60947-4-1 AC-3		U_e 230 V / P_e 2.2 KW U_e 400 V / P_e 4 KW U_e 690 V / P_e 4 KW
Rated making/breaking capacity aux. contact accd. to EN 60947-4-1 AC-11		U_e 230 V / I_e 4 A
Connecting terminals		
	main contact aux. contact control A1-A2	2 x 10 mm² fine wire with wire end sleeve/single wire 2 x 2.5 mm² fine wire with wire end sleeve/single wire 2 x 2.5 mm² fine wire with wire end sleeve/single wire
Weight		1.26 kg size 3
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Options		aux. contact

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

20 A 3-pole

Order code Air-break contactor 20 A

GHG 618 3104 RXXXX ← Auxiliary contacts

One auxiliary contact for mounting width 70 mm

	Auxiliary contacts (XXXX)	
Control voltage A1-A2	**1 NO**	**1 NC**
24 V AC	**0101**	**0201**
42 V AC	**0102**	**0202**
48 V AC	**0103**	**0203**
110 V AC	**0104**	**0204**
230 V AC	**0105**	**0205**
230 / 240 V AC	**0106**	**0206**
380 / 400 V AC	**0107**	**0207**
400 V AC	**0110**	**0210**
12 V DC	**0131**	**0231**
24 V DC	**0132**	**0232**
42 V DC	**0133**	**0233**
48 V DC	**0134**	**0234**
60 V DC	**0135**	**0235**
110 V DC	**0136**	**0236**
220 V DC	**0137**	**0237**

GHG 618 3105 RXXXX ← Auxiliary contacts

Two auxiliary contacts for mounting width 70 mm

	Auxiliary contacts (XXXX)		
Control voltage A1-A2	**1 NO / 1 NC**	**2 NC**	**2 NO**
24 V AC	**0101**	**0201**	**0301**
42 V AC	**0102**	**0202**	**0302**
48 V AC	**0103**	**0203**	**0303**
110 V AC	**0104**	**0204**	**0304**
230 V AC	**0105**	**0205**	**0305**
230 / 240 V AC	**0106**	**0206**	**0306**
380 / 400 V AC	**0107**	**0207**	**0307**
440 V AC	**0108**	**0208**	**0308**
24 V DC	**0111**	**0211**	**0311**
12 V DC	**0112**	**0212**	**0312**
48 V DC	**0114**	**0214**	**0314**
60 V DC	**0115**	**0215**	**0315**
110 V DC	**0116**	**0216**	**0316**
220 V DC	**0117**	**0217**	**0317**

Example

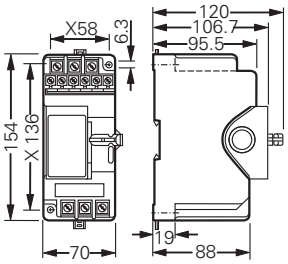
GHG 618 3105 RXXXX

GHG 618 3105 R **0206**

Air-break contactor coil voltage 230/240 V 2 NC

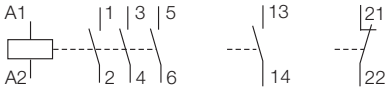
20 A 3-pole

Dimension drawing I Termination diagram

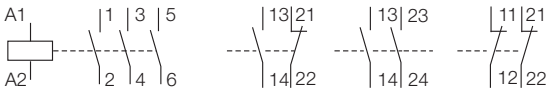


Module size 3 **X = fixing dimension**

3pol + 1 HSK



3pol + 2 HSK 2 Ö



ac = aux. contact

Dimensions in mm

3-pole

Technical data

		Motor starter for direct on-line starting with thermal release 4 kW
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–20 °C up to +110 °C IIC –55 °C up to +110 °C IIB
Application temperature[1)]		–20 °C up to +55 °C IIC –55 °C up to +55 °C IIB
Rated voltage	main contact	max. 690 V AC / 50-60 Hz
Control voltage		12 V up to 400 V AC / 12 V up to 230 V DC
Rated current	main contact aux. contact	max. 20 A max. 6 A
Rated making/breaking capacity accd. to EN 60947-4-1 AC-3		U_e 230 V / P_e 2.2 KW U_e 400 V / P_e 4 KW U_e 690 V / P_e 4 KW
Rated making/breaking capacity aux. contact accd. to EN 60947-4-1 AC-15		U_e 230 V / I_e 4 A
Back-up fuse		20 A gG
Connecting terminals	main contact aux. contact/ control A1-A2 signal contact	2 x 10 mm² fine wire with wire end sleeve/single wire 2 x 2.5 mm² fine wire with wire end sleeve/single wire 2 x 2.5 mm² fine wire with wire end sleeve/single wire
Weight		1.72 kg size 3
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Options		aux. contact

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

3-pole

Order code motor starter for direct on-line starting with thermal release 4 kW

GHG 618 3102 RXXYY

1. Rated current | 2. Coil voltage

Ordering details Type: 3-pole

1. Rated current	XX	2. Control voltage A1-A2	YY
Module size 3 (70 mm)			
0.11 A - 0.16 A	**01**	110 V AC	**04**
0.16 A - 0.23 A	**02**	230 V AC	**05**
0.23 A - 0.36 A	**03**	240 V AC	**06**
0.36 A - 0.54 A	**04**	120 V AC	**07**
0.54 A - 0.80 A	**05**	400 V AC	**08**
0.8 A - 1.20 A	**06**	440 V AC	**09**
1.2 A - 1.8 A	**07**	380 / 400 V AC	**10**
1.8 A - 2.6 A	**08**	24 V DC	**32**
2.6 A - 3.7 A	**09**	48 V DC	**34**
3.7 A - 5.5 A	**10**	110 V DC	**36**
5.5 A - 8.0 A	**11**		
8.0 A - 11.5 A	**12**		

Example

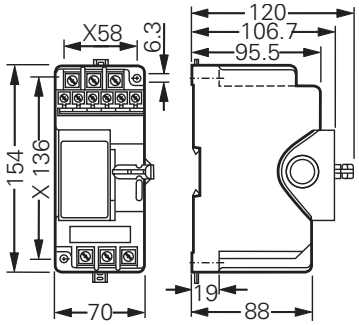
GHG 618 3102 RXXYY

GHG 618 31 02 R **08** **05**

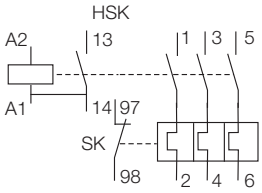
Rated current 230 V | Coil voltage 230 V

3-pole

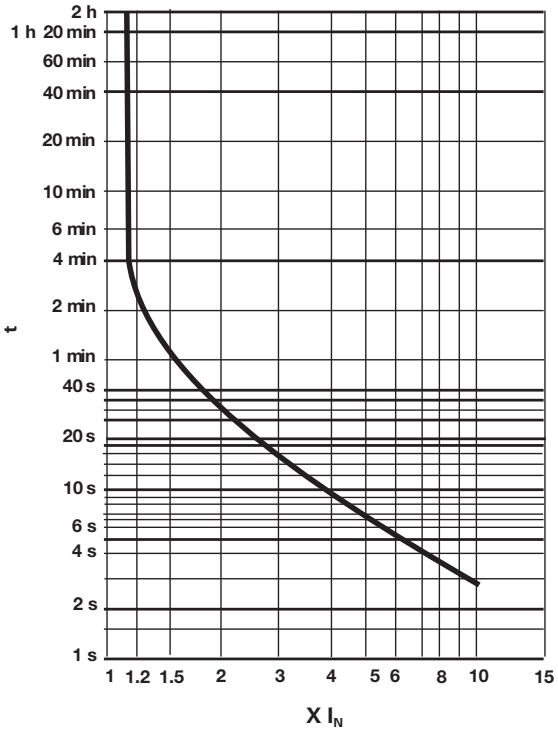
Dimension drawing I Termination diagram



Module size 3



Main contacts



ac = aux. contact
SK = signal contact

Dimensions in mm

20 A 2-pole

24 A 4-pole

32 A 4-pole

Technical data

		Installation contactor 20 A up to 32 A		
Marking accd. to 94/9/EC		⟨Ex⟩ II 2 G Ex de IIC/IIB Gb /⟨Ex⟩ I M2 Ex de I		
EC-Type Examination Certificate		PTB 98 ATEX 1087 U		
IECEx Certificate of Conformity		IECEx BKI 07.0038 U		
Marking accd. to IECEx		Ex de IIC		
Operating temperature range		–55 °C up to +110 °C (size 1, 2 - IIC) –20 °C up to +110 °C (size 3, 4 - IIC) –55 °C up to +110 °C (size 3, 4 - IIB)		
Application temperature[1)]		–20 °C up to +55 °C (size 3, 4 - IIC) –55 °C up to +55 °C (size 0, 1, 2 - IIC; size 3, 4 - IIB)		
Contactor		20 A	24 A	32 A
Rated voltage	main contact	max. 250 V	440 V	440 V
	aux. contact		440 V	440 V
	Control voltage A1-A2	24 V up to 400 V AC 50-60 Hz		
Rated current	main contact NC	20 A	24 A	32 A
	main contact NO	20 A	24 A	32 A
	aux. contact		6 A	6 A
Rated making/breaking capacity accd. to EN 60947-4-1				
	main contact AC-1 - U_e 230 V	P_e 4.0 kW	P_e 9.0 kW	P_e 15.2 kW
	main contact AC-1 - U_e 400 V	–	P_e 16 kW	P_e 26 kW
	main contact AC-3 - U_e 230 V	P_e 1.3 kW	P_e 2.2 kW	P_e 5.5 kW
	main contact AC-3 - U_e 400 V	–	P_e 4.0 kW	P_e 11 kW
	DC-3 1 current path U_e 60 V/230 V	–	I_e 4 A/0.2 A	I_e 5 A/0.3 A
	DC-3 2 current paths U_e 60 V/230 V	–	I_e 14 A/1.0 A	I_e 16 A/1.1 A
	DC-3 3 current paths U_e 60 V/230 V	–	I_e 24 A/4.0 A	I_e 34 A/4.5 A
	aux. contact up to U_e 230 V	–		I_e 4 A
	aux. contact up to U_e 400 V	–	I_e 3 A	I_e 3 A
Back-up fuse		20 A gL	35 A gL	63 A gL
Connecting terminals				
	main contact	2 x 10 mm² fine wire with wire end sleeve/single wire		
	aux. contact/Control A1-A2	2 x 2.5 mm² fine wire with wire end sleeve/single wire		
Weight		0.55 kg size 0	1.2 kg size 3	1.65 kg size 4
Enclosure material		glass-fibre reinforced polyester		
Enclosure colour		black		
Options		aux. contact		

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

20 A 2-pole

Installation contactor 20 A (Module size 0 - 35 mm)

Control voltage A1 - A2		Contacts	Order No.
50 Hz	60 Hz		
24 V	27 ... 28 V	2 NO	**GHG 618 0001 R0010**
24 V	27 ... 28 V	2 NC	**GHG 618 0001 R0011**
24 V	27 ... 28 V	1 NO / 1 NC	**GHG 618 0001 R0012**
42 V	48 V	2 NO	**GHG 618 0001 R0007**
42 V	48 V	2 NC	**GHG 618 0001 R0008**
42 V	48 V	1 NO / 1 NC	**GHG 618 0001 R0009**
110 V	125 ... 127 V	2 NO	**GHG 618 0001 R0004**
110 V	125 ... 127 V	2 NC	**GHG 618 0001 R0005**
110 V	125 ... 127 V	1 NO / 1 NC	**GHG 618 0001 R0006**
230 V	255 V	2 NO	**GHG 618 0001 R0001**
230 V	255 V	2 NC	**GHG 618 0001 R0002**
230 V	255 V	1 NO / 1 NC	**GHG 618 0001 R0003**
231 ... 244 V	240 V	2 NO	**GHG 618 0001 R0016**
231 ... 244 V	240 V	2 NC	**GHG 618 0001 R0017**
231 ... 244 V	240 V	1 NO / 1 NC	**GHG 618 0001 R0018**
400 V		2 NO	**GHG 618 0001 R0013**
400 V		2 NC	**GHG 618 0001 R0014**

24 A 4-pole

32 A 4-pole

GHG 618 3118 RXXXX

Coil voltage / Contacts

Ordering details Type: 24 A (Module size 3) - 70 mm)

Control voltage	Contacts HK (XXXX)			
AC 40 – 400 Hz/DC	**1 NO / 3 NC**	**2 NO / 2 NC**	**3 NO / 1 NC**	**4 NO**
24 V	**1301**	**2201**	**3101**	**4001**
42 V	**1302**	**2202**	**3102**	**4002**
48 V	**1303**	**2203**	**3103**	**4003**
110 ... 120 V	**1304**	**2204**	**3104**	**4004**
230 ... 240 V	**1306**	**2206**	**3106**	**4006**
400 ... 415 V	**1307**	**2207**	**3107**	**4007**

Control voltage	Contacts HK (XXXX)		
AC 40 – 400 Hz/DC	**1 NO / 2 NC + 1 ac**	**2 NO / 1 NC + 1 ac**	**3 NO + 1 ac**
12 V	**1309**	**2209**	**3109**
24 V	**1311**	**2211**	**3111**
110 ... 120 V	**1314**	**2214**	**3114**
230 ... 240 V	**1316**	**2216**	**3116**
400 ... 415 V	**1317**	**2217**	**3117**

Example

GHG 618 3118 RXXXX

GHG 618 31 **18** R **2206**

Installation contactor 24 A Coil voltage 230 - 240 V 2NO / 2NC

GHG 618 4109 RYYYY

Coil voltage / Contacts

Ordering details Type: 32 A (Module size 4 - 105 mm)

Control voltage	Contacts HK (XXXX)		
AC 40 – 400 Hz/DC	**4 x NO**	**4 x NO + 1NC (ac)**	**4 x NO + 1NO (ac)**
24 V	**4001**	**4011**	**4101**
48 V	**4003**	**4013**	**4103**
110 V	**4004**	**4014**	**4104**
240 V	**4005**	**4015**	**4105**
230 V	**4006**	**4016**	**4106**
400 V	**4007**	**4017**	**4107**
415 V	**4008**	**4018**	**4108**

Example

GHG 618 41 09 RYYYY

GHG 618 41 **09** R **4015**

Installation contactor 32 A Coil voltage 240 V 4NO + ac 1NC

HK = main contact

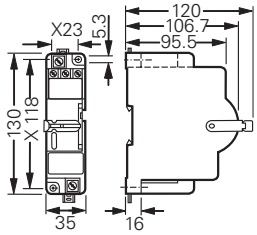
ac = aux. contact

32 A 4-pole

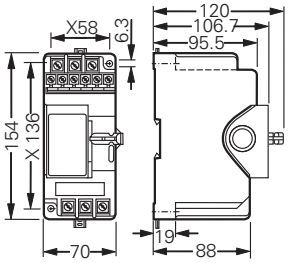
24 A 4-pole

20 A 2-pole

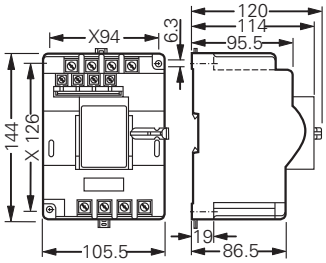
Dimension drawing I Termination diagram



Module size 0

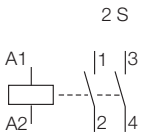


Module size 3

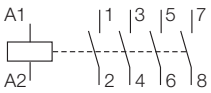


Module size 4

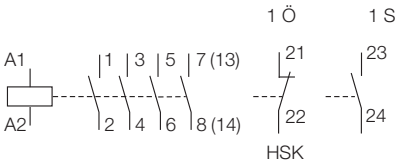
X = fixing dimension



Installation contactor 20 A



Installation contactor 24 A



Installation contactor 32 A

Ac = aux. contact

Dimensions in mm

Current impulse switch

Technical data

		Current impulse switch up to 16 A
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–55 °C up to +55 °C
Application temperature[1)]		–55 °C up to +110 °C
Rated voltage	main contact control A1-A2	400 V AC (+ 10 %) 230 V AC
Rated current	main contact	16 A
Rated making/breaking capacity accd. to EN 60947-4-1 AC-3		U_e 250 V / I_e 16 A U_e 400 V / I_e 10 A
Back-up fuse		16 A gG
Connecting terminals	main contact control contact	2 x 10 mm² fine wire with wire end sleeve/single wire 2 x 2.5 mm² fine wire with wire end sleeve/single wire
Weight		0.95 kg size 2
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black

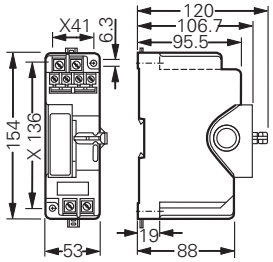
[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

Current impulse switch

Ordering details

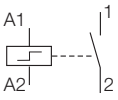
Rated current	Contact	Coil voltage	Mounting width	Order No.
16 A	1 NO	230 V AC	53 mm	**GHG 618 0002 R0004**
16 A	2 NO	230 V AC	53 mm	**GHG 618 0002 R0008**
16 A	1 NO + 1 NC	230 V AC	53 mm	**GHG 618 0002 R0012**

Dimension drawing I Termination diagram

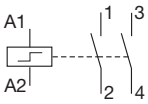


Module size 2

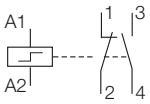
X = fixing dimension



1 NO



2 NO



1 NO + 1 NC

Termination diagram current impulse switch

Dimensions in mm

Manual motor starter

Technical data

		Manual motor starter 0.1 A up to 25 A
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 99 ATEX 1007 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–20 °C up to +95 °C
Application temperature[1)]		–20 °C up to +55 °C (IIC)
Rated voltage	main contact aux. contact	690 V AC, 50/60 Hz, 440 V DC 110 V; 230 V; 400 V; 500 V 50/60 Hz
Rated current	main contact	25 A
Rated current	aux. contact	230 V/2 A 400 V/0.5 A
Rated making/breaking capacity accd. to EN 60947-4-1 AC-3		U_e 690 V / I_e 25 A
Thermal tripping characteristic		T II
Tripping time at 6x Ie		≥ 5 sec.
Back-up fuse	main contact aux. contact	see table not required
Connecting terminals	main contact aux. contact	2 x max. 10 mm² 2 x 0.75 - 4 mm²
Dimensions (L x W x H)		Mounting width 106 mm
Weight		1.3 kg
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Mounting		35 mm top hat rail (DIN-rail)
Options		aux. contact

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account.
See also pages 2.6.37.

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	
	Ics	gG, aM	Ics	gG, aM	Ics	gG, aM	Ics	gG, aM
0.1 ... 0.16 A	short circuit proof - no bach-up fuse required up to I_{CC} = 100 kA							
1.0 ... 1.6 A								
1.6 ... 2.5 A							40 kA	25 A
2.5 ... 4.0 A					60 kA	35/40 A	10 kA	40 A
4.0 ... 6.3 A					40 kA	50 A	7 kA	40 A
6.3 ... 9.0 A					30 kA	80 A	5 kA	50 A
9.0 ... 12.5 A			75 kA	80 A	27 kA	80 A	4.5 kA	50 A
12.5 ... 16.0 A			60 kA	100 A	25 kA	100 A	4.0 kA	50 A
16.0 ... 20.0 A			55 kA	100 A	22 kA	100 A	3.5 kA	50 A
20.0 ... 25.0 A	50 kA	125 A	50 kA	125 A	20 kA	125 A	3.0 kA	50 A

Manual motor starter

Order code manual motor starter 0.1 A up to 25 A

GHG 635 XXXX RYYYY

1. Auxiliary contacts

2. Setting range

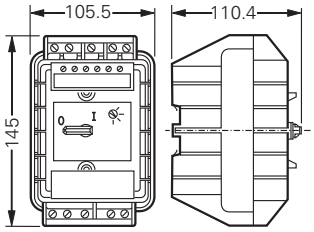
Ordering details

Setting range	Undervoltage trip (UT)	Auxiliary contacts XXXX without ac	1NO / 1NC ac	2NO ac	Setting range YYYY
0.10 – 0.16 A	–	**1031**	**1032**	**1033**	**0001**
0.16 – 0.25 A	–	**1031**	**1032**	**1033**	**0002**
0.25 – 0.40 A	–	**1031**	**1032**	**1033**	**0003**
0.40 – 0.63 A	–	**1031**	**1032**	**1033**	**0004**
0.63 – 1.00 A	–	**1031**	**1032**	**1033**	**0005**
1.00 – 1.60 A	–	**1031**	**1032**	**1033**	**0006**
1.60 – 2.50 A	–	**1031**	**1032**	**1033**	**0007**
2.50 – 4.00 A	–	**1031**	**1032**	**1033**	**0008**
4.00 – 6.30 A	–	**1031**	**1032**	**1033**	**0009**
6.30 – 9.00 A	–	**1031**	**1032**	**1033**	**0010**
9.00 – 12.50 A	–	**1031**	**1032**	**1033**	**0011**
12.50 – 16.00 A	–	**1031**	**1032**	**1033**	**0012**
16.00 – 20.00 A	–	**1031**	**1032**	**1033**	**0013**
20.00 – 25.00 A	–	**1031**	**1032**	**1033**	**0014**
0.10 – 0.16 A	230 V	**1031**	**1032**	**1033**	**0101**
0.16 – 0.25 A	230 V	**1031**	**1032**	**1033**	**0102**
0.25 – 0.40 A	230 V	**1031**	**1032**	**1033**	**0103**
0.40 – 0.63 A	230 V	**1031**	**1032**	**1033**	**0104**
0.63 – 1.00 A	230 V	**1031**	**1032**	**1033**	**0105**
1.00 – 1.60 A	230 V	**1031**	**1032**	**1033**	**0106**
1.60 – 2.50 A	230 V	**1031**	**1032**	**1033**	**0107**
2.50 – 4.00 A	230 V	**1031**	**1032**	**1033**	**0108**
4.00 – 6.30 A	230 V	**1031**	**1032**	**1033**	**0109**
6.30 – 9.00 A	230 V	**1031**	**1032**	**1033**	**0110**
9.00 – 12.50 A	230 V	**1031**	**1032**	**1033**	**0111**
16.00 – 20.00 A	230 V	**1031**	**1032**	**1033**	**0112**
20.00 – 25.00 A	230 V	**1031**	**1032**	**1033**	**0113**
0.10 – 0.16 A	400 V	**1031**	**1032**	**1033**	**0201**
0.16 – 0.25 A	400 V	**1031**	**1032**	**1033**	**0202**
0.25 – 0.40 A	400 V	**1031**	**1032**	**1033**	**0203**
2.50 – 4.00 A	400 V	**1031**	**1032**	**1033**	**0208**
4.00 – 6.30 A	400 V	**1031**	**1032**	**1033**	**0209**
6.30 – 9.00 A	400 V	**1031**	**1032**	**1033**	**0210**
9.00 – 12.50 A	400 V	**1031**	**1032**	**1033**	**0211**
16.00 – 20.00 A	400 V	**1031**	**1032**	**1033**	**0212**
20.00 – 25.00 A	400 V	**1031**	**1032**	**1033**	**0213**

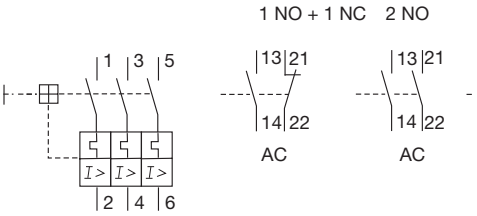
ac = aux. contact

Manual motor starter

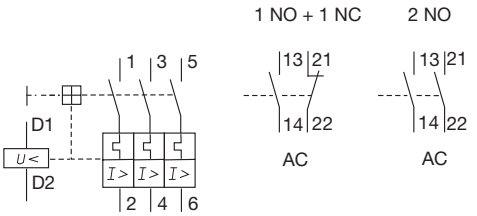
Dimension drawing I Termination diagram



Manual motor starter 25 A



without undervoltage trip



with undervoltage trip

ac = aux. contact

Dimensions in mm

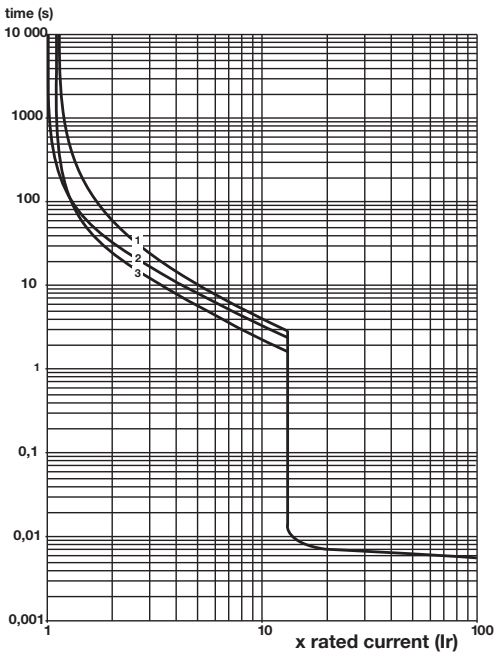
Thermal overcurrent relay

Technical data

		Thermal overcurrent relay
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–20 °C up to +110 °C IIC
		–55 °C up to +110 °C IIB
Application temperature[1)]		–20 °C up to +55 °C IIC
		–55 °C up to +55 °C IIB
Rated voltage	main contact	690 V AC, 50/60 Hz
Tripping current	main contact	Thermal tripping with phase failure function, 0.1 - 16 A, manual reset
Rated voltage	aux. contact	275 V AC
Rated current	aux. contact	6 A
Connecting terminals	main contact	2 x 10 mm² fine wire with wire end sleeve/single wire
	aux. contact	2 x 2.5 mm² fine wire with wire end sleeve/single wire
Dimensions (L x W x H)		Mounting width 70 mm
Weight		1.1 kg size 3
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

Tripping characteristic



Mean tripping time at 20 °C in relationship to the multible rated current

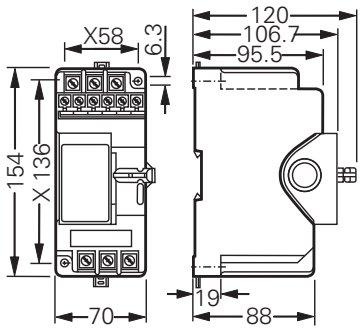
1 3-pole load at cold condition
2 2-pole load at cold condition
3 3-pole load at warm condition

Thermal overcurrent relay

Ordering details thermal overcurrent relay

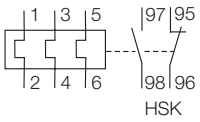
Tripping current	Order No.
0.1 A - 0.16 A	**GHG 618 3103 R0012**
0.16 A - 0.23 A	**GHG 618 3103 R0001**
0.23 A - 0.36 A	**GHG 618 3103 R0002**
0.36 A - 0.54 A	**GHG 618 3103 R0003**
0.54 A - 0.8 A	**GHG 618 3103 R0004**
0.8 A - 1.2 A	**GHG 618 3103 R0005**
1.2 A - 1.8 A	**GHG 618 3103 R0006**
1.8 A - 2.6 A	**GHG 618 3103 R0007**
2.6 A - 3.7 A	**GHG 618 3103 R0008**
3.7 A - 5.5 A	**GHG 618 3103 R0009**
5.5 A - 8.0 A	**GHG 618 3103 R0010**
8.0 A - 11.5 A	**GHG 618 3103 R0011**

Dimension drawing I Termination diagram



Module size 3

X = fixing dimension



ac = aux. contact

Dimensions in mm

Overvoltage arrester

Technical data

	Overvoltage arrester
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I
EC-Type Examination Certificate	PTB 98 ATEX 1087 U
IECEx Certificate of Conformity	IECEx BKI 07.0038 U
Marking accd. to IECEx	Ex de IIC
Operating temperature range	–55 °C up to +55 °C
Application temperature[1)]	–55 °C up to +110 °C
Rated voltage U_n	275 V
Rated discharge surge current I_n	20 kA
Rated forward surge current I_{max}	< 40 kA
Response time t_A	≤ 25 ns
Voltage protection level residual voltage U_p	1.25 KV
Short-circuit protection at max. back-up fuse	25 kA eff
Back-up fuse	125 A (gG / gL or 63 A MCB with B/C-Characteristic)
Connecting terminals	2 x 10 mm² fine wire with wire end sleeve/single wire
Dimensions (L x W x H)	mounting width 35 mm
Weight	0.52 kg size 1
Enclosure material	glass-fibre reinforced polyester
Enclosure colour	black
Options	tripping indication in inspection window

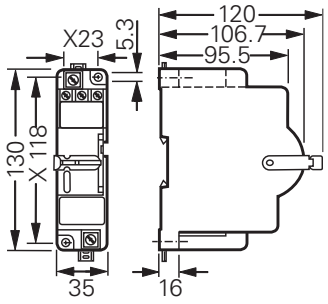
[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

Overvoltage arrester

Ordering details overvoltage arrester

Content	Mounting width	Order No.
Type: 1-pole version, optional with tripping indication		
1-pole overvoltage arrester	35 mm	**GHG 612 1003 R0001**

Dimension drawing I Termination diagram



Module size 1

X = fixing dimension

Dimensions in mm

Star-delta timer relay

Technical data

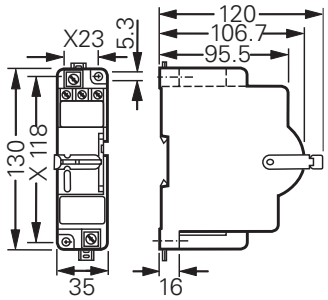
		Star-delta timer relay
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–55 °C up to +55 °C
Application temperature[1)]		–55 °C up to +110 °C
Rated voltage	main contact control A1-A2	max. 250 V 220 V - 240 V AC
Rated continuous Ith		3 A
Power dissipation per pole		2 W
Rated switching capacity AC-15		230 V/3 A
Tripping time		1.5 s up to 30 s continuously externally adjustable
Connecting terminals	main contact aux. contact/ control A1-A2	2 x 10 mm² fine wire with wire end sleeve/single wire 2 x 2.5 mm² fine wire with wire end sleeve/single wire
Dimensions (L x W x H)		Mounting width 35 mm
Weight		0.53 kg size 0
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Options		aux. contact

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

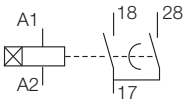
Ordering details

Content	Rated current	Response time	Mounting width	Order No.
Type: 1-pole Equipped with 1 C/O				
1-pole	3 A	1.5 s - 30 s	35 mm	**GHG 618 1102 R 0001**

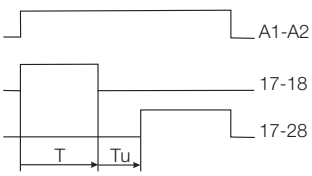
Dimension drawing I Termination diagram



Module size 1



Termination diagram Star-delta timer relay



Characteristic

Dimensions in mm

Multi-function relay

Technical data

		Multi-function relay
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex de IIC/IIB Gb / Ⓔx I M2 Ex de I
EC-Type Examination Certificate		PTB 98 ATEX 1087 U
IECEx Certificate of Conformity		IECEx BKI 07.0038 U
Marking accd. to IECEx		Ex de IIC
Operating temperature range		–20 °C up to +110 °C (IIC) –55 °C up to +110 °C (IIB)
Application temperature[1)]		–20 °C up to +60 °C (IIC) –55 °C up to +60 °C (IIB)
Rated voltage		max. 400 V AC (+10 %)
Control voltage		24 V AC up to 400 V AC or 24 V DC up to 240 V DC
Rated current		6 A
Power dissipation per pole		2 W
Rated switching capacity AC-11		440 V/3 A
Rated switching capacity DC-22		24 V / 1 A; 60 V / 0.35 A; 220 V / 0.20 A
Connecting terminals	main contact aux. contact/ control A1-A2	2 x 10 mm² 2 x 2.5 mm²
Dimensions (L x W x H)		Mounting width 70 mm
Weight		1.26 kg, size 3
Enclosure material		glass-fibre reinforced polyester
Enclosure colour		black
Options		Control

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

Order code multi-function relay

GHG 618 2910 RXXYY

1. Control function | **2. Response time/time range**

1. Control function

Control function	XX
delayed response	**11**
delayed OFF response	**12**
delayed ON and OFF response	**16**
impulse ON	**21**
impulse OFF	**22**
flashing	**42**
pulsing	**81**
pulse shaper	**82**

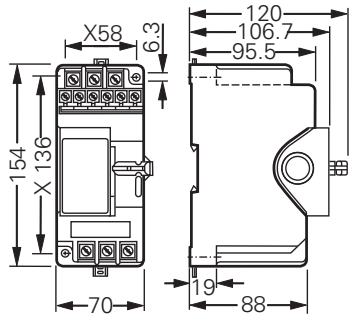
2. Response time/time range

Response time/time range	YY
0.15 min - 3 min	**01**
3 s - 60 s	**02**
0.5 s - 10 s	**03**
0.15 s - 3 s	**04**
0.05 s - 1 s	**05**
0.5 min - 10 min	**06**
3 min - 60 min	**07**
0.15 h - 3 h	**08**
0.5 h - 10 h	**09**
3 h - 60 h	10

Note: The time setting within the time ranges is performed via potentiometer 10 kΩ (GHG 410 1901 R 0194) to be connected externally. To be ordered separately

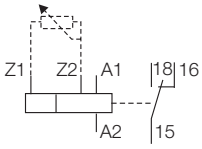
Multi-function relay

Dimension drawing I Termination diagram I Function diagram

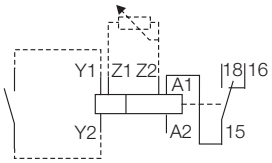


Module size 2 **X = fixing dimension**

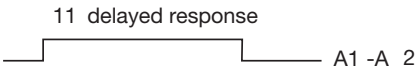
Termination diagram Multi-function relay

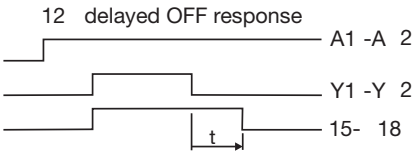


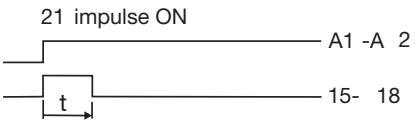
Contacts for function 11, 21, 42 and 81

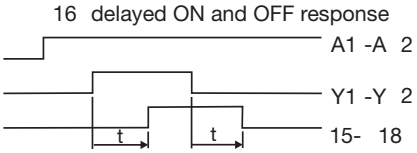


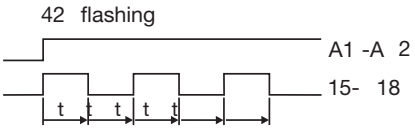
Contacts for function 12, 16, 22 and 82

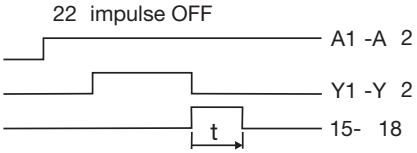


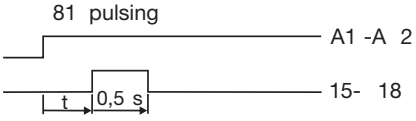


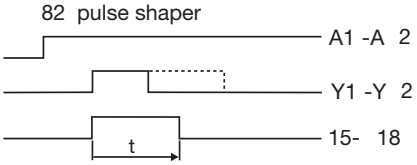












Dimensions in mm

Ex-e transformer

Technical data

		Ex-e isolating transformer
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex e IIC Gb
EC-Type Examination Certificate		BVS 11 ATEX E 195 U
Application temperature		–55 °C up to +40 °C[1]
IECEx Certificate of Conformity		IECEx BVS 11.0087U
Marking accd. to IECEx		Ex e IIC Gb
Operating temperature range		–55 °C up to +130 °C
Application temperature[1]		–55 °C up to +55 °C
Rated voltage	primary secondary	110 V up to 690 V - see ordering details 12 V up to 400 V - see ordering details
Frequency		50 – 60 Hz
Power consumption		100 VA up to 1200 VA
Short-circuit voltage		4.2 %
Duty type		S1
Thermal class		E
Back-up fuse		max. 1.5 x of secondary rated current
Connecting terminals		2.5 – 16 mm², option direct wire connections
Protection class		I
Degree of protection accd. to EN 60529		[2]

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.37.

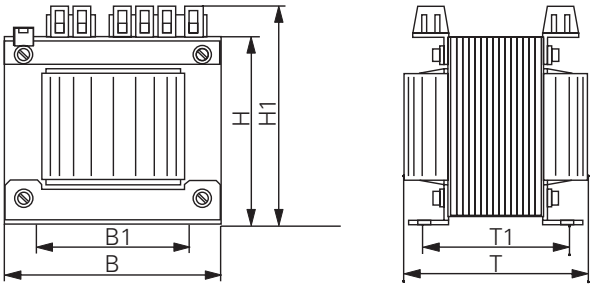
[2] The transformer may only be mounted in a certified enclosure with minimum degree of protection IP54.

Ordering details

Type	Prim. / sec.	Max. input power	Order No.
Ex-e isolating transformer			
Ex-e transformer	110 V / 24 V	100 VA	**GHG 410 1992 R0001**
Ex-e transformer	220 V / 24 V	100 VA	**GHG 410 1992 R0002**
Ex-e transformer	230 V / 24 V	100 VA	**GHG 410 1992 R0003**
Ex-e transformer	230 V / 48 V	100 VA	**GHG 410 1992 R0004**
Ex-e transformer	400 V / 24 V	100 VA	**GHG 410 1992 R0005**
Ex-e transformer	500 V / 24 V	100 VA	**GHG 410 1992 R0006**
Ex-e transformer	230 V / 230 V	100 VA	**GHG 410 1992 R0007**
Ex-e transformer	400 V / 230 V	100 VA	**GHG 410 1992 R0008**
Ex-e transformer	500 V / 120 V	100 VA	**GHG 410 1992 R0009**
Ex-e transformer	230 V / 24 V	200 VA	**GHG 410 1992 R0010**
Ex-e transformer	400 V / 24 V	200 VA	**GHG 410 1992 R0011**
Ex-e transformer	400 V / 230 V	200 VA	**GHG 410 1992 R0012**
Ex-e transformer	230 V / 24 V	400 VA	**GHG 410 1992 R0013**
Ex-e transformer	400 V / 24 V	400 VA	**GHG 410 1992 R0014**
Ex-e transformer	400 V / 230 V	400 VA	**GHG 410 1992 R0015**
Ex-e transformer	230 V / 24 V	550 VA	**GHG 410 1992 R0016**
Ex-e transformer	400 V / 24 V	550 VA	**GHG 410 1992 R0017**
Ex-e transformer	400 V / 230 V	550 VA	**GHG 410 1992 R0018**
Ex-e transformer	230 V / 24 V	1200 VA	**GHG 410 1992 R0019**
Ex-e transformer	400 V / 24 V	1200 VA	**GHG 410 1992 R0020**
Ex-e transformer	400 V / 230 V	1200 VA	**GHG 410 1992 R0021**

Ex-e transformer

Dimension drawing



Ex-e transformer

Power (VA)	100	200	400	550	1200
Dimensions (mm)					
H	110	122	132	145	161
H1	126	136	148	161	181
H2	146	156	168	181	201
B	105	120	135	150	174
B1	85	90	105	12	140
T	80	102	128	150	170
T1	65	81	108	125	145

Dimensions in mm

Size 1

Size 2

Size 3

Size 4

Technical data

	GRP Empty enclosures
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex e IIC Gb Ex de IIC T6, T5, T4 / Ⓔx II 2 D Ex tb IIIC Db Ex tD A21 IP66 T80 °C, T95 °C[1]
EC-Type Examination Certificate	PTB 99 ATEX 3118U
IECEx Certificate of Conformity	IECEx-PTB11.0030U
Marking accd. to IECEx	Ex e IIC Gb / Ex tb IIIC Db
Operating temperature range	–20 °C up to +95 °C –55 °C up to +95 °C
Permissible ambient temperature [1]	–20 °C up to +40 °C –55 °C up to +55 °C (option)
Rated voltage	690 V
Rated current	315 A
Protection class	I / II depending on the flange type and glands
Terminal cross section	up to 300 mm²
Cable gland	acc. to customer specification, max. M63
Degree of protection accd. to EN 60529	IP66
Weight	see ordering details
Enclosure material	glass-fibre reinforced polyester
Enclosure colour	black

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

Ordering details empty enclosures plastic version

Content	Mounting width	Weight approx.	Order No. / Order code [2]
Size 1: 1 mounting area 106 mm			
Cover closed	106 mm	1.5 kg	**GHG 600 0101 R0001**
Cover cut-out with small actuating flap for GHG 61	106 mm	1.9 kg	**GEH 001 01 61** [2]
Cover cut-out with small actuating flap for GHG 62	106 mm	1.9 kg	**GEH 001 01 62** [2]
Size 2: 1 mounting area 213 mm			
Cover closed	213 mm	2.5 kg	**GHG 600 0201 R0001**
Cover cut-out with 1 actuating flap for GHG 61	213 mm	3.2 kg	**GEH 002 01 61** [2]
Cover cut-out with 1 actuating flap for GHG 62	213 mm	3.2 kg	**GEH 002 01 62** [2]
Cover raised for insertion of main switch = 80 A		3.3 kg	**GHG 600 0301 R0001**
Size 3: 2 mounting areas 213 mm			
Cover closed	2 x 213 mm	4.5 kg	**GHG 600 0401 R0001**
Cover cut-out with 1 actuating flap for GHG 61	2 x 213 mm	5.2 kg	**GEH 003 01 61** [2]
Cover cut-out with 1 actuating flap for GHG 62	2 x 213 mm	5.2 kg	**GEH 003 01 62** [2]
Cover cut-out with 2 actuating flaps for GHG 61	2 x 213 mm	5.9 kg	**GEH 003 02 61** [2]
Cover cut-out with 2 actuating flaps for GHG 62	2 x 213 mm	5.9 kg	**GEH 003 02 62** [2]
Cover with 1 actuating flap and main switch ≤ 40 A	1 x 213 mm	6.2 kg	**GEH 003 03** [2]
Cover raised for insertion of main switch ≥ 80 A up to 180 A		5.5 kg	**GHG 600 0501 R0001**
Size 4: 3 mounting areas 213 mm			
Cover closed	3 x 213 mm	5.5 kg	**GHG 600 0601 R0001**
Cover cut-out with 1 actuating flap for GHG 61	3 x 213 mm	6.2 kg	**GEH 004 01 61** [2]
Cover cut-out with 1 actuating flap for GHG 62	3 x 213 mm	6.2 kg	**GEH 004 01 62** [2]
Cover cut-out with 2 actuating flaps for GHG 61	3 x 213 mm	6.9 kg	**GEH 004 02 61** [2]
Cover cut-out with 2 actuating flaps for GHG 62	3 x 213 mm	6.9 kg	**GEH 004 02 62** [2]
Cover cut-out with 3 actuating flaps for GHG 61	3 x 213 mm	7.6 kg	**GEH 004 03 61** [2]
Cover cut-out with 3 actuating flaps for GHG 62	3 x 213 mm	7.6 kg	**GEH 004 03 62** [2]
Cover with 2 actuating flaps and main switch ≤ 40 A	1 x 213 mm	8.1 kg	**GEH 004 04** [2]

[2] "GEH" is an order code only

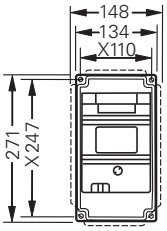
Size 4

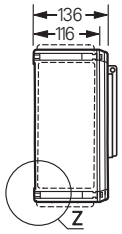
Size 3

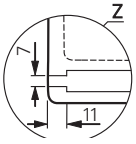
Size 2

Size 1

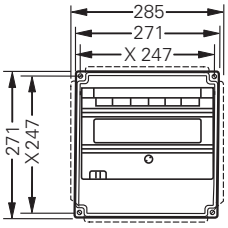
Dimension drawing

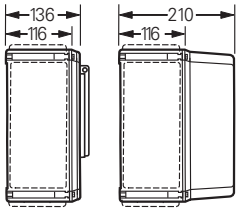




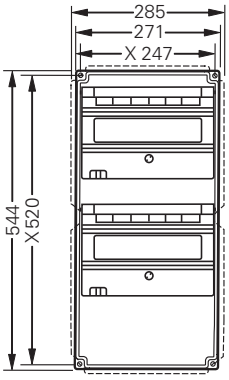


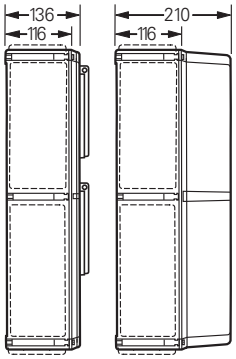
Size 1



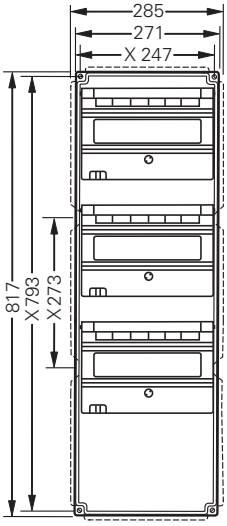


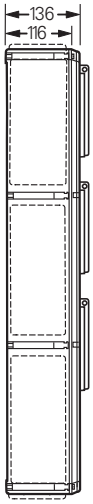
Size 2





Size 3





Size 4

X = fixing dimension

6

Dimensions in mm

Size 1

Size 2

Size 3

Size 4

Technical data

	Metal empty enclosure
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex e IIC Gb Ex de IIC T6, T5, T4 / Ⓔx II 2 D Ex tb IIIC Db Ex tD A21 IP66 T80 °C, T95 °C[1)]
EC-Type Examination Certificate	PTB 99 ATEX 3118U
IECEx Certificate of Conformity	IECEx-PTB11.0030U
Marking accd. to IECEx	Ex e IIC Gb Ex tb IIIC Db
Operating temperature range	–20 °C up to +95 °C –55 °C up to +95 °C
Permissible ambient temperature [1)]	–20 °C up to +40 °C –55 °C up to +55 °C (option)
Rated voltage	690 V
Rated current	315 A
Protection class	I
Terminal cross section	up to 300 mm²
Cable gland	acc. to customer specification
Degree of protection accd. to EN 60529	IP66
Enclosure material	Stainless steel AISI 316 L / sheet steel powder coated
Enclosure colour	electro-polished / grey

[1)] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

Ordering details empty enclosure stainless steel

Content	Mounting width	Weight approx.	Order code
Size 1: 1 mounting area 106 mm			
Cover closed	106 mm	3.5 kg	**GEH 100 00**
Cover cut-out with small actuating flap for GHG 61	106 mm	3.8 kg	**GEH 100 01 61**
Cover cut-out with small actuating flap for GHG 62	106 mm	3.8 kg	**GEH 100 01 62**
Size 2: 1 mounting area 213 mm			
Cover closed	213 mm	7.5 kg	**GEH 200 00**
Cover cut-out with 1 actuating flap for GHG 61	213 mm	8.1 kg	**GEH 200 01 61**
Cover cut-out with 1 actuating flap for GHG 62	213 mm	8.1 kg	**GEH 200 01 62**
Size 3: 2 mounting areas 213 mm			
Cover closed	2 x 213 mm	11.5 kg	**GEH 300 00**
Cover cut-out with 1 actuating flap for GHG 61	2 x 213 mm	12.1 kg	**GEH 300 01 61**
Cover cut-out with 1 actuating flap for GHG 62	2 x 213 mm	12.1 kg	**GEH 300 01 62**
Cover cut-out with 2 actuating flaps for GHG 61	2 x 213 mm	12.7 kg	**GEH 300 02 61**
Cover cut-out with 2 actuating flaps for GHG 62	2 x 213 mm	12.7 kg	**GEH 300 02 62**
Cover with 1 actuating flap and main switch ≤ 40 A	1 x 213 mm	12.9 kg	**GEH 300 03**
Size 4: 3 mounting areas 213 mm			
Cover closed	3 x 213 mm	16.5 kg	**GEH 400 00**
Cover cut-out with 1 actuating flap for GHG 61	3 x 213 mm	17.1 kg	**GEH 400 01 61**
Cover cut-out with 1 actuating flap for GHG 62	3 x 213 mm	17.1 kg	**GEH 400 01 62**
Cover cut-out with 2 actuating flaps for GHG 61	3 x 213 mm	17.7 kg	**GEH 400 02 61**
Cover cut-out with 2 actuating flaps for GHG 62	3 x 213 mm	17.7 kg	**GEH 400 02 62**
Cover cut-out with 3 actuating flaps for GHG 61	3 x 213 mm	18.4 kg	**GEH 400 03 61**
Cover cut-out with 3 actuating flaps for GHG 62	3 x 213 mm	18.4 kg	**GEH 400 03 62**
Cover with 2 actuating flaps and main switch ≤ 40 A	2 x 213 mm	18.6 kg	**GEH 400 04**

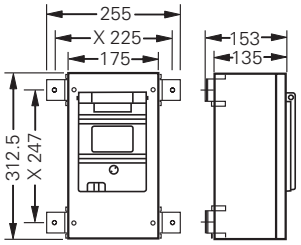
Size 4

Size 3

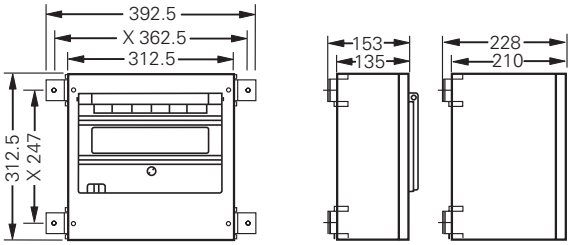
Size 2

Size 1

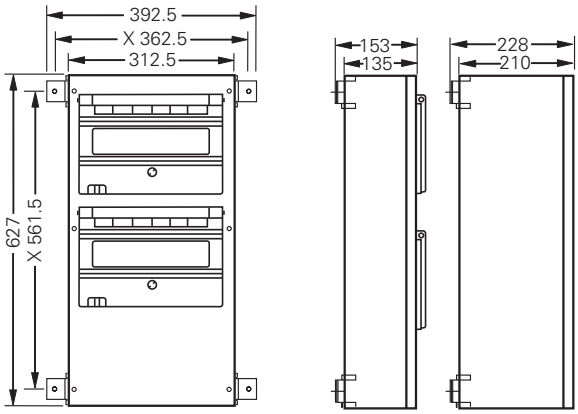
Dimension drawing



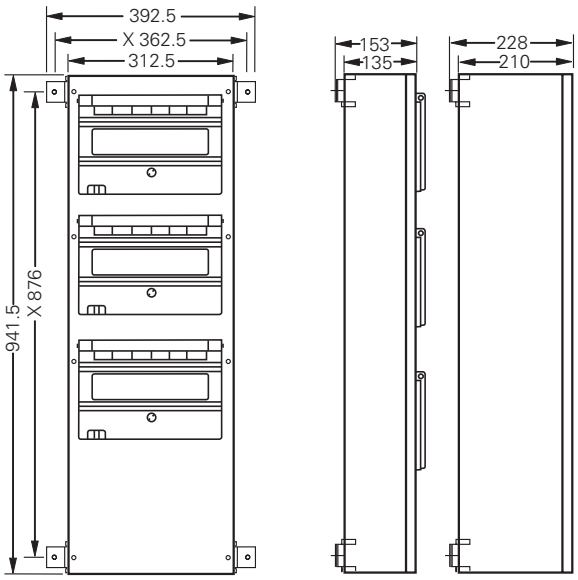
Size 1



Size 2



Size 3



Size 4

X = fixing dimension

Dimensions in mm

Size 1

Size 2

Technical data

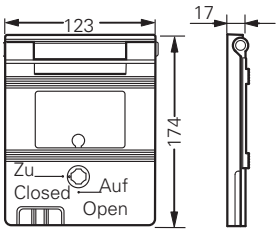
	Actuating flap
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex e IIC Gb / Ⓔx Ex tb IIIC Db IP65
EC-Type Examination Certificate	PTB 99 ATEX 3107U
Operating temperature range	–55 °C up to +60 °C
Application temperature [1]	–55 °C up to +60 °C
IECEx Certificate of Conformity	IECEx-PTB11.0020U
Marking accd. to IECEx	Ex e IIC Gb Ex tb IIIC Db IP65
Degree of protection accd. to EN 60529	IP66
Weight	flap size 1 0.48 kg flap size 1 0.78 kg

Ordering details

Content	Mounting width	Weight approx.	Order No.
Size 1: 1 mounting area 106 mm for GHG 61, lockable	123 mm	0.48 kg	**GHG 610 1954 R0003**
Size 1: 1 mounting area 106 mm for GHG 61 + 62, lockable	123 mm	0.48 kg	**GHG 610 1954 R0013**
Size 2: 1 mounting area 213 mm for GHG 61, lockable	245 mm	0.78 kg	**GHG 610 1954 R0001**
Size 2: 1 mounting area 213 mm for GHG 61 + 62, lockable	245 mm	0.78 kg	**GHG 610 1954 R0011**

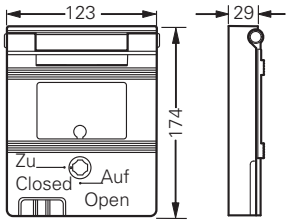
Dimension drawing

for GHG 61



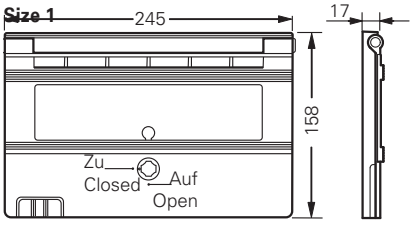
Size 1

for GHG 61 + 62

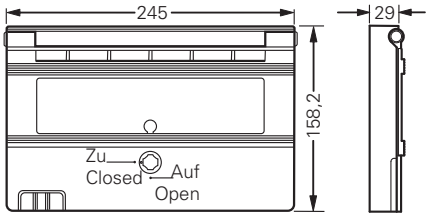


Size 1

Size 1

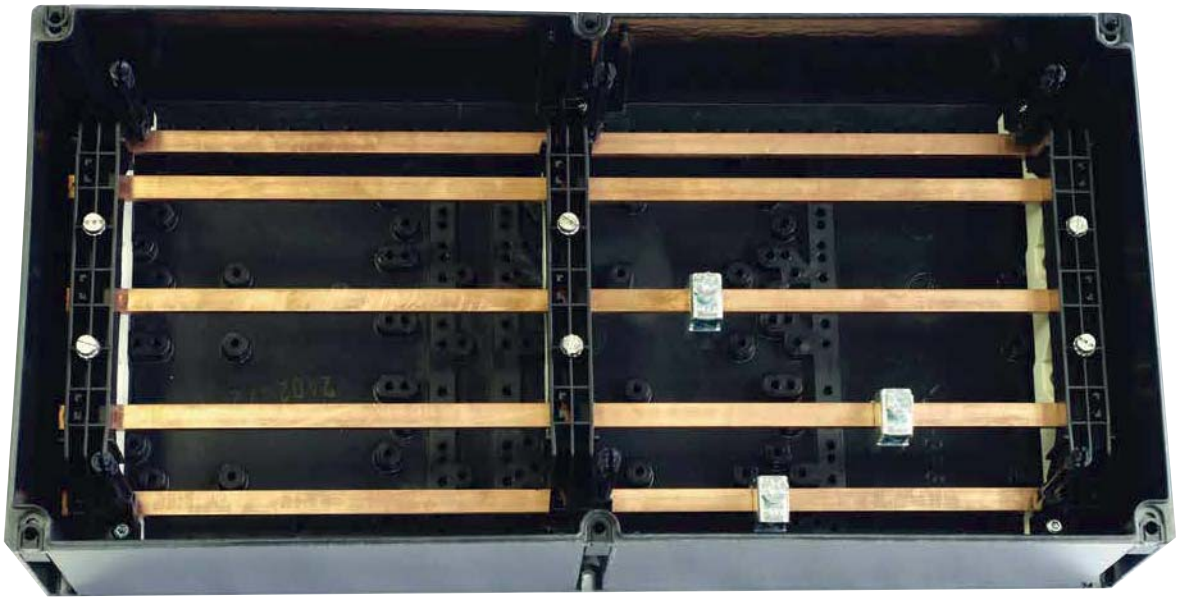


Size 2



Size 2

Dimensions in mm



Bus-bar system GHG 758:
The bus-bar system GHG 758 for 250 A and 315 A in Ex-e technology is a fast and economic assembly system for efficient distribution of electrical energy for zone 1.

Robust design
Thanks to the high ambient temperature range of -55 to + 55 ° C, this mounting system is ideal for applications under extreme conditions. Due to the use of high quality materials, this device has a high short-circuit rating and long durability.

Easy and economically to install
Fast and economic assembly using undrilled clamp technology for the connection cables

- **For use in areas with extreme ambient conditions**
- **High short-circuit rating and long durability**
- **Greater length of usable bus-bar rail (up to 6300 mm)**
- **Optional with removable plastic cover**
- **Fast and economic assembly**

Bus bar in plastic encl.

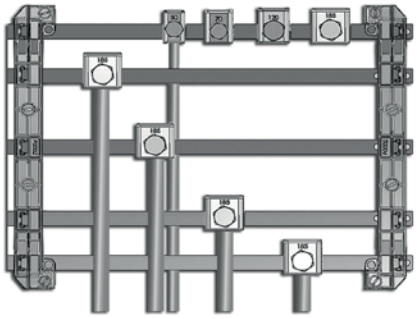
Technical data

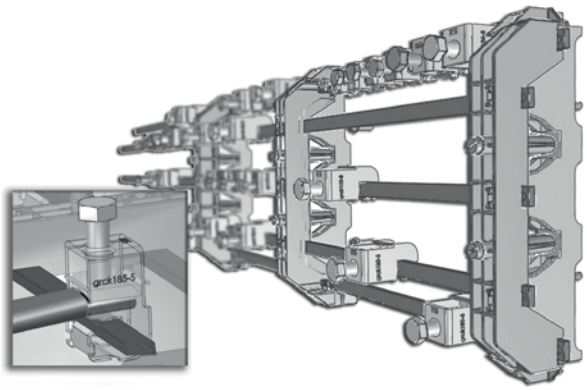
	Bus-bar system
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex e IIC Gb Ⓔx II 2 G Ex eb IIC
EC-Type Examination Certificate	BVS 11 ATEX E 068 U
IECEx Certificate of Conformity	IECEx BVS11.0048U
Marking accd. to IECEx	Ex e IIC Gb
Permissible ambient temperature	-55 °C up to +55 °C
Rated voltage	690 V
Terminal cross section	1.5 mm² up to 185 mm²
Maximum length	6300 mm

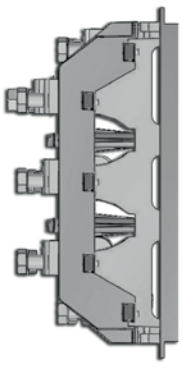
	250 A for plastic enclosures
Rated current	250 A
Rated short-time current	4 kA, other values on request
Rated short-circuit current	35 kA

	315 A for metallic enclosures
Rated current	315 A
Rated short-time current	9 kA, other values on request
Rated short-circuit current	47 kA

Drawings

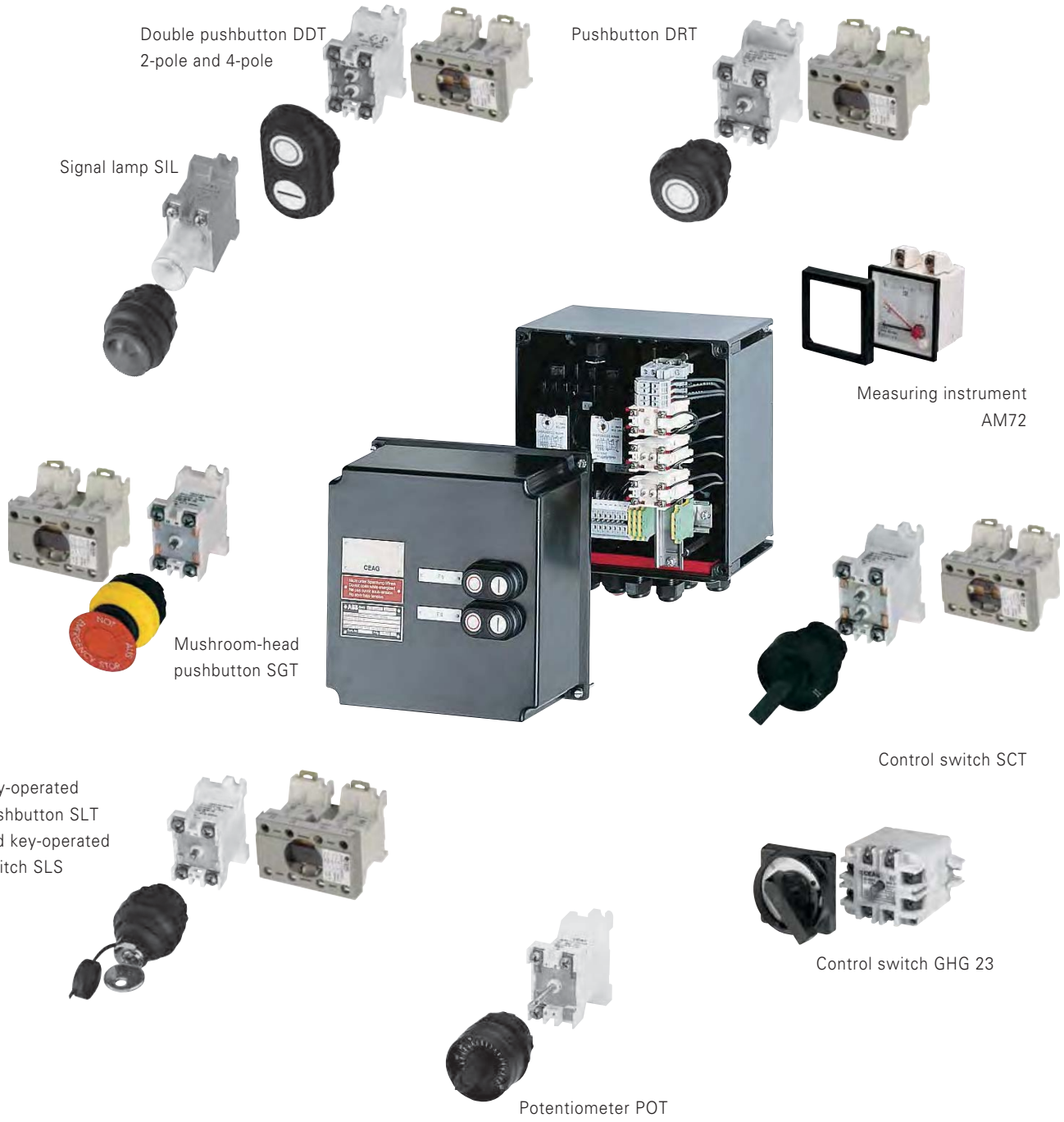






Customised enclosure, covered by Type Examination Certificates, can be individually combined from CEAG's numerous built-in components. For the selection of control units and components, please see page 2.4.54 to 2.4.80.

Furthermore control units for panel mounting are available for use in certified enclosures or switchboards.
Detailed information you will find on pages 2.4.82 - 2.4.112.



DRT 1 x 2-pole

DRT 4 x 1-pole

DDT 2 x 1-pole

DDT 2 x 2-pole

Technical data

	Ex-pushbutton DRT and double pushbutton DDT
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de e IIC/IIB Gb / Ⓔx I M2 Ex d e I Mb
EC-Type Examination Certificate	IBEx U14 ATEX 1030 U
IECEx Certificate of Conformity	IECEx-IBE14.0005U
Marking accd. to IECEx	Ex d e IIC/IIB Gb Ex d e I Mb
Operating temperature range	–45 °C up to +80 °C (IIC) –60 °C up to +80 °C (IIB)
Application temperature [1]	–45 °C up to +55 °C (option: IIC) –60 °C up to +55 °C (option: IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current gold contacts	0.4 A
Rated making/breaking capacity accd. EN 60947-5-1	AC-1: U_e 400 V / I_e 16 A AC-15: U_e 250 V / I_e 6 A
Degree of protection accd. to EN 60529	IP66
Type of mounting	DIN rail mounting
Enclosure material	grey
Gasket material	Neoprene (standard), Silikon or Viton on request

	2-pole version
Connecting terminals	2 x 2.5 mm²
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

	4-pole version [2]
Connecting terminals	4 x 2.5 mm²
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.5 kg

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

[2] The 4-pole pushbutton needs two mounting areas of a 2-pole pushbutton. The actuator will be in the middle of the two mounting areas. For detailed information see page 2.4.54 - 2.4.80.

SLT 1 x 4-pole

SLT 1 x 2-pole

Technical data

	Ex-key-operated pushbutton SLT
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de e IIC/IIB Gb / Ⓔx I M2 Ex d e I Mb
EC-Type Examination Certificate	IBEx U14 ATEX 1030 U
IECEx Certificate of Conformity	IECEx-IBE14.0005U
Marking accd. to IECEx	Ex d e IIC/IIB Gb Ex d e I Mb
Operating temperature range	–45 °C up to +80 °C (IIC) –60 °C up to +80 °C (IIB)
Application temperature [1]	–45 °C up to +55 °C (Option: IIC) –60 °C up to +55 °C (Option: IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current gold contacts	0.4 A
Rated making/breaking capacity accd. EN 60947-5-1	AC-1: U_e 400 V / I_e 16 A AC-15: U_e 250 V / I_e 6 A
Degree of protection accd. to EN 60529	IP66
Type of mounting	DIN rail mounting
Enclosure colour	grey
Gasket material	Neoprene (standard), Silikon or Viton on request
Latch point	CEAG 1 (others on request)

	2-pole version
Connecting terminals	2 x 2.5 mm²
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

	4-pole version [2]
Connecting terminals	4 x 2.5 mm²
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

[2] The 4-pole pushbutton needs two mounting areas of a 2-pole pushbutton. The actuator will be in the middle of the two mounting areas. For detailed information see page 2.4.54 - 2.4.80.

SLT 1 x 2-pole

SLT 1 x 4-pole

Technical data

	Ex-Built-in components for individual control stations, key-operated switch SLS
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de e IIC/IIB Gb / Ⓔx I M2 Ex d e I Mb
EC-Type Examination Certificate	IBEx U14 ATEX 1030 U
IECEx Certificate of Conformity	IECEx-IBE14.0005U
Marking accd. to IECEx	Ex d e IIC/IIB Gb Ex d e I Mb
Operating temperature range [1]	–45 °C up to +80 °C (IIC) –60 °C up to +80 °C (IIB)
Application temperature [1]	–45 °C up to +55 °C (option: IIC) –60 °C up to +55 °C (option: IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current gold contacts	0.4 A
Rated making/breaking capacity accd. EN 60947-5-1	AC-1: U_e 400 V / I_e 16 A AC-15: U_e 250 V / I_e 6 A
Switching system	engaging – engaging – engaging
Degree of protection accd. to EN 60529	IP66
Type of mounting	DIN rail mounting
Enclosure colour	grey
Latch point	CEAG 1 (others on request)

	2-pole version
Connecting terminals	2 x 2.5 mm^2
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

	4-pole version [2]
Connecting terminals	4 x 2.5 mm^2
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

[2] The 4-pole pushbutton needs two mounting areas of a 2-pole pushbutton. The actuator will be in the middle of the two mounting areas. For detailed information see page 2.4.54 - 2.4.80..


SGT 1 x 4-pole


SGT 1 x 2-pole


SGTE 1 x 4-pole


SGTE 1 x 2-pole

Technical data

	Ex-mushroom-head pushbutton (Emergency Stop „SGTE“ and normal version „SGT“)
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de e IIC/IIB Gb / Ⓔx I M2 Ex d e I Mb
EC-Type Examination Certificate	IBEx U14 ATEX 1030 U
IECEx Certificate of Conformity	IECEx-IBE14.0005U
Marking accd. to IECEx	Ex d e IIC/IIB Gb Ex d e I Mb
Operating temperature range	–45 °C up to +80 °C (IIC) –60 °C up to +80 °C (IIB)
Application temperature [1]	–45 °C up to +55 °C (option: IIC) –60 °C up to +55 °C (option: IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current gold contacts	0.4 A
Rated making/breaking capacity accd. EN 60947-5-1	AC-1: U_e 400 V / I_e 16 A AC-15: U_e 250 V / I_e 6 A
Degree of protection accd. to EN 60529	IP66
Type of mounting	DIN rail mounting
Enclosure colour	grey
Gasket material	Neoprene (standard), Silikon or Viton on request

	2-pole version
Connecting terminals	2 x 2.5 mm²
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

	4-pole version [2]
Connecting terminals	4 x 2.5 mm²
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

[2] The 4-pole pushbutton needs two mounting areas of a 2-pole pushbutton. The actuator will be in the middle of the two mounting areas. For detailed information see page 2.4.54 - 2.4.80.

SCT 1 x 2-pole

SCT 1 x 4-pole

Potentiometer

Technical data

	Ex-Mini-control switch SCT
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de e IIC/IIB Gb / Ⓔx I M2 Ex d e I Mb
EC-Type Examination Certificate	IBEx U14 ATEX 1030 U
IECEx Certificate of Conformity	IECEx-IBE14.0005U
Marking accd. to IECEx	Ex d e IIC/IIB Gb / Ex d e I Mb
Operating temperature range	–45 °C up to +80 °C (IIC) / –60 °C up to +80 °C (IIB)
Application temperature [1]	–45 °C up to +55 °C (option: IIC) / –60 °C up to +55 °C (option: IIB)
Rated voltage	500 V AC
Rated current	16 A
Rated current gold contacts	0.4 A
Rated making/breaking capacity accd. EN 60947-5-1	AC-1: U_e 400 V / I_e 16 A AC-15: U_e 250 V / I_e 6 A
Degree of protection accd. to EN 60529	IP66
Type of mounting	DIN rail mounting
Enclosure colour	grey

	2-pole version
Connecting terminals	2 x 2.5 mm²
Dimensions (L x W x H)	59 x 31 x 45 mm
Weight	0.15 kg

	4-pole version [2]
Connecting terminals	4 x 2.5 mm²
Dimensions (L x W x H)	59 x 73 x 45 mm
Weight	0.35 kg

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

[2] The 4-pole pushbutton needs two mounting areas of a 2-pole pushbutton. The actuator will be in the middle of the two mounting areas.
For detailed information see page 2.4.54 - 2.4.80..

Technical data

	Ex-Potentiometer POT
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de e IIC/IIB Gb / Ⓔx I M2 Ex d e I Mb
EC-Type Examination Certificate	IBEx U14 ATEX 1030 U
IECEx Certificate of Conformity	IECEx-IBE14.0005U
Marking accd. to IECEx	Ex d e IIC/IIB Gb / Ex d e I Mb
Operating temperature range [1]	–45 °C up to +80 °C (IIC) / –60 °C up to +80 °C (IIB)
Application temperature [1]	–45 °C up to +55 °C (option: IIC) / –60 °C up to +55 °C (option: IIB)
Rated voltage	up to 250 V
Power consumption (VA)	max. 1 W
Resistance range	100 – 10.000 Ω
Tolerance	± 20 %
Connecting terminals	2 x 2.5 mm²
Degree of protection accd. to EN 60529	IP66
Dimensions (L x W x H)	approx. 59 x 31 x 45 mm
Weight	0.15 kg
Type of mounting	DIN rail mounting
Enclosure colour	grey
Angle of rotation	270°
Scale	0 - 100 %

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

For detailed information see page 9.52 – 9.74.

Ex 29

Ex 23

Signal lamp

Technical data

		Ex-signal lamp SIL
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex d e IIC/IIB Gb / Ⓔx II 2 G Ex d ia IIC/IIB Gb
EC-Type Examination Certificate		IBExU 12 ATEX 1047 U
Application temperature		–20 °C up to +40 °C
IECEx Certificate of Conformity		IECEx-IBE13.0031U
Marking accd. to IECEx		Ex d e IIC/IIB Gb Ex d ia IIC/IIB Gb
Operating temperature range		–45 °C up to +68 °C (IIC) –60 °C up to +68 °C (IIB)
Application temperature [1]		–45 °C up to +60 °C (IIC) –60 °C up to +60 °C (IIB)
Rated voltage (Ex ed IIC) (Ex d ia IIC/IIB) (Ex d e IIC/IIB)		20 V up to 254 V AC/DC 10 V up to 30 V DC 12 V up to 24 V AC/DC
Rated current	20 V to 254 V 10 V up to 30 V Ex d ia IIC 12 V up to 24 V	approx. 4 - 15 mA max. 25 mA max. 24 mA
Maximum for Ex ia		Ui = 30 V DC, Ii = 100 mA, Pi = 750 mW
Connecting terminals		2 x 2.5 mm²
Degree of protection accd. to EN 60529		IP66
Dimensions (L x W x H)		approx. 59 x 31 x 45 mm
Weight		0.15 kg
Type of mounting		DIN rail mounting
Enclosure colour		grey / yellow

[1] The limits of the operating temperature range and the max. permissible temperature rise of the components have to be taken into account. See also pages 2.6.21.

For detailed information see page 2.4.54 - 2.4.80.

Technical data

		Ex-Built-in components for individual control stations control switch Ex 23 and Ex 29	
		Ex 23	Ex 29
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex d e IIC / Ⓔx I M 2 Ex d e I	
EC-Type Examination Certificate		BVS 13 ATEX E 107 U	PTB 98 ATEX 1118 U
Application temperature [1]		–45 °C up to +55 °C (IIC) –60 °C up to +55 °C (IIB)	–20 °C up to +40 °C –55 °C up to +55 °C (option)
IECEx Certificate of Conformity		IECEx-IBNS13.0108U	
Rated voltage		up to 500 V	up to 500 V
Rated current		10 A	16 A[1]
Rated current gold contacts			0.4 A
Rated making/breaking capacity accd. EN 60947-5-1		AC-15: U_e 230 V / I_e 6 A DC-13: U_e 24 V / I_e 2 A	U_e 400 V / I_e 4 A U_e 230 V / I_e 0.5 A
Connecting terminals		2 x 0.5 - 2.5 mm²	2 x 0.5 - 2.5 mm² or 1 x 1.0 - 6.0 mm²
Weight	1 tier: 2 tier: 3 tier:	approx. 0.2 kg approx. 0.35 kg	approx. 0.25 kg approx. 0.40 kg approx. 0.55 kg
Type of mounting		DIN rail mounting	
Enclosure colour		grey	black

[1] Terminal cross section for 12 A: 2.5 mm²

For detailed information see page 2.4.54 - 2.4.80.

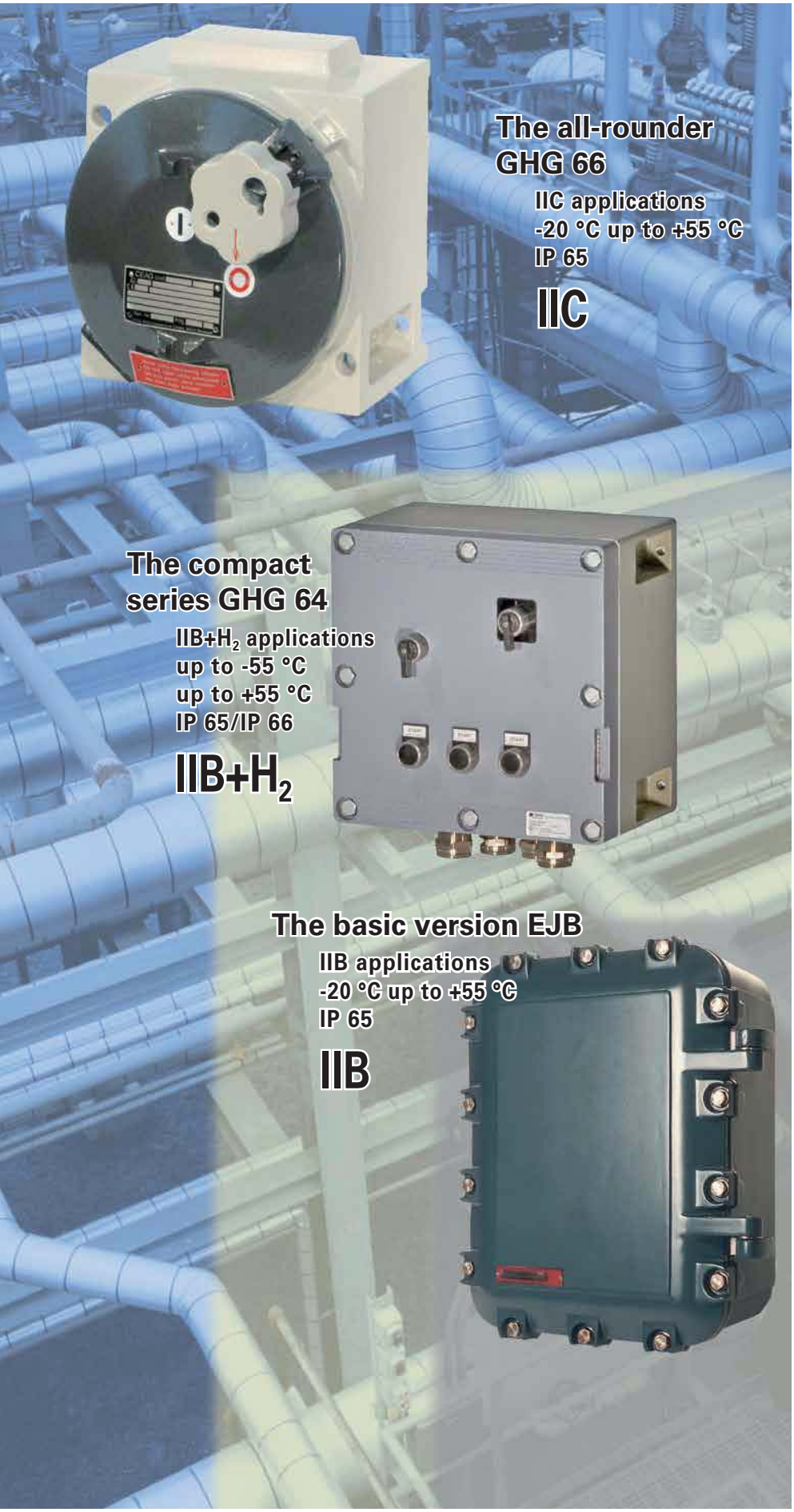
AM 45

AM 72

Technical data

	Ex-measuring instrument AM 45/AM 72	
	Moving iron	Moving coil
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex e IIC / Ⓔx I M 2 Ex e I	Ⓔx II 2 G Ex ib IIC / Ⓔx I M 2 Ex ib I
EC-Type Examination Certificate	PTB 99 ATEX 2032 U	
Permissible ambient temperature	–20 °C up to +40 °C –55 °C up to +55 °C (option)	
Rated voltage	up to 420 V (AM 45) up to 750 V (AM 72)	
Power consumption		max. 0.31 A
Overload range	10-fold - 25 sec. 25-fold - 4 sec. 50-fold - 1 sec. indicated 1 : 1.5	10-fold - 5 sec.
Measuring range	max. 0 - 25 A direct / n / 1A	0/4 - 20 mA
Inductance Li		≤ 0.1 mH
Capacitance Ci		≤ 0.1 nF
Winding specification of moving coil		26.5 windings
Internal resistance		2.5 Ω ±30 %
Open circuit voltage max. Ui		30 V
Connecting terminals max. Ii		150 mA
Accuracy	Class 2.5	Class 1.5
Circuit	Moving iron	Moving coil
Connecting terminals	2 x 0.5 - 2.5 mm^2 fine-/multi-wire	1 x 4 mm^2 solid-wire
Degree of protection accd. to EN 60529	IP65	
Display size	50 x 45 mm (AM 45) 72 x 72 mm (AM 72)	
Weight	0.35 kg	
Type of mounting	DIN rail mounting	
Enclosure material	grey	

For detailed information see page 2.4.54 - 2.4.80.



Safety can also be flexible

In our comprehensive product range you can find enclosure solutions in metal for a wide variety of applications. CEAG distributions with approvals for use in Zones 1, 21, 2 and 22 can be used for the implementation of applications in individual enclosures as well as in comprehensive complete distributions.

According to customer requirements, the flameproof enclosures can be designed for either direct cable entry or conduit connection or with a built-on Ex-e connection box with the so-called "indirect" cable entry option. When engineering complex distributions, the supply of individual flameproof enclosures via a bus bar system is possible. Depending on the respective product family or application, versions are available for the explosion groups IIB, IIB +H2 and IIC. A complete range of CEAG Ex-d distributions is available for the gas explosion groups IIB, IIB +H2 and IIC. The products can, of course, also be used for gas group IIA.

Provided that the power dissipation and the space requirements are taken into account, all standard industrial switchgear that gives off arcs or sparks during operation can be built into these flameproof enclosures.

In case of distributions for explosion group IIC (enclosure series GHG 66), wiring between flameproof enclosures is carried out in the factory, whereby it is standard to use enclosures in the type of protection "Increased Safety" (Ex-e enclosures). The use of Ex-e enclosures is also standard for connection by the customer.

In case of distributions for explosion groups IIB and IIB+ H2 (enclosure series GHG 64), enclosures are wired in the factory directly using flameproof cable entries between the Ex-d enclosures or indirectly using Ex-e enclosures. Connection by the customer is either carried out directly using Ex-d cable entries or indirectly using Ex-e enclosures.

Our EJB enclosure series for explosion group IIB are connected to each other using direct cable entries. The use of Ex-d cable entries or Ex-d conduits is standard for connection by the customer.

Thanks to the optimal geometry of the enclosures and the well-thought-out modular system, with the GHG 64 enclosure series you can fulfil both simple and complex tasks in an optimal way and create space-saving and safe solutions to suit your individual applications.

Ex-d Enclosures and Distributions

Series GHG 66 made of metal for gases of explosion group IIC

Safety for all environments

To use MCBs, fuses, contactors etc. which give off arcs in potentially hazardous areas, they must be integrated in Ex-d distributions.

For just this purpose, Eaton's Crouse-Hinds Business offers a distribution system comprising flameproof aluminium enclosures and Ex-e steel terminal boxes with a polyester powder coating suited for tropical and marine climates. Seven enclosure sizes can be combined into large distributions allowing integration of built-in components up to 630 A and 690 V.

To simplify the integration of large installations,bus-bar systems for up to 630 A are used.

Customer-specified distributions are planned individually, taking explosion-protection requirements into account.

Explosion-protected signal lamps, indicating and control components are built into connection and bus-bar boxes, as required. Alternatively,these boxes can be supplied as separate terminal and control boxes. CEAG explosion-protected metal distributions fulfil all the requirements specified by the chemical, petrochemical and offshore industries..

Features

- **Modular design**
- **Rated current up to 630 A**
- **Generously dimensioned terminal compartment**
- **Suited for tropical and maritime climates through powder coating**
- **Cable entries via removable flanges**
- **Main switch can be actuated from outside**
- **Metal parts without finish are corrosion resistant**
- **Explosion group IIC**

The modular design provides an economical and clearly arranged method of putting together distributions on the unit construction system using connection and bus bar boxes in the type of protection "Increased Safety". The individual flameproof distribution enclosures are joined together via the flange openings of the Ex-e connection boxes and the bus bar boxes. It is also possible to put together completely flameproof distributions by using flameproof cable glands.

The flameproof enclosures are also available as empty enclosures with and without Ex-e connection boxes as well as with and without main switches for equipping by the customer. In this case,please note that national standards require a special inspection by an authorized expert. Also single or multi-wire bushings with connectors can be mounted on the distributions, if required. Alternatively, these leads can be connected to a terminal rail.

Any conventional industrial switchgear that gives off arcs or sparks during operation can be built into these flame-proof enclosures.
The power dissipation must not exceed the values stated in the PTB certificate.

The various circuits can be connected quickly and economically via a bus-bar system.

If required, individually encapsulated control and indicating units, such as pushbuttons, control switches or Ex-e measuring instruments as well as Ex-i digital indicating instruments can be built into the Ex-e connection or bus-bar boxes.

The enclosures can be combined into large distribution system on standardised wall mounting or free-standing frameworks. The frameworks come in standardized sizes to accommodate the enclosure modules and can be extended as required.
For outdoor installations, we recommend canopies to protect the distribution system from the sun and rain. Smaller distributions are mounted on flat or U-rails. All en-closures are made of hot-dip galvanised steel.

Type 1

Type 2

Type 4

Type 5

Technical data

	Ex d Light alloy enclosure for motor starter
Marking accd. to 2014/34/EU	⟨Ex⟩ II 2 G Ex de ia/ib [ia/ib] IIC/IIB T6/T5/T4 Gb ⟨Ex⟩ II 2 d Ex tb IIIC T80 °C T95 °C Db [1]
EC-Type Examination Certificate	PTB 99 ATEX 1057
IECEx-Certificate of Conformity	IECEx PTB 12.0026
Marking accd. to IECEx	Ex de IIC T6, T5, T4 Gb Ex de IIB T6, T5, T4 Gb
Permissible ambient temperature	–20 °C up to +40 °C –55 °C up to +55 °C (option)
Rated voltage	690 V
Rated current	630 A
Protection class	I
Connecting terminals	up to 300 mm²
Degree of protection acc. to EN 60529[1]	IP54 (IP66 on request)
Weight	see ordering details
Enclosure material	aluminium die-cast housing
Enclosure colour	pebbles grey, cover dark grey

[1] Dust certification only in combination with IP66

Ordering details

Content Motor capacity to AC 3	Type	Main switch	Cable glands	Weight approx.	Degree of protection nach EN 60529	Order No.
Direct circuit						
11 kW	1	25 A	3 x M25	14.5 kg	IP54	**EXKO 71 5000 F 0000**
15 kW	2	25 A	2 x M32 / 1 x M25	24.5 kg	IP54	**EXKO 71 5000 H 0000**
22 kW	4	40 A	2 x M40 / 1 x M25	37.5 kg	IP54	**EXKO 71 5000 K 0000**
Reversing circuit						
11 kW	1	25 A	3 x M25	14.5 kg	IP54	**EXKO 71 5100 F 0000**
15 kW	2	25 A	2 x M32 / 1 x M25	24.5 kg	IP54	**EXKO 71 5100 H 0000**
22 kW	4	40 A	2 x M40 / 1 x M25	39.5 kg	IP54	**EXKO 71 5100 K 0000**
Star-delta starter						
7.5 kW	2	40 A	4 x M25	25 kg	IP54	**EXKO 71 5200 B 0000**
12.5 kW	2	40 A	4 x M25	25 kg	IP54	**EXKO 71 5200 D 0000**
18.5 kW	4	40 A	3 x M32 / 1 x M25	37 kg	IP54	**EXKO 71 5200 F 0000**
30.0 kW	4	63 A	3 x M32 / 1 x M25	39 kg	IP54	**EXKO 71 5200 H 0000**
37.0 kW	5	100 A	1 x M40 / 2 x M32 1 x M25	64 kg	IP54	**EXKO 71 5200 K 0000**
55.0 kW	5	100 A	1 x M40 / 2 x M32 1 x M25	64 kg	IP54	**EXKO 71 5200 M 0000**

The motor starters are completely wired for connection by customer.

Further switching capacities up to 630 A on request.

Please state motor operating voltage and rated current in your order.

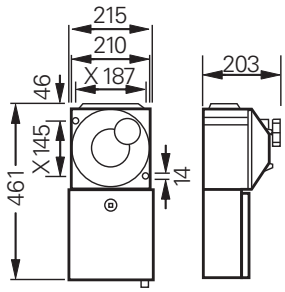
Type 5

Type 4

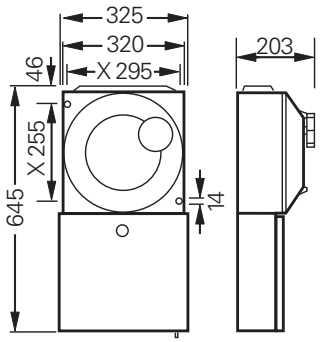
Type 2

Type 1

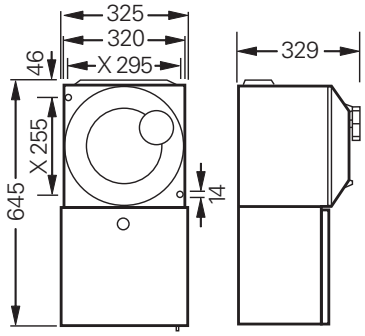
Dimension drawing I Wiring diagram



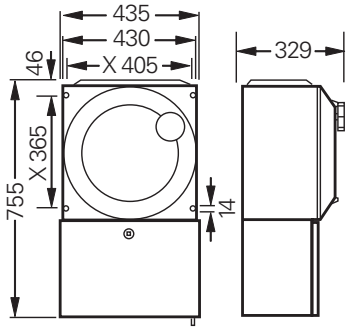
Type 1



Type 2



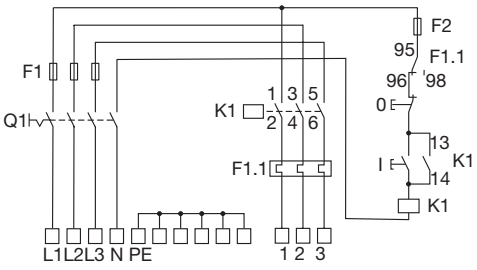
Type 4



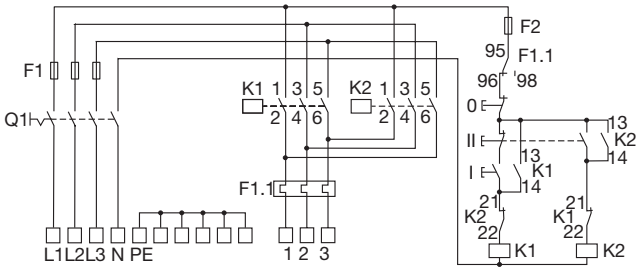
Type 5

X = fixing dimension

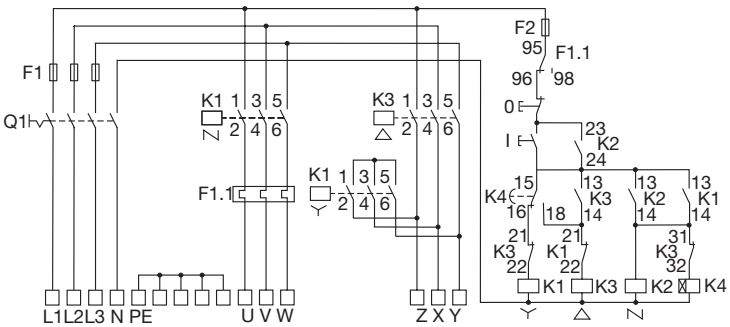
Direct online starter



Reversing starter



Star-delta starter



Size 1

Size 2

Size 7

Size 6

Technical data

	Ex d light alloy empty enclosures GHG 66/GHG 67 motor starter
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib [ia/ib] II Ⓔx II 2 D Ex tD A21 IP66
EC-Type Examination Certificate	PTB 98 ATEX 1054U
IECEx-Certificate of Conformity	IECEx PTB 12.0026
Marking accd. to IECEx	Ex de IIC / IIB Gb / Ex tb IIIC Db Ex de IIB T6, T5, T4 Gb
Permissible ambient temperature	–20 °C up to +40 °C –55 °C up to +60 °C (option)
Rated voltage	690 V
Rated current	630 A
Connecting terminals	up to 300 mm^2
Degree of protection accd. to EN 60529	IP54 (IP66 on request)
Weight	see ordering details
Enclosure material	aluminium die-cast housing
Enclosure colour	coating suited for tropical and marine climates finish polyester coating in RAL 7032/7022

Ordering details

Content	Power dissipation [1] T6	T5	Rated current	Weight	Order No.
Ex d light alloy empty enclosures, GHG 66					
Size 1	80 W	120 W	125 A	8 kg	**on request**
Size 2	150 W	210 W	260 A	16 kg	**on request**
Size 4	210 W	280 W	400 A	23 kg	**on request**
Size 5	300 W	420 W	400 A	40 kg	**on request**
Size 7	300 W	420 W	400 A	55 kg	**on request**
Ex d empty enclosure, cover light alloy, body sheet steel, GHG 67					
Size 6	700 W	975 W	630 A	195 kg	**on request**

[1] Power loss to keep the temperature class only. Operating temperature of internal components has to be considered.

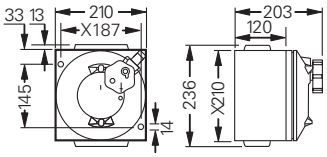
Size 6

Size 7

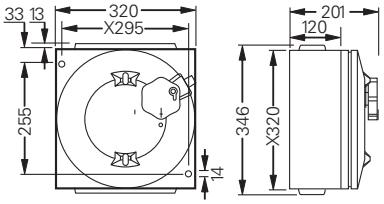
Size 2

Size 1

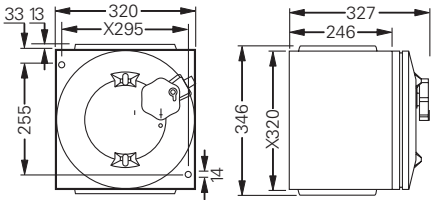
Dimension drawing



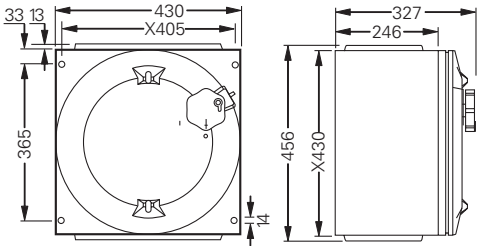
Size 1



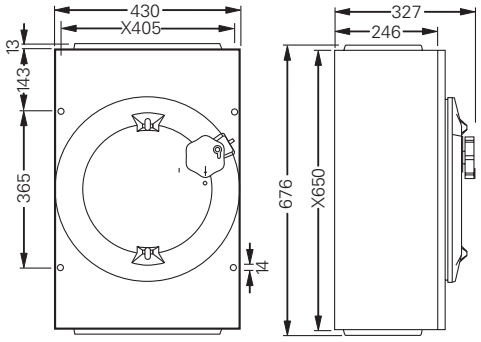
Size 2



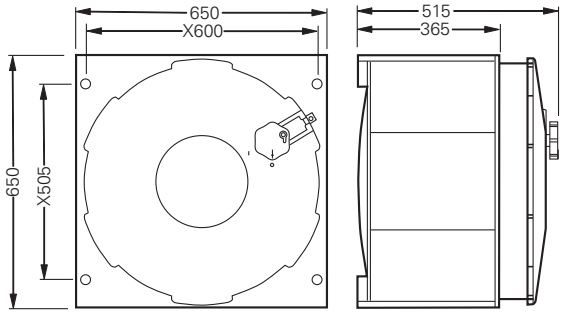
Size 4



Size 5



Size 7



Size 6

X = fixing dimension

Dimensions in mm

Connection box

Bus-bar box

Technical data

	Stainless steel / sheet steel connection box		
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib [ia/ib] IIC T4 - T6 Ⓔx II 2 D Ex tD A21 IP66 T80 °C, T95 °C, T100 °C		
EC-Type Examination Certificate	PTB 00 ATEX 1073		
Permissible ambient temperature	–55 °C up to +55 °C		
Rated voltage	690 V		
Rated current	630 A		
Connecting terminals	up to 300 mm²		
Degree of protection accd. to EN 60529	IP54 (IP65 on request)		
Weight	see ordering details		
Enclosure material	stainless steel / sheet steel		
Enclosure colour	natural stainless steel / finish polyester powder coating in RAL 7032		

	Stainless steel / sheet steel-bus-bar box		
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib [ia/ib] IIC T4 - T6 Ⓔx II 2 D Ex tD A21 IP66 T80 °C, T95 °C, T100 °C		
EC-Type Examination Certificate	PTB 00 ATEX 1073		
Permissible ambient temperature	–55 °C up to +55 °C		
Rated voltage	690 V		
Rated current	250 A	400 A	630 A
Rated short-circuit current	35 kA	53 kA	59.2 kA
Rated thermal short-time current	9.4 kA (1s) [1]	10.7 kA (1s) [1]	13.2 kA (1s) [1]
Terminal cross section	up to 300 mm²		
Degree of protection accd. to EN 60529	IP54 (IP66 on request)		
Weight	see ordering details		
Enclosure material	stainless steel / sheet steel		
Enclosure colour	natural stainless steel / finish polyester powder coating in RAL 7032		

[1] Other values on request

Ordering details

Content	Max. no. of built-in control units	Module size	Length of terminal rail	Weight	Order No.
Stainless steel / sheet steel connection box					
AK 1-2	4	1	1 x 190 mm	4.3 kg	**on request**
AK 2-2	15	2	2 x 300 mm	7.0 kg	**on request**
AK 4-1	15	4	3 x 300 mm	9.5 kg	**on request**
AK 5-1	21	5	3 x 410 mm	11.5 kg	**on request**
AK 6-1	52	6	3 x 630 mm	23.5 kg	**on request**
Stainless steel / sheet steel bus-bar box					
SSK 1	20	1	1 x 295 mm	11.0 kg	**on request**
SSK 2	28	2	2 x 405 mm	15.0 kg	**on request**
SSK 3	52	3	2 x 625 mm	23.0 kg	**on request**
SSK 4	72	4	2 x 845 mm	31.0 kg	**on request**

Also suitable for Ex-d enclosure series GHG 64

Bus-bar box

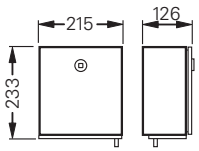
Connection box

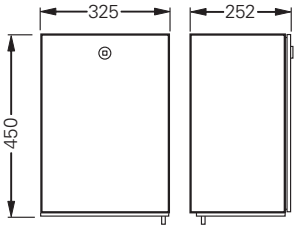
Dimension drawing

Stainless steel/ sheet steel-connection box

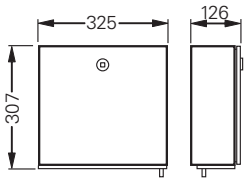
Stainless steel / sheet steel-bus-bar box

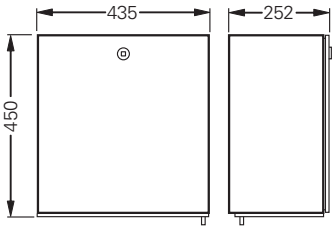
Size 1



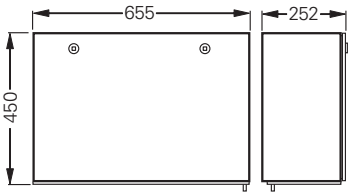


Size 2

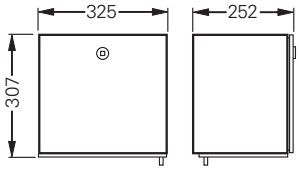


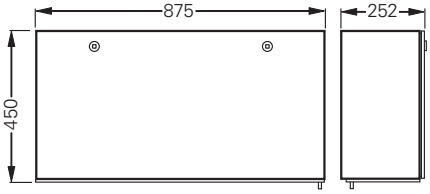


Size 3

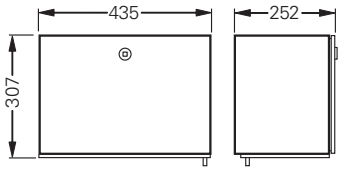


Size 4

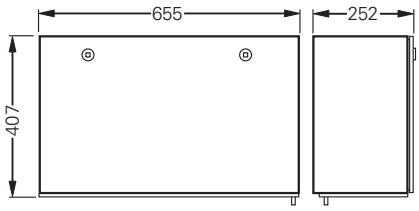




Size 5



Size 6



6

Dimensions in mm

Ex-d Enclosures and Distributions

Series GHG 64: Modular design for almost any application IIB / IIB + H_2

The optimized solution

Regardless of whether for offshore applications or for use in harsh environments found in chemical plants and refineries: thanks to the optimised selection of materials, combined with a high quality powder coating (> 100 µm) and the use of stainless fixing materials, the new flameproof light alloy enclosures of the series.

GHG 64 with flat flamepaths can be used in all areas. The modular design, the wider temperature range (-55 °C to +55 °C) and the compact design are further highlights of this product range.

The computer-optimised enclosure design with a significant weight reduction ensures a pressure resistance up to -55 °C.

The 11 different enclosure sizes are compatible and can, therefore, be combined to suit requirements. They are interconnected using flameproof bushings and, as a result, individual, large and complex customised solutions up to 1150 A can be assembled using enclosures in different sizes, e.g. a wide variety of control systems, as well as control devices, motors starters and trace heating distributions up to 1150 A.

A fast and economical distribution of high currents is also possible using a bus-bar system.

The special cost advantage: as they are built into Ex-d enclosures, not only low-priced, standard industrial built-in components, but also complex units (e.g. converters) can also be used in hazardous areas. The high dissipation loss of the enclosures ensures a high degree of flexibility when selecting components.

The result: solutions that suit your applications exactly!

Features

- **Extract from our modular construction system:**
- **Enclosure in 11 different sizes**
- **Wide variety of Ex-d actuators for pushbuttons, circuit breakers, main switches, etc.**
- **Stainless steel or powder-coated sheet metal**
- **Ex-e enclosures**
- **Two busbar systems (Ex-d up to 1150 A and,**
- **standard version, Ex-e up to 630 A)**
- **Free choice of suitable cable entries (Ex-d and**
- **Ex-e), e.g from CEAG and Capri**
- **Hinged cover with up to 110° opening angle**
- **Frameworks for wall and floor mounting**
- **Windows**

Explosion protection made to measure!

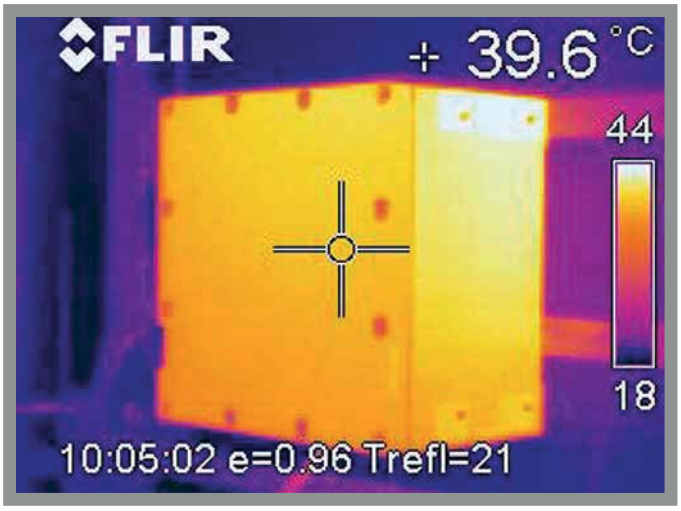
Optimised enclosure sizes enable us to meet the needs of the customer exactly are possible. A wide variety of industrial components, e.g. contactors, MCBs, RCDs, PLCs, WLAN, time elements, electronic components or terminals, can be operated in hazardous areas in a space-saving and safe manner using the 11 enclosure sizes that are now available.

The better the size of the enclosure suits the built-in components, the more convenient the mounting on site.

Optimum utilization of heat dissipation!

Optimum utilization is made possible by a complex assessment of the permissible heat dissipation in worst case situations, in combination with a simultaneous observance of the maximum surface temperature that must not exceed the permissible limiting temperature at any time. As a result, the permissible values are considerably higher than those normally given in the standard documentation.

Thus, a higher dissipation is possible in an enclosure of the same size, while the surface temperature stays within the permissible limits! This saves space and allows more flexibility during planning.



The following sizes are available:

Size 11: 650 x 650 x 442 mm
Size 10: 430 x 650 x 440 mm
Size 9: 430 x 650 x 284 mm
Size 8: 430 x 430 x 284 mm
Size 7: 320 x 430 x 284 mm
Size 6: 320 x 430 x 191 mm
Size 5: 320 x 320 x 284 mm
Size 4: 320 x 320 x 191 mm
Size 3: 210 x 320 x 284 mm
Size 2: 210 x 320 x 191 mm
Size 1: 210 x 210 x 191 mm

In addition to the innovative overall concept, it is the many innovative details of the GHG 64 enclosure series are that convince our customers.

Intelligent hinge technique

Optionally, the stainless steel hinges with their new technique make it possible to open enclosures even if they are mounted directly adjacent to each other. Once the captive screws have been undone, the cover can be swung open easily thanks to the spring-mounted pull/turn hinges.

This saves space, simplifies maintenance work and speeds up repairs and the replacement of built-in components – a cost factor that should not be underestimated!
The new integrated easy cover opening mechanism prevents mechanical damage of the flame path.

Cost-saving windows

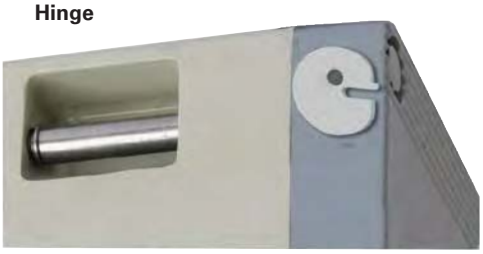
The optional window embedded in the enclosure cover is a further useful detail. It makes it possible to monitor the display and switch states of the built-in components without additional, explosion-protected indicators that automatically increase costs.

Sealing system for low-maintenance flat flame paths.

With their optimised, low-maintenance, flat flamepaths, the standard GHG 64 enclosures feature the high degree of protection IP 65. This can be increased to IP 66 with the optional lip seal made of highly heat and weather-resistant silicone.

And that is not all! Thanks to this sealing system, the Ex-d flamepath has optimal, long-term protection against corrosion caused by the ingress of aggressive materials into the flamepath. This reduces maintenance costs and enhances safety! Enclosures protected in this way can also be used where extreme conditions may occur due to moisture, salt water, chemicals and dust, e.g. in harsh industrial environments, and offshore. Thanks to the optimised sealing, the enclosures are also ideally suited for use in areas where large amounts of dust occur, e.g. in flour and saw mills.

Hinge

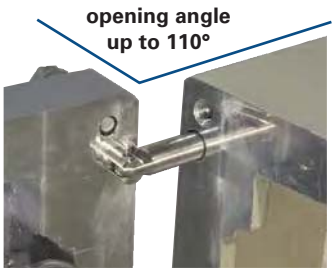


closed

Excenter disk for easy opening

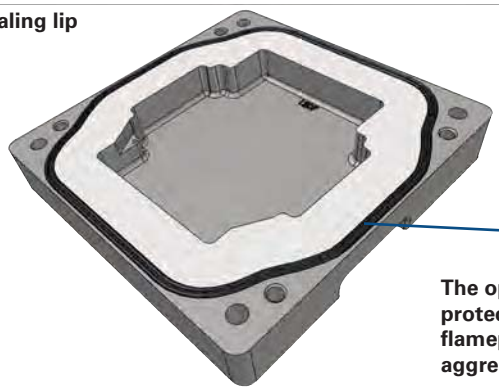
screw undone

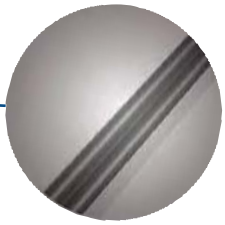
open



windows

sealing lip





The optional seal protects the flat flamepath from aggressive media

Technical data empty enclosure GHG 64

	Ex-d Light alloy empty enclosure GHG 64
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de IIB / IIB + H2 Gb / Ⓔx Ex t b IIIC Db
EC-Type Examination Certificate empty enclosure	PTB 08 ATEX 1042U
Application temperature[1]	–20 °C up to +40 °C / –55 °C up to +60 °C (option)
Degree of protection accd. to EN 60529	IP65 (IP66 optional)
Weight	see ordering details
Enclosure material	die-cast aluminium alloy
Enclosure colour (optionally with salt-water resistant paint finish)	RAL 7032/7046

[1] depends on the test pressure of the static overpressure test of the gas group

Ordering details[1]/dimension drawing empty enclosure II B and IIB + H_2

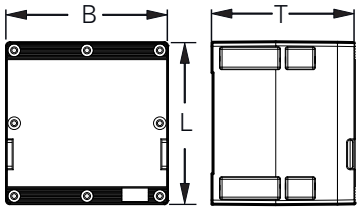
Type	Dissipation [3] ($T_{amb.}$ = 40 °C) T6	T5	Weight kg	Dimensions L x B X T	Order No.[1] IIB and IIB+H_2	Order-number key[1]
Ex d light alloy empty enclosures, powder coated						
Size 1	94 W	134 W	10,5 kg	210 x 210 x 191 mm	**GHG 640 1901 R02XX**	**XX** 01 > IIB 02 > IIB+H2 [2] 13 > IIB + hinge 14 > IIB+H2 + hinge [2] 25 > IIB IP66 26 > IIB+H2 IP66 [2] 37 > IIB IP66 + hinge 38 > IIB+H2 IP66 + hinge [2]
Size 2	112 W	158 W	14,0 kg	320 x 210 x 191 mm	**GHG 640 1902 R02XX**	
Size 3	140 W	195 W	17,0 kg	320 x 210 x 284 mm	**GHG 640 1903 R02XX**	
Size 4	152 W	214 W	18,0 kg	320 x 320 x 191 mm	**GHG 640 1904 R02XX**	
Size 5	197 W	280 W	21,0 kg	320 x 320 x 284 mm	**GHG 640 1905 R02XX**	
Size 6	240 W	335 W	22,0 kg	430 x 320 x 191 mm	**GHG 640 1906 R02XX**	
Size 7	270 W	390 W	27,0 kg	430 x 320 x 284 mm	**GHG 640 1907 R02XX**	
Size 8	270 W	390 W	35,0 kg	430 x 430 x 284 mm	**GHG 640 1908 R02XX**	
Size 9	390 W	430 W	53,0 kg	650 x 430 x 284 mm	**GHG 640 1909 R02XX**	
Size 10	470 W	640 W	73,0 kg	650 x 430 x 440 mm	**GHG 640 1910 R02XX**	
Size 11	470 W	640 W	105,0 kg	650 x 650 x 442 mm	**GHG 640 1911 R02XX**	

[1] The mentioned order numbers are only for guidance and will change in case of an order, due to the fact that they describe the equipment as delivered.
[2] H_2 option is not available for sizes 10 and 11
[3] Power loss to keep the temperature class. Operation temperature of the internal components has to be observed

Accessories

Type	Order No.
Mounting plates for components	**on request**

Dimension drawing



Connection and Bus-Bar Boxes

Ex-e connection and bus-bar boxes for GHG 64

A time-saving installation method

The time-proven Ex-e connection and bus-bar boxes are a meaningful addition to the GHG 64 range of enclosures. With these, the easy and safe realization of complex connections and current strengths of up to 630 A is standard.

Depending on customer requirements, these connection / busbar boxes, that have been adapted in an optimal way to the modular system of the flameproof enclosures, are available in stainless steel and powder-coated sheet steel and in 11 different sizes and can, therefore, be used in variable ways for a wide variety of enclosure combinations.

The various circuits of the distribution can be connected quickly and economically using a bus-bar system. Currents up to 1150 A are possible.

According to your requirements, individually encapsulated devices, such as control and indicator units, e.g. as pushbutton, control switches or Ex-e measuring instruments and Ex-i digital indicating instruments can also be built into the Ex-e connection and bus-bar boxes.

Features

- **Ex-e enclosures that have been adapted to the modular system**
- **Busbar boxes in both Ex-e and Ex-d design**
- **Through coupling of several enclosures using busbar rails**
- **Rugged Ex-e enclosure made of powder-coated sheet steel or stainless steel**
- **Ex-d enclosure made of die-cast aluminium alloy**
- **Easily accessible connection terminals or busbar rails**
- **Easy mounting of control and indicator units in cover**

Terminal boxes

Busbar boxes

Technical data

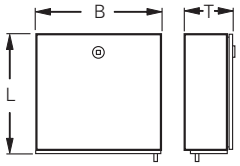
	Stainless steel / sheet steel connection box for GHG 64		
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib [ia/ib] IIC T4 - T6 / Ⓔx II 2 D Ex tD A21 IP66 T80 °C, T95 °C, T100 °C		
EC-Type Examination Certificate	PTB 00 ATEX 1073		
Permissible ambient temperature	–55 °C up to +55 °C		
Rated voltage	690 V		
Rated current	630 A		
Connecting terminals	up to 300 mm²		
Degree of protection accd. to EN 60529	IP54 (IP65 on request)		
Enclosure material	stainless steel / sheet steel		
Enclosure colour	natural stainless steel / finish polyester powder coating in RAL 7032		
	Stainless steel / sheet steel-bus-bar box for GHG 64		
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex de ia/ib [ia/ib] IIC T4 - T6 / Ⓔx II 2 D Ex tD A21 IP66 T80 °C, T95 °C, T100 °C		
EC-Type Examination Certificate	PTB 00 ATEX 1073		
Permissible ambient temperature	–55 °C up to +55 °C		
Rated voltage	690 V		
Rated current	250 A	400 A	630 A
Rated short-circuit current	35 kA	53 kA	59.2 kA
Rated thermal short-time current	9.4 kA (1s) [1]	10.7 kA (1s) [1]	13.2 kA (1s) [1]
Terminal cross section	up to 300 mm²		
Degree of protection accd. to EN 60529	IP54 (IP66 on request)		
Enclosure material	stainless steel / sheet steel		
Enclosure colour	natural stainless steel / finish polyester powder coating in RAL 7032		

[1] Other values on request

Dimensions Ex-e connection and bus-bar boxes

Content	Module size	Length of – terminal rail	Weight	Dimensions in mm L x B x T	
Sheet steel-connection box					
AK 1-1	1	1 x 190 mm	3.0 kg	126 x215 x 128	
AK 1-2	1	1 x 190 mm	4.3 kg	233 x 215 x 126	
AK 2-1	2	1 x 300 mm	4.5 kg	150 x 325 x 128	
AK 2-2	2	2 x 200 mm	7.0 kg	307 x 325 x 126	
AK 4-1	4	3 x 300 mm	9.5 kg	307 x 325 x 252	
AK 5-1	5	3 x 410 mm	11.5 kg	307 x 435 x 252	**(Order No. on request)**
AK 6-1	6	3 x 630 mm	23.5 kg	407 x 655 x 252	
AK 7-1	7	[1] 300 mm	15.8 kg	600 x 325 x 254	
AK 8-1	8	[1] 410 mm	18.7 kg	600 x 435 x 254	
AK 9-1	9	[1] 630 mm	31.8 kg	600 x 655 x 254	
AK 10-1	10	[1] 190 mm	5.1 kg	452 x 215 x 128	
Sheet steel-bus-bar box					
SSK 1	1	1 x 295 mm	11.0 kg	450 x 325 x 252	
SSK 2	2	2 x 405 mm	15.0 kg	450 x 435 x 252	**(Order No. on request)**
SSK 3	3	2 x 625 mm	23.0 kg	450 x 655 x 252	
SSK 4	4	2 x 845 mm	31.0 kg	450 x 875 x 252	

[1] Number of rails dependent on terminal type



GHG 64 Control Elements

Variable mounting of windows, control devices and signal lamps

Control your panel

In addition to the use of familiar bus bar and connection boxes for built-in components, e.g. windows, switches, indicating devices, actuators and switch blocks, a direct use of flameproof enclosures for Ex-d cover-mounting devices is also possible. The result is a multitude of possible combinations for the configuration of complex controls.

In accordance with your specifications, threaded Ex-d holes for accommodating the desired screw-in components are drilled into enclosure covers in our works.

Thanks to the modular design of the pushbutton, switch contact blocks can be exchanged at a later point in time. By simply undoing a bayonet connection inside the enclosure, individual contacts such as NC or NO can easily be replaced by multiple contact blocks without affecting the explosion protection. Here the extension of individual contacts to multiple contacts with up to four NC or NO contacts is possible.

Long-life LED lamps ensure safe operation on a lasting basis. Windows allow the monitoring of the built-in components. Ex-d actuating elements for various circuit breakers, such as mushroom-head pushbutton, key-operated switches or photocell inserts, complete the product range.

Features

- **Variable mounting of windows, actuators and signal lamps**
- **Rotary switches for main switch**
- **Pushbuttons with up to four contacts**
- **Pushbuttons with Emergency Stop function**
- **Key-operated switches/pushbuttons**
- **Signal lamp in various colours**
- **Padlocking facilities**
- **Nameplates**
- **Actuating elements for circuit breakers (MCBs)**

Mushroom-head pushb.w.lock

Mushroom-head pushbutton

Pushbutton

Key-operated pushbutton

Signal lamp

Technical data components for cover mounting

	Built-in Ex d control units / indicator elements / actuators for GHG 64
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d II
EC-Type Examination Certificate	PTB 06 ATEX 1009U
Operating temperature range	–20 °C up to +70 °C –20 °C up to +100 °C (option)
Application temperature[1)]	–20 °C up to +40 °C –20 °C up to +55 °C (option)
Rated voltage switch base	up to 500 V
Rated voltage indication lamps	230 V
Rated current switch basel	up to 63 A
Degree of protection accd. to EN 60529	IP65 (IP66, listed switch base up to 10 A, optional)
Fixing thread Ex-d	M22 x 1.5

Ordering details

Type	Content	Order No.
Switch base		
	1 NO	**GHG 640 9617 P0001**
	1 NC	**GHG 640 9617 P0002**
	1NO + 1 NC	**GHG 640 9617 P0003**
	2 NO	**GHG 640 9617 P0004**
	2 NC	**GHG 640 9617 P0005**
	2 NO + 1 NC	**GHG 640 9617 P0006**
	1 NO + 2 NC	**GHG 640 9617 P0007**
	2 NO + 2 NC	**GHG 640 9617 P0008**
	3 NO + 1 NC	**GHG 640 9617 P0009**
	1 NO + 3 NC	**GHG 640 9617 P0010**
	4 NO	**GHG 640 9617 P0011**
	4 NC	**GHG 640 9617 P0012**

Type	Content	Order No.	Thread length	
Signal lamp			**25 mm**	**40 mm**
	green	**GHG 640 9614...**	**P0011**	**P0021**
	red	**GHG 640 9614...**	**P0012**	**P0022**
	yellow	**GHG 640 9614...**	**P0013**	**P0023**
	blue	**GHG 640 9614...**	**P0014**	**P0024**
	farblos	**GHG 640 9614...**	**P0015**	**P0025**

Ordering details

Type	Content	Order No.	Thread length	
			25 mm	**40 mm**
Signal lamp	yellow	**GHG 640 9607...**	**P0011**	
	blue	**GHG 640 9607...**	**P0012**	**P0022**
	red	**GHG 640 9607...**	**P0013**	**P0023**
	green	**GHG 640 9607...**	**P0014**	**P0024**
	white	**GHG 640 9607...**	**P0015**	**P0025**
	black	**GHG 640 9607...**	**P0016**	**P0026**
Key-operated pushbutton				
	with 2 keys	**GHG 640 9608...**	**P0011**	**P0012**
Mushroom-head / EMERG.STOP pushbutton				
	D 36 mm with lock	**GHG 640 9603...**	**P0011**	**P0013**
	D 50 mm with lock	**GHG 640 9603...**	**P0012**	**P0014**
	with twist-release	**GHG 640 9604...**	**P0011**	**P0012**
	EMERG.STOP pushb.	**GHG 640 9606...**	**P0011**	**P0012**

Ex-d(e) control units, control switches, terminal boxes and distributions can be built in accordance with EC-Type Examination Certificate PTB 08 ATEX 1043X

Rotary switch base mounted

Rotary switch cover mounted

Photocell

Wndow, round

Window, square/rectangular

Ordering details

Type	Content	Order No.
Main switch up to 1000 A	**Rotary switch for cover**	
	Switch 32 - 63 A	**GHG 640 9612 P0001**
	Switch 63 - 100 A	**NOR 000 001 170 030**
	Switch 100- 250 A	**NOR 000 001 170 031**
	Switch 250-1000 A	**NOR 000 001 170 032**

Type	Content	
	Photocell 250 VAC / 10 A	**GHG 640 9601 P0003**

Ordering details

Type	Content	Order No.
	Window square, 60 x 60 mm	**on request**
	Window rectangular, 140 x 60 mm	**on request**
	Window rectangular, 140 x 180 mm	**on request**
	Window round, Ø 80 mm	**on request**
	Padlocking-facility Pushbutton engaged	**GHG 640 9614 P0001**
	Padlocking-facility Pushbutton released	**GHG 640 9614 P0002**

Ex-d(e) control units, control switches, terminal boxes and distributions can be built in accordance with EC-Type Examination Certificate PTB 08 ATEX 1043X.

Size 5

Size 4

Size 3

Size 2

Size 1

Technical data

	Ex-d Motor starter
EC-Type Examination Certificate	PTB 08 ATEX 1043X
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB / IIB + H2 T5, T6 Gb Ⓔx II 2 D Ex tb IIIC T80 °C, T95 °C Db IP66
IECEx Certificate of Conformity	IECEx PTB 11.0077 X
Marking accd. to IECEx	Ex d IIB + H2 T6, T5, T4 Gb
Permissible ambient temperature	–20 °C up to +40 °C –55 °C up to +55 °C (option)
Rated voltage	up to 690 V
Rated current	up to 100 A
Connecting terminals	up to 400 mm^2
Degree of protection accd. to EN 60529	IP65 (IP66 optional)
Weight	see ordering details
Enclosure material	die-cast aluminium
Enclosure colour	RAL 7032/7022

Ordering details

Content Motor capacity to AC 3	Main switch	Cable entry	Weight approx.	Order No.
11 kW	25 A	3 x M25	13.0 kg	**on request**
15 kW	25 A	2 x M32 / 1 x M25	23.0 kg	**on request**
22 kW	40 A	2 x M40 / 1 x M25	35.5 kg	**on request**
Reversing circuit				
11 kW	25 A	3 x M25	13.5 kg	**on request**
15 kW	25 A	2 x M32 / 1 x M25	23.5 kg	**on request**
22 kW	40 A	2 x M40 / 1 x M25	36.0 kg	**on request**
Star-delta starter				
7.5 KW	40 A	4 x M25	23.5 kg	**on request**
12.5 KW	40 A	4 x M25	24.0 kg	**on request**
18.5 KW	40 A	3 x M32 / 1 x M25	37.0 kg	**on request**
30.0 KW	63 A	3 x M32 / 1 x M25	38.0 kg	**on request**
37.0 KW	100 A	1 x M40 / 2 x M32 / 1 x M25	63.0 kg	**on request**
55.0 KW	100 A	1 x M40 / 2 x M32 / 1 x M25	63.0 kg	**on request**

You have your specific requirements for which we provide the appropriate solution:

- Ex low-voltage distributions
- Ex motor controls
- Ex lighting circuit distribution systems
- Ex heating circuit distribution systems
- Ex instrumentation applications
- Ex wireless LAN

Depending on the task in hand and taking the specified size and technology or specific ambient conditions into consideration, e.g. aggressive media, harsh industrial conditions or offshore applications, we engineer the optimum GHG 64 Ex-d distribution system for you as a solution for the most cost-effective, local control/power distribution in a hazardous area.

With this modular system, all enclosure sizes are fully compatible, thus making it possible to flange several smaller enclosures onto the large enclosures, whereby they are flush with all the adjacent areas. Thus, any distribution required can be realized using flameproof connections or connection and bus-bar boxes.

We can, of course, also integrate customer-specific functional units, such as frequency converters or electronic sub-assemblies, into our Ex-d solution as built-in apparatus.

According to your inquiry, we submit an optimum solution proposal for your required application.

- Compact design
- IIB + H2 applications
- Cost optimization thanks to low maintenance flat flamepaths and the compact design
- Can be used in extreme ambient temperatures from-55°C to +55°C
- Wide range of actuators
- Copper-free aluminium with high quality powder coating
- Up to IP 66 to EN 60529

With us you have the choice

With us you always have the possibility of choosing between fully configurated standard and customised equipment with direct cable entries, flameproof connection compartments or Ex-e connection compartments according to your requirements.

Customised solutions

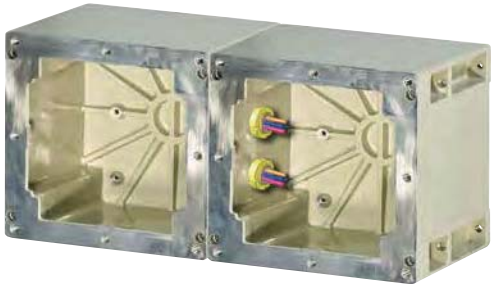
We can supply you with an individual solution customised according to your wishes. We deliver individual units, combinations on wall or floor-mounting frameworks or free-standing for operation from both sides that are ready for connection to any place in the world.

Based on your specific requirements, we put together all the necessary components, assemble them with your specific built-in components, test all the functions and deliver them within the agreed time to the specified location.

It goes without saying that our CE Declaration of Conformity also observes and takes the built-in industrial components into consideration and, what is more, our customised solutions are also covered by other available national approvals, thus allowing you to concentrate fully on your core business. .

Our standard solution

As with the GHG 66 enclosure series, we also supply the GHG 64 enclosure series with fully assembled products, e.g. manual motor starters for direct, reversing and star-delta switching, as well as safety switches for up to 800 A, four-pole, and standard distributions with circuit breakers. These units have their own order numbers, have been fully tested and can be supplied at short notice.



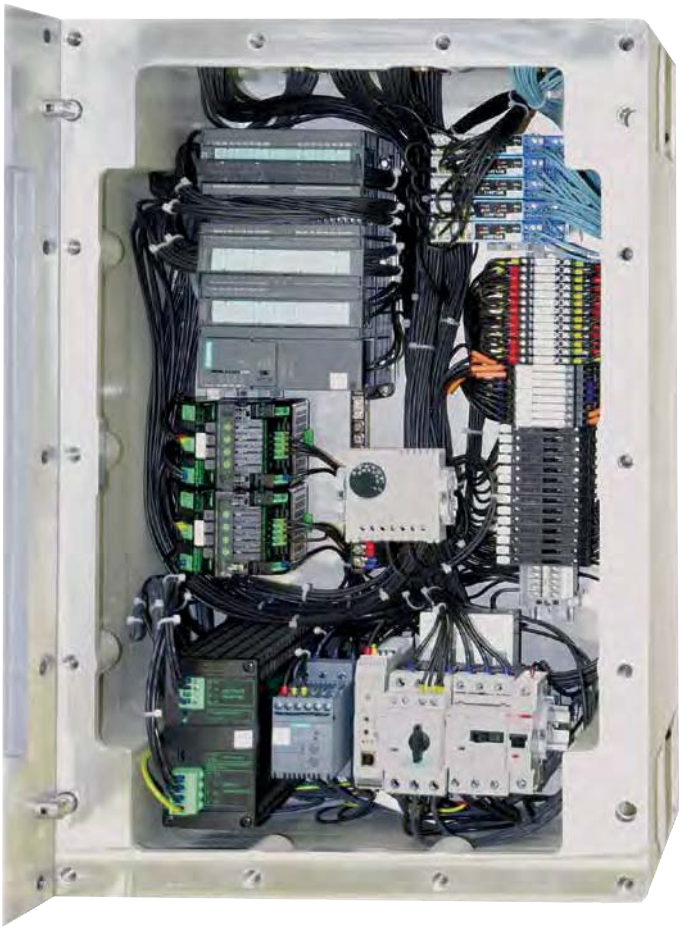
Complex requirements for local explosion- protected controls

In addition to the stringent enclosure requirements, in the case of controls special emphasis is placed on the clear arrangement of the control and indicating elements.

For example, in the case of marine applications. The illustrated control unit is used for the operation of two electric motors of the hydraulic pump of the ship loading arm in a hazardous area that is classified as Group IIB.

This is a challenging task, as the components in the required compact design always have to be easily accessible. Here we were able to offer the customer an optimised solution that completely fulfils the given specifications using the GHG 64 concept.

Further applications of this kind, where a high degree of protection and compact design are required, are not only found in the oil and gas industries in installations for loading operations onshore and on offshore platforms or on oil or gas tankers, but also in pharmaceutical plants, at suppliers and in areas with Ex dust applications, e.g. in areas where sacks are emptied, mills and mixers, filling installations, etc.



Wireless solutions for the processing industry

New radio systems make reliable wireless communication for measuring and control applications possible. The demand for solutions in the processing industry is growing all the time. The range of possible applications even covers the equipment/field level. Here we are working together closely with MTL, the leading manufacturer of industrial radio systems, and can supply you with complete solutions on the basis of our GHG 64 enclosure system. This means that you can use various systems with open interfaces. The requirement profiles for the hardware are complex.

Intelligent instrumentation

Thanks to the GHG 64 enclosure concept, it is possible to combine the reliable safety of a modular, explosion-protected enclosure concept with the advantages of a continuous communications infrastructure between the main, control and process levels. Here, for example, Ethernet-based communication systems can also be used in hazardous areas. This allows the use of a modern information architecture and, at the same time, the efficient adherence to all the explosion protection criteria.

Ex-d Distributions EJ-Series

Metal enclosures for gases in explosion group IIB with variable mounting of windows, control devices and signal lamps

Flexible safety

Apparatus which gives off arcs or sparks can be integrated in distributions at low cost using flameproof enclosures. Built-in electrical components can be actuated by means of control units mounted from the outside on the covers.

The extensive product line for use in explosion group IIB for the hazardous areas of Zones 1 and 2 fulfils the requirements of ATEX directive 2014/34/EU. Due to the most diverse demands, individualised distribution systems can be put together. Enclosures are connected via flameproof cable entries. The design and equipment of the distributions depends on customers' requirements.

Features

- **Modular design**
- **Rated current up to 1200 A**
- **Suited for tropical and maritime climates through powder coating**
- **Apparatus can be operated from the outside**
- **Direct cable entries**

Customer specific

The distributions and built-in components are combined to customers' specifications for wall-mounting or free-standing frameworks, depending on the installation site.

Free-standing frameworks are designed according to the distributions or special apparatus required and fitted with standardised U-rails. For outdoor installations, we recommend a canopy to protect the distribution from the sun and rain.

The frameworks all feature a grey epoxy resin finish identical with that of the EJ enclosures. Hot-dip galvanised steel frameworks are available on request.

The modular design makes it possible to put together distributions and built-in components using standardised enclosure sizes.

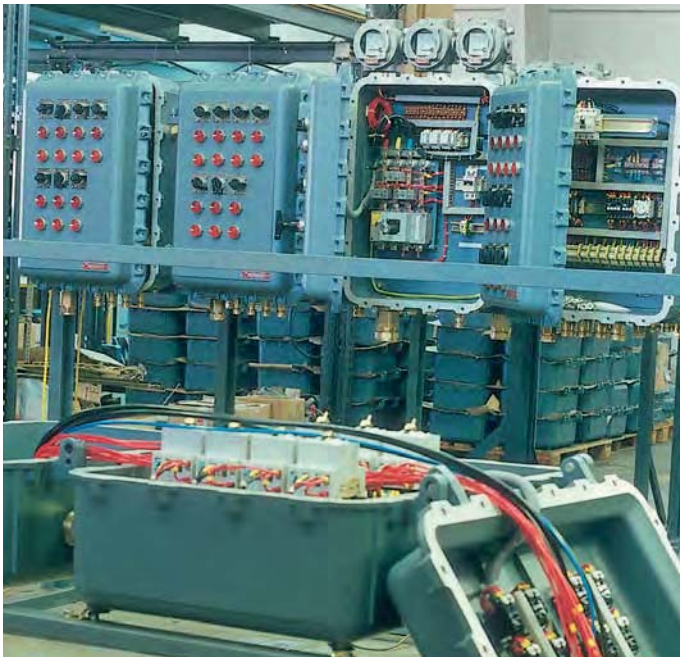
The enclosures are interconnected with cable bushings and/or bus bars and are especially designed to facilitate bus-bar allocation when putting distributions together.

Electrical components built into the enclosures can be actuated from the outside via control units mounted on the front panels. Ex-d cable entries must be used where required.

EJB enclosures are made of copper-free aluminium (<0.1%) and EJW enclosures of welded steel. All enclosures are coated with a grey epoxy resin.

Covers and enclosures are mounted on a flameproof flange plate and screwed down with stainless steel screws.

Enclosures of the types EJB 12R to EJB 23R are fitted with hinges for easy opening and closing.



EJB 12A

EJB 14R

EJB 23R

EJB 110

Technical data

	Ex EJB/EJW enclosures light alloy/sheet steel
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB
EC-Type Examination Certificate	LOM 02 ATEX 3060 U
Application temperature[1)]	–20 °C up to +40 °C
Rated voltage	690 V
Rated current	1200 A
Protection class	I
Degree of protection accd. to EN 60529	IP65
Weight	see ordering details
Enclosure material	EJB in aluminium EJB 241 M1 and M2 cast iron EJW welded steel Front panels cast iron
Enclosure colour	epoxy-resin finish, grey

[1)] Depend on installation

EJB 120

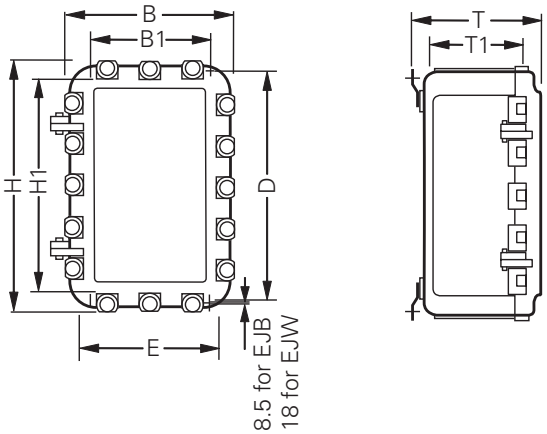
EJB 130

EJB 241 M1

Ordering details

Content	Power dissipation in Watt			Rated current in A	Weight kg	Rail fixing dimension mm		Enclosure size mm			Intern. space mm			Order No.
	T6	T5	T4			D	E	H	B	T	H1	B1	T1	
EJB 12 R	30	60	100	40	3.0	242	166	215	131	102	178	89	57	**NOR 000 001 170 438**
EJB 12 A	30	60	100	40	3.6	242	166	215	131	162	178	89	110	**NOR 000 001 170 446**
EJB 14 R	80	140	240	65	8.3	436	178	412	150	143	358	103	85	**NOR 000 001 170 462**
EJB 23 R	60	140	240	100	11.0	354	240	336	217	212	276	163	152	**NOR 000 001 170 488**
EJB 110	125	170	295	160	22.0	310	310	373	373	230	305	305	162	**NOR 000 001 170 496**
EJB 120	150	270	480	300	28.5	414	310	474	373	230	405	305	162	**NOR 000 001 170 503**
EJB 120 M3	150	270	480	300	28.5	414	310	474	373	230	405	305	162	**NOR 000 111 170 601**
EJB 120 M4	150	270	480	300	28.5	414	310	474	373	230	405	305	162	**NOR 000 111 170 606**
EJB 121	150	280	500	350	32.0	414	310	474	373	295	405	305	235	**NOR 000 001 170 511**
EJB 130	200	340	590	450	35.3	520	310	577	373	230	518	305	162	**NOR 000 001 170 529**
EJB 131	200	350	610	500	39.0	520	310	577	373	295	518	305	235	**NOR 000 001 170 537**
EJB 240	250	400	700	800	52.3	624	414	680	474	230	619	405	162	**NOR 000 001 170 545**
EJB 241	250	400	700	850	56.8	624	414	680	474	295	619	405	235	**NOR 000 001 170 553**
EJB 241 M1	250	400	700	850	54.0	624	414	680	474	295	619	405	235	**NOR 000 111 170 469**
EJW 250	250	340	560	1200	145.0	852	387	890	425	280	810	345	199	**NOR 000 001 190 139**
EJW 251	380	520	850	1200	167.0	852	387	890	425	440	810	345	320	**NOR 000 001 190 197**
EJW 350	380	520	850	1200	168.0	852	502	890	540	322	810	460	250	**NOR 000 001 190 171**
EJW 351	450	600	1000	1200	175.0	852	502	890	540	446	810	460	375	**NOR 000 001 190 062**
EJW 561	600	730	1000	1200	380.0	1242	687	1280	765	386	1200	685	325	**NOR 000 001 190 064**

Dimension drawing



Ex-Enclosure IIB metal enclosure

Dimensions in mm

Motor starter

Technical data

	Ex EJB light-alloy motor starter
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB T6
EC-Type Examination Certificate	LOM 03 ATEX 2004 X
Permissible ambient temperature	–20 °C up to +40 °C
Rated voltage	690 V
Rated current	63 A
Protection class	I
Connecting terminals	up to max. 240 mm^2
Degree of protection accd. to EN 60529	IP65
Dimensions (L x H x W)	see dimension drawing
Weight	see ordering details
Enclosure material	EJB in aluminium Front panels cast iron
Enclosure colour	epoxy-resin finish, grey

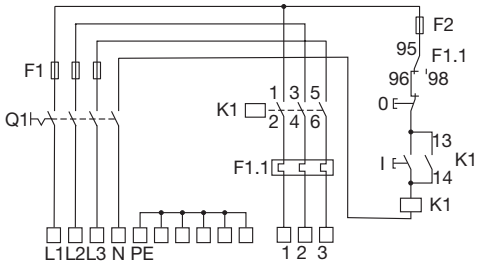
Ordering details

Motor capacity	Main switch	Cable gland	Weight	Module size	Order No.
Type: Direct circuit					
4.0 kW	25 A	2 x M 25 Ex-d	4.0 kg	1	**EXKO 732 101 M**
4.0 kW	25 A	2 x M 25 Ex-d	12.0 kg	2	**EXKO 732 102 M**
5.5 kW	40 A	2 x M 25 Ex-d	12.0 kg	2	**EXKO 732 103 M**
8.0 kW	40 A	2 x M 25 Ex-d	16.8 kg	3	**EXKO 732 104 M**
12.5 kW	63 A	2 x M 32 Ex-d	17.2 kg	3	**EXKO 732 105 M**
15.0 kW	63 A	2 x M 32 Ex-d	18.8 kg	3	**EXKO 732 106 M**
Type: Star-delta starter					
12.5 kW	40 A	2 x M 25 Ex-d	17.2 kg	2	**EXKO 732 113 M**
18.5 kW	40 A	2 x M 32 Ex-d	19.7 kg	2	**EXKO 732 114 M**
25.0 kW	40 A	2 x M 32 Ex-d	25.3 kg	3	**EXKO 732 115 M**
Type: Reversing circuit					
4.0 kW	25 A	2 x M 25 Ex-d	4.0 kg	1	**EXKO 732 107 M**
4.0 kW	25 A	2 x M 25 Ex-d	12.0 kg	2	**EXKO 732 108 M**
5.5 kW	40 A	2 x M 25 Ex-d	12.0 kg	2	**EXKO 732 109 M**
8.0 kW	40 A	2 x M 25 Ex-d	16.8 kg	3	**EXKO 732 110 M**
12.5 kW	63 A	2 x M 32 Ex-d	17.2 kg	3	**EXKO 732 111 M**
15.0 kW	63 A	2 x M 32 Ex-d	18.8 kg	3	**EXKO 732 112 M**

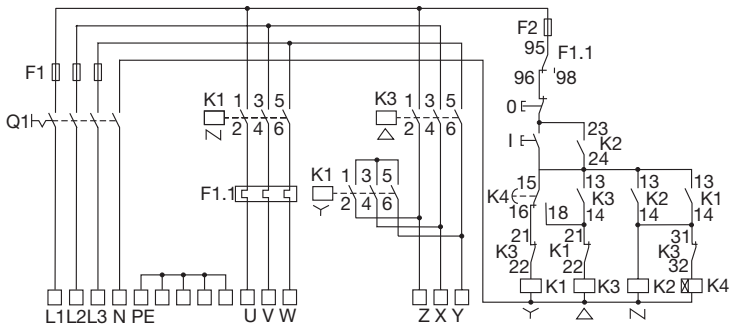
Other switching capacities, soft starter and variable speed drives on request

Motor starter

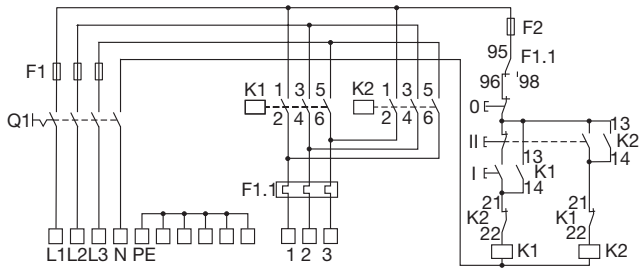
Wiring diagram I Dimension drawing



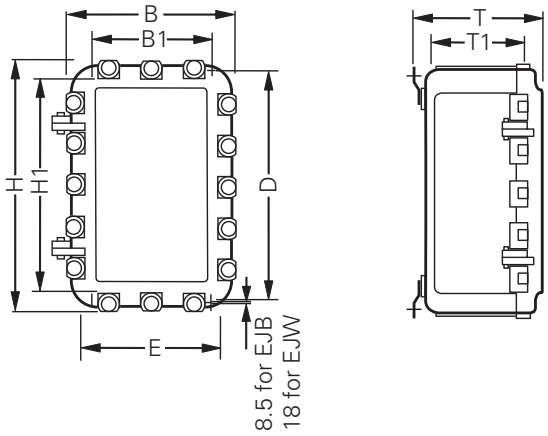
Direct on-line starter



Star-delta starter



Reversing circuit



Version	Rail fixing dimensions mm		Enclosure size mm			Internal space mm		
	D	E	H	B	T	H1	B1	T1
1	242	166	215	131	102	178	89	57
2	436	178	412	150	143	358	103	85
3	354	240	336	217	212	276	163	152

Dimensions in mm

Signal lamp

Key-operated switch

Mushroom-head pushbutton

Pushbutton

Technical data

	Signal lamp
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB
EC-Type Examination Certificate	LOM 02 ATEX 3060 U
Application temperature[1)]	–20 °C up to +40 °C
Rated voltage	500 V
Rated power consumption	3 W
Connecting terminals	2 x 2.5 mm²
Degree of protection accd. to EN 60529	IP65
Weight	see ordering details
Enclosure material	body material aluminium window material white, yellow, red or green polycarbonate
Lamp cap	Ba 9 s

	Pushbutton | Mushroom-head pushbutton | Key-operated switch
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB
EC-Type Examination Certificate	LOM 02 ATEX 3060 U
Application temperature[1)]	–20 °C up to +40 °C
Rated voltage	500 V
Rated current	10 A
Connecting terminals	2 x 2.5 mm²
Degree of protection accd. to EN 60529	IP65
Weight	see ordering details
Enclosure material	Aluminium

[1)] Depend on installation

Pushbutton

Mushroom-head pushbutton

Key-operated switch

Signal lamp

Ordering details

Description	Colour	Order No.
Signal lamp		
Incandescent lamp 240 V, 3 W	white, yellow, red, yellow-green	**NOR 000 001 170 016**
Incandescent lamp 130 V, 2.6 W	white, yellow, red, yellow-green	**NOR 000 001 170 017**
Incandescent lamp 24 V, 1.2 W	white, yellow, red, yellow-green	**NOR 000 001 170 018**
Transformer incandescent lamp 380-400/6V, 1.2 W	white, yellow, red, yellow-green	**NOR 000 001 170 019**
LED 230 V	white, yellow, red, yellow-green	**NOR 000 001 170 116**
LED 130 V	white, yellow, red, yellow-green	**NOR 000 001 170 117**
LED 24 V	white, yellow, red, yellow-green	**NOR 000 001 170 118**

Description	Colour	Inscription	Order No.
Pushbutton and mushroom-head pushbutton with contact block 1NC + 1NO			
Pushbutton	white	I O STOP START	**NOR 000 001 170 004**
Pushbutton lockable in pushed position with padlock	white	O STOP OFF	**NOR 000 001 170 005**
Pushbutton lockable in un-pushed position with padlock	white	I O STOP START	**NOR 000 001 170 006**
Mushroom-head pushbutton	red, yellow	O STOP OFF	**NOR 000 001 170 007**
Mushroom-head pushbutton lockable in un-pushed position with padlock	red, yellow	O STOP OFF	**NOR 000 001 170 008**
Mushroom-head pushbutton lockable in un-pushed position with padlock	red, yellow	O STOP OFF	**NOR 000 001 170 009**
Key-operated switch			**NOR 000 001 170 010**
Mushroom-head pushbutton with key unlocking			**NOR 000 001 170 011**
Pushbutton		RESET	**NOR 000 001 170 012**

Description	Colour	Inscription	Order No.
Contact blok (wihtout pushbutton)			
1 NC			**NOR 000 001 170 013**
1 NO			**NOR 000 001 170 014**
Pushbutton label	green, red, yellow, black	II arrow ON RESET TEST	**NOR 000 001 170 015**
Key-operated switch			
0-1, 2 P 12 A			**NOR 000 001 170 020**
0-1, 2 P 25 A			**NOR 000 001 170 021**
0-1, 3 P 25 A			**NOR 000 001 170 022**
1-2, 1 P 12 A			**NOR 000 001 170 023**
1-2, 2 P 12 A			**NOR 000 001 170 024**
1-0-2, 1 P 12 A			**NOR 000 001 170 025**

Cable bushing

Rotary actuator <250 A

Rotary actuator <63 A

Window

Technical data

		Window
Marking accd. to 2014/34/EU		Ⓔx II 2 G Ex d IIB
EC-Type Examination Certificate		LOM 02 ATEX 3060 U
Application temperature[1)]		–20 °C up to +40 °C
Degree of protection accd. to EN 60529		IP65
Dimensions (L x H x W)		60 x 60 mm 75 x 75 mm 110 x 50 mm 110 x 75 mm
Enclosure material	frame material window material	aluminium borosilicate glass
Enclosure colour		epoxy resin finish, grey

	Rotary actuator
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB
EC-Type Examination Certificate	LOM 02 ATEX 3060 U
Application temperature[1)]	–20 °C up to +40 °C
Rated voltage	500 V
Rated current	25 A 63 A 250 A 500 A
Degree of protection accd. to EN 60529	IP65
Enclosure material	Aluminium
Enclosure colour	stainless steel finish
Options	Locking facility for units up to 40 A. on front panel, for units > 40 A on enclosure panel.

	Cable bushing
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB
EC-Type Examination Certificate	LOM 02 ATEX 3060 U
Application temperature[1)]	–20 °C up to +40 °C
Rated voltage	690 V
Rated current	50 A 75 A 150 A
Size	4 x 10 mm^2 + 1 x 6 mm^2 up to zu 9 x 1.5 mm^2 + depends on use (50 A) 4 x 16 mm^2 + 1 x 10 mm^2 up to zu 9 x 1.5 mm^2 + depends on use (75 A) 4 x 50 mm^2 + 1 x 10 mm^2 up to zu 47 x 1.5 mm^2 + depends on use (150 A)
Degree of protection accd. to EN 60529	IP65
Material	bichromatised hexagonal steel
Cable sealing	high-thermal and chemical-resistant compound

[1)] Depend on installation

Window

Rotary actuator <63 A

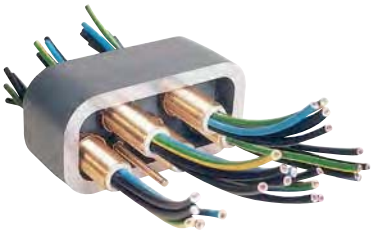
Rotary actuator <250 A

Cable bushing

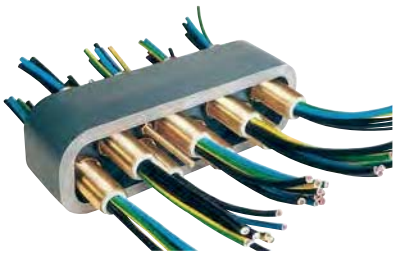
Ordering details

Description	Order No.
Rotary switch	
Rotary switch, 1-0-2, 2 P, 12 A	**NOR 000 001 170 026**
Rotary switch, 0-1, 2 P, 12 A	**NOR 000 001 170 027**
Rotary switch, 0-1-M, 2 P, 12 A	**NOR 000 001 170 028**
Rotary actuator for main switch:	
Main switch, 25 A up to < 63 A	**NOR 000 001 170 029**
Main switch, 63 A up to < 100 A	**NOR 000 001 170 030**
Main switch, 100 A up to < 250 A	**NOR 000 001 170 031**
Main switch, 250 A up to < 1000 A	**NOR 000 001 170 032**
Plain labels for switch	
Plain labels for switch, 60 x 60	**NOR 000 001 170 033**
Plain labels for switch, 70 x 70	**NOR 000 001 170 034**
Plain labels for switch, 85 x 85	**NOR 000 001 170 035**
Rotary actuator for MCBs	
Rotary actuator for MCBs 1-pole ABB	**NOR 000 001 170 933**
Rotary actuator for MCBs Multipole ABB	**NOR 000 001 170 925**
Rotary actuator for MCBs 1-pole M&G	**NOR 000 001 170 600**
Rotary actuator for MCBs Multipole M&G	**NOR 000 001 170 569**
Rotary actuator for MCBs POWER	**NOR 000 001 170 565**

	Thread	Content	Order No.
Cable bushing			
50 A 4 x 10 mm2 + 1 x 6 mm2	3/4" NPT	3P+N+PE	**NOR 000 001 170 892**
75 A 4 x 16 mm2 + 1 x 10 mm2	1" NPT	3P+N+PE	**NOR 000 001 170 909**
150 A 4 x 50 mm2 + 1 x 10 mm2	1 1/2" NPT	3P+N+PE	**NOR 000 001 170 917**
Window			
60 x 60 mm, Type M 6060			**NOR 000 001 170 000**
75 x 75 mm, Type M 7575			**NOR 000 001 170 001**
110 x 50 mm, Type M 11050			**NOR 000 001 170 002**
110 x 75 mm, Type M 11075			**NOR 000 001 170 003**
Blanking plug			
Blanking plug			**NOR 000 001 170 154**



Size 1 > 150 A ≤ 350 A

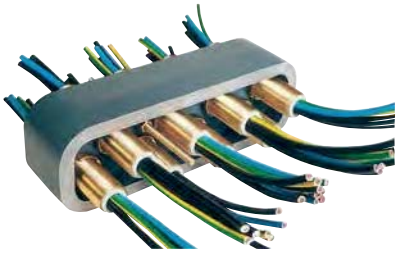


Size 2 > 630 A ≤ 800 A

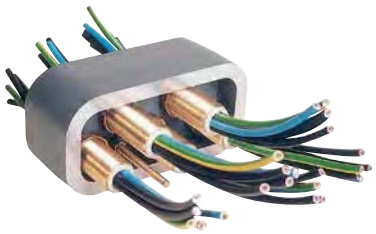
Technical data

	Bus bar for interconnection of enclosoures
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIB
EC-Type Examination Certificate	LOM 02 ATEX 3060 U
Application temperature[1)]	–20 °C up to +40 °C
Rated voltage	690 V AC
Rated current	150 A 350 A 500 A 800 A
Wire cross section Size 1 up to 150 A 3P+N+PE Size 1 up to 350 A 3P+N+PE Size 1 up to 500 A Size 1 up to 800 A	 4 x 10 mm^2 + 1 x 6 mm^2, up to 9 x 1.5 mm^2 + depends on use Aluminium coupler 208 x 102 mm, comprising 4 bars, (3P+N) 350 A, 1 auxiliary bushing max. 19 x 1.5 mm^2, 1 PE-rail Aluminium coupler 208 x 102 mm, comprising 4 bars, (3P+N) 500 A, 1 auxiliary bushing max. 19 x 1.5 mm^2, 1 PE-rail Aluminium coupler 310 x 102 mm, comprising 7 bars, (3P+N) 800 A, 1 auxiliary bushing max. 19 x 1.5 mm^2, 1 PE-rail
Degree of protection accd. to EN 60529	IP65
Dimensions (L x H x W)	60 x 60 mm 75 x 75 mm 110 x 50 mm 110 x 75 mm
Enclosure material	Duroplastic
Cable sealing	high-thermal and chemical-resistant compound

[1)] Depend on installation



Size 2 > 630 A ≤ 800 A



Size 1 > 150 A ≤ 350 A

Ordering details

Description	Enclosure size	Order No.
Bus bars for interconnection of enclosures		
Aluminium coupler 208 x 102 mm, comprising 4 bars, (3P+N+PE) ≤350 A, 1 auxiliary bushing max. 19 x 1.5 mm², 1 PE-rail	1	**NOR 000 001 170 036**
Aluminium coupler 208 x 102 mm, comprising 4 bars, (3P+N+PE) >350 A ≤ 500 A, 1 auxiliary bushing max. 19 x 1.5 mm², 1 PE-rail	1	**NOR 000 001 170 037**
Aluminium coupler 310 x 102 mm, comprising 4 bars, (3P+N+PE) >500 A ≤ 630 A, 1 auxiliary bushing max. 19 x 1.5 mm², 1 PE-rail	2	**NOR 000 001 170 038**
Aluminium coupler 310 x 102 mm, comprising 3 x 2 + 1 bars, (3P+N+PE) >630 A ≤ 800 A, 1 auxiliary bushing max. 19 x 1.5 mm², 1 PE-rail	2	**NOR 000 001 170 039**

GUB 00

GUB 20

GUB 30

Technical data

	Ex d light alloy enclosure GUB
Marking accd. to 2014/34/EU	Ⓔx II 2 G Ex d IIC Gb Ⓔx II 2 D Ex t IIIC Gb
EC-Type Examination Certificate	LOM 03 ATEX 3107U
Permissible ambient temperature	–20 °C up to +40 °C –60 °C up to +55 °C (option)
Rated voltage	690 V
Rated current	max. 250 A
Protection class	I
Degree of protection accd. to EN 60529	IP67
Cable glands/enclosure drilling	1)
Dimensions (L x W x H)	1)
Weight	1)
Enclosure material	copper-free aluminium
Enclosure colour	Polyester finish grey

1) see table

Ordering details

Type	Power dissipation 1)			Rated current	Weight		Order No.
	T6	T5	T4	max.	approx.		
Ex d light alloy empty enclosures GUB							
GUB 00	60	85	150	60 A	3.20 kg		**NOR 000 001 160 116**
GUB 20	100	145	255	150 A	6.20 kg		**NOR 000 001 160 124**
GUB 30	140	200	360	250 A	10.20 kg		**NOR 000 001 160 132**
Type	**1/2"**	**3/4"**	**1"**	**1 1/4"**	**1 1/2"**	**2"**	**2 1/2"**
Max. entries per side							
GUB 00	4	3	2	2	2	–	–
GUB 20	6	5	3	2	2	1	1
GUB 30	10	8	5	3	3	2	2

1) Power dissipation to keep the temperature class only. Operating temperature of internal components has to be considered.

These enclosures can provide according to LOM 04 ATEX 2018 certification with the following electrical apparatus:

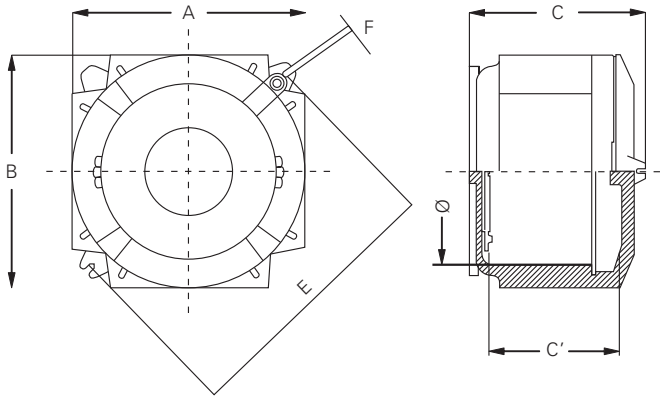
bus-bars, terminals, low voltage transformers, air circuit breakers, automatic circuit breakers, control and operations circuits, servomotors without ventilation, starters and ballasts for discharge lamps, electronic apparatus, associated SI apparatus, etc. according customer needs.

GUB 30

GUB 20

GUB 00

Dimension drawing



Ex d light alloy enclosure GUB

Type	External			Internal		Mounting	
	A	B	C	Ø	C′	E	F
GUB 00	170	170	135	125	74	210	9
GUB 20	215	215	195	175	139	250	11
GUB 30	333	333	180	295	120	370	11

Dimensions in mm