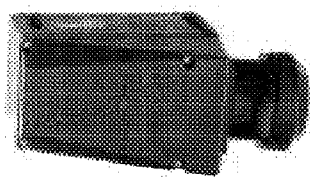
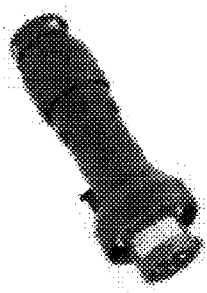


GHG 512 ---

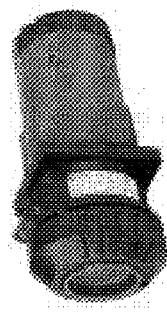
GHG 512



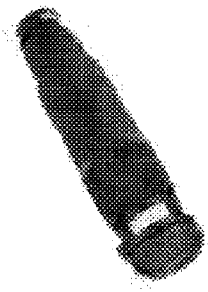
Wall socket



Plug



Flange socket



Coupler

# Technical data

Ex-plugs and sockets CEE and IEC 309-1/2

Marking to 94/9/EC

Type of protection

EC-Type Examination Certificate

Degree of protection

Rated voltage

Rated current

Frequency

Switching capacity AC/3

Back-up fuse, max.

Cable entries

Connection terminals

\* II 2 D applied for

Ex II 2 G/Ex II 2 D\*

Ex Ex de IIC T6

Wall socket, plug and coupler

Flange socket:

IP 66 to EN 60529

up to 690 V~

max. 32 A

50/60 Hz

up to 690 V~/32 A

without thermal protection: 35 A,

with thermal protection: 35 A/40 A gL

1 x M40, 1 x M40 Ex-blanking plug plastic (bottom)

or 2 x M32 Ex-blanking plug, metal version

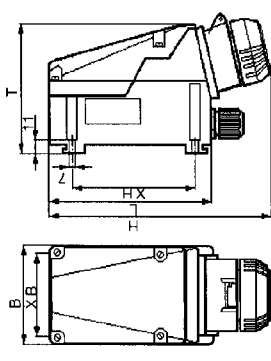
Ø 12 - 28 mm

Wall socket: 2 x 4 - 10 mm²

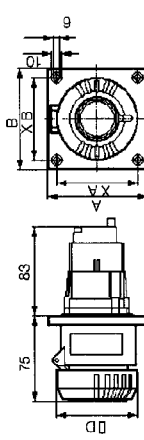
Plug and coupler: 1 - 6 mm²

Dimensions in mm x.. = Fixing dimensions

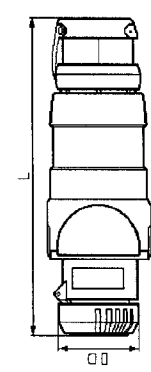
## Wall socket



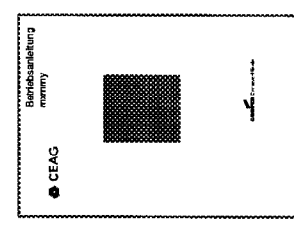
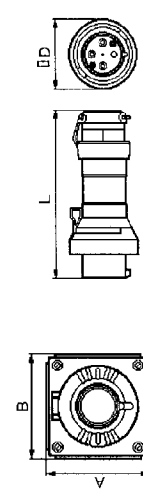
## Flange socket



## Coupler

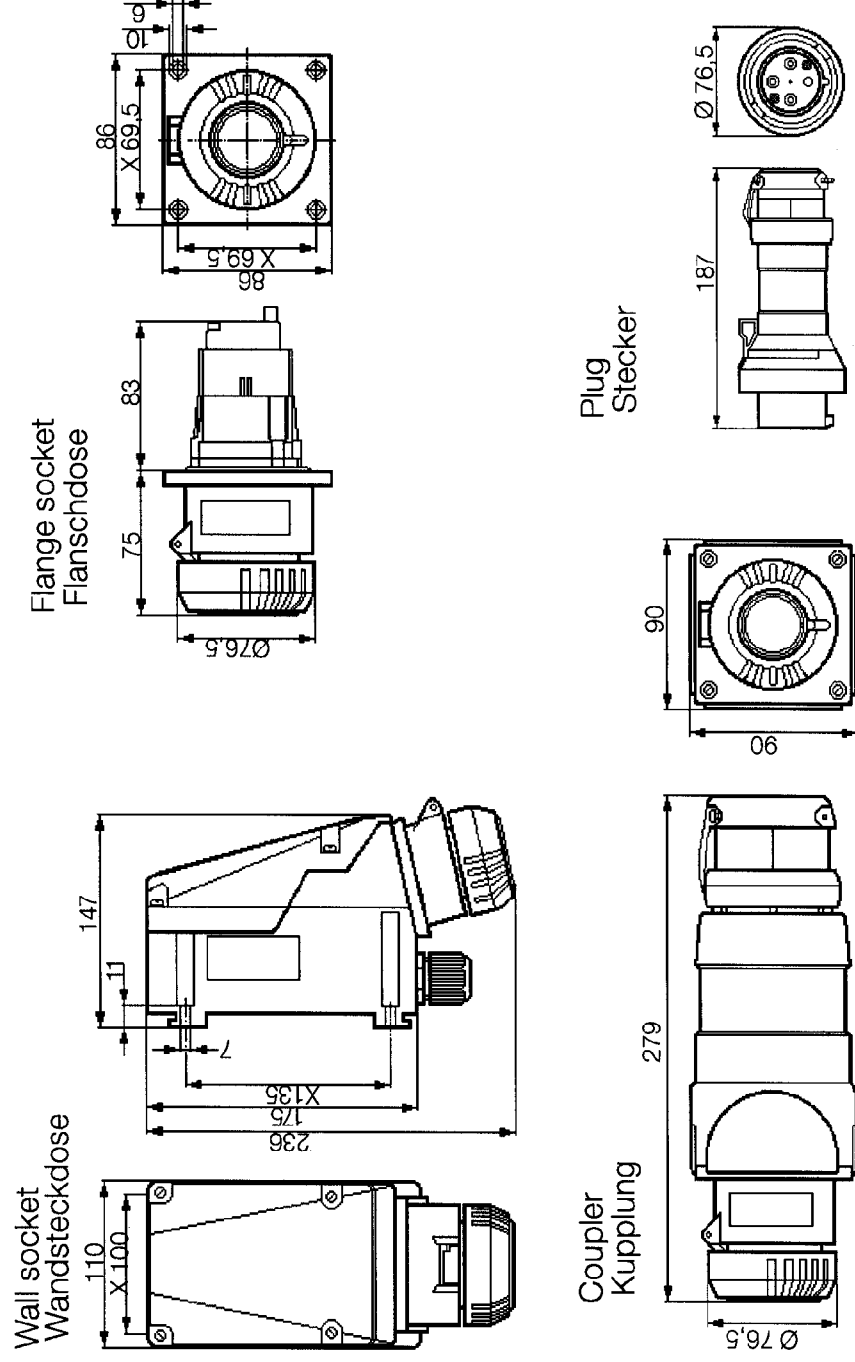


## Plug



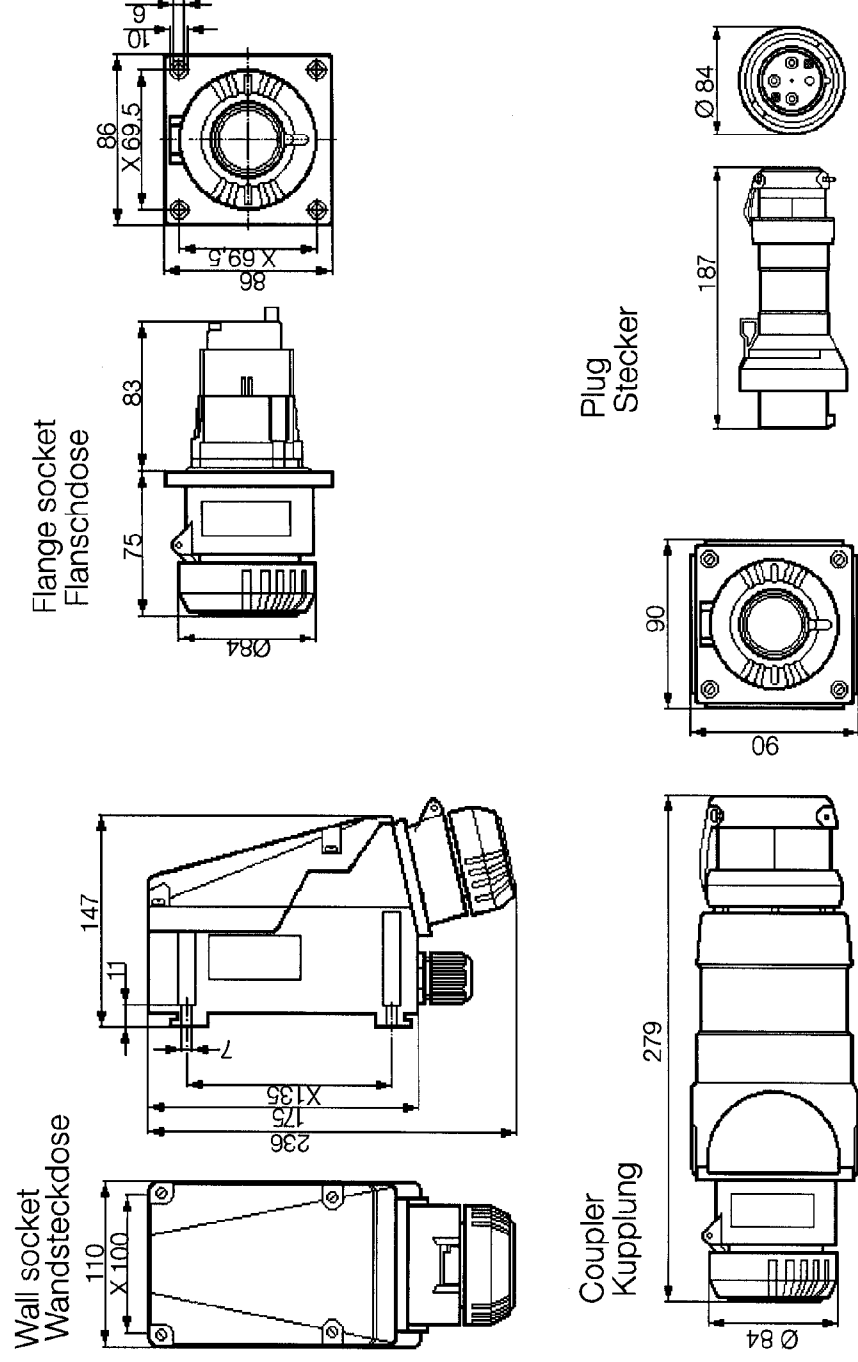
CEAG Sicherheitstechnik GmbH

# **Maßbild Ex-Steckvorrichtungen 16 A/220 V - 690 V, 4-polig/ Dimension Drawing Ex-Plugs and Sockets 16 A/220 V - 690 V, 4-Pole**



X = Befestigungsmaße  
X = fixing dimensions

# **Maßbild Ex-Steckvorrichtungen 16 A/380 V - 415 V, 5-polig/ Dimension Drawing Ex-Plugs and Sockets 16 A/380 V - 415 V, 5-Pole**

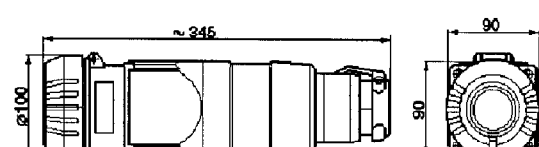
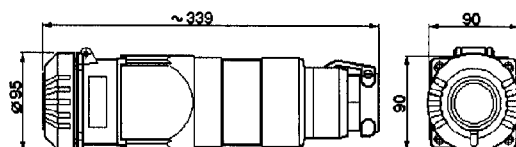
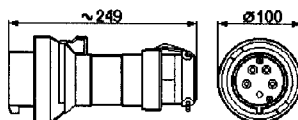
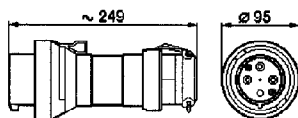
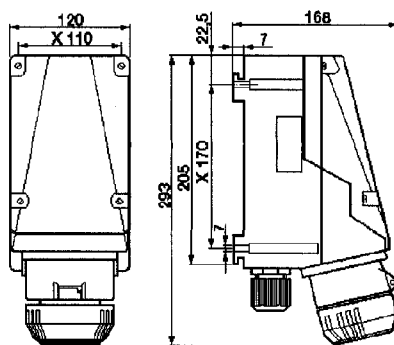
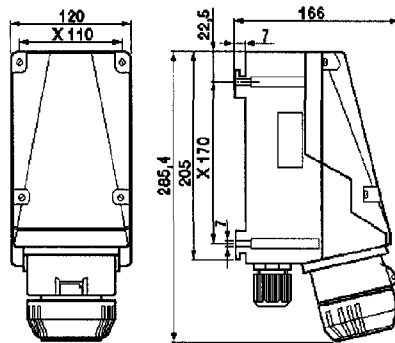
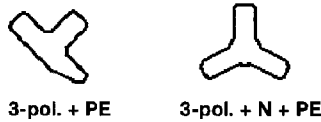


X = Befestigungsmaße  
X = fixing dimensions

# Explosion protected plug and socket system 32A, GHG 512

Dimensions in mm  
X = fixing dimensions

Code Zone 1



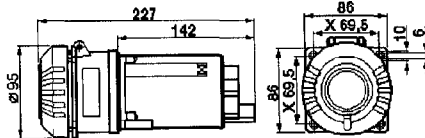
## 1 Technical data

### 1.1 Plug and socket GHG 512

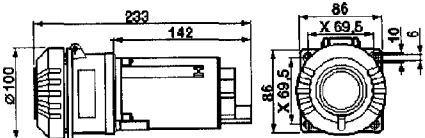
Marking acc. to 94/9/EC:			II 2 G	
Explosion category:			EEx ed II C T6 / T5	
EC type examination certificate:				
Wall socket	4-pole	GHG 512 44	PTB 99 ATEX 1041	
Plug	4-pole	GHG 512 74	PTB 99 ATEX 1041	
Coupler	4-pole	GHG 512 34	PTB 99 ATEX 1041	
Flange socket	4-pole	GHG 512 84	PTB 99 ATEX 1042 U	
Wall socket	5-pole	GHG 512 45	PTB 99 ATEX 1041	
Plug	5-pole	GHG 512 75	PTB 99 ATEX 1041	
Coupler	5-pole	GHG 512 35	PTB 99 ATEX 1041	
Flange socket	5-pole	GHG 512 85	PTB 99 ATEX 1042 U	
Rated voltage:			up to 690 V, 50/60 Hz	
Rated current:			max. 32 A	
Back-up fuse:				
without thermal protection			max. 35 A	
with thermal protection			max. 50 A gL	
Switching capacity AC 3:			690 V / 32 A	
Perm. ambient temperature:			-20° C to +40° C (catalogue version)	
Special versions permit deviating temperatures				
Perm. storage temperature in original packing:			-40° C to +80° C	
Protection category acc. to EN 60529/IEC 529				
with closed and secured hinged cover as well				
as combinations properly plugged together			IP 66 (catalogue version)	
Insulation class acc. to EN 60598/IEC 598:			I - is complied with by the devices	
Cable entry:			(catalogue version)	
Wall socket			1x M40 (Ø17-28mm) + 1x blanking plug M40	
Plug / Coupler			Ø 12 - 28 mm	
Supply terminal:			Cross section	
Wall socket			2 x 4,0 - 10 mm <sup>2</sup> 12 mm	
Coupler			2 x 4,0 - 10 mm <sup>2</sup> 12 mm	
Flange socket			2 x 4,0 - 10 mm <sup>2</sup> 12 mm	
Plug			1 x 1,0 - 6 mm <sup>2</sup> 10 mm	
Test torques:				
Cap nut of the M 40 entry			5.0 Nm	
Cover screws			2.5 Nm	
Terminals, plug			2.5 Nm	
Terminals, wall socket			3.5 Nm	
Terminals, flange socket			3.5 Nm	
Terminals, coupler			3.5 Nm	
Self-cutting screws size 4			2.0 Nm	
Self-cutting screws size 5			3.0 Nm	
Weight:			(catalogue version)	
Wall socket	4-pole	GHG 512 44	approx. 2.25 kg	
Plug	4-pole	GHG 512 74	approx. 0.55 kg	
Coupler	4-pole	GHG 512 34	approx. 1.50 kg	
Flange socket	4-pole	GHG 512 84	approx. 1.00 kg	
Wall socket	5-pole	GHG 512 45	approx. 2.30 kg	
Plug	5-pole	GHG 512 75	approx. 0.60 kg	
Coupler	5-pole	GHG 512 35	approx. 1.60 kg	
Flange socket	5-pole	GHG 512 85	approx. 1.05 kg	
Auxiliary contact:				
Rated voltage:			250 VAC	
Rated current:			AC / 5 A DC / 0.03 A	

# Explosion protected plug and socket system 32A, GHG 512

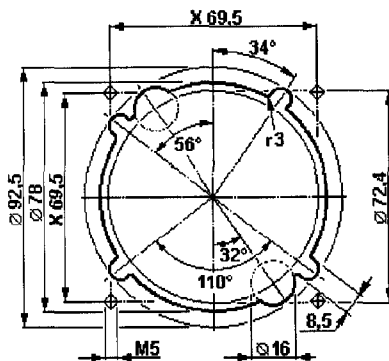
Dimensions in mm  
X = fixing dimensions



Flange socket 4-pole



Flange socket 5-pole



Drilling template for flange sockets  
4-pole and 5-pole

## 2 Safety instructions



**The GHG 512 plugs and sockets are not suitable for Zone 0 hazardous areas.**

**The temperature class and explosion group marked on the apparatus shall be observed.**

**Modifications to the plugs and sockets or changes of their design are not permitted. They shall be used for their intended purpose and in perfect and clean condition.**

**For replacement and repair only genuine CEAG spare parts shall be used. Repairs that affect the explosion protection, may only be carried out by CEAG or a qualified electrician in compliance with the respective national regulations.**

**Prior to taking the plugs and sockets into operation, they will have to be checked in acc. with the instruction as per section 6. The sockets may only be used with the associated CEAG plugs in undamaged condition. The interlocking switch of the socket is mechanically secured by means of spring-loaded locking pins and cannot be connected without plug.**

**Before the initial operation, any foreign matter will have to be removed from the the plugs and sockets. Observe the national safety rules and regulations for prevention of accidents as well as the safety instructions included in these operating instructions and set in italics the same as this text!**

## 3 Conformity with standards

The plugs and sockets meet the requirements of EN 50014, EN 50018, EN 50019 and EN 60309 1/2. (Comparable international standards IEC 79-0, IEC 79-1, EN 309-1/2). 94/9 EC: Equipment and protective systems intended for use in potentially explosive atmospheres.

The plugs and sockets also fulfil further requirements such as those of the directive on electromagnetic compatibility (89/336/EEC).

They have been designed, manufactured and tested according to the state of the art and to DIN EN ISO 9001.

## 4 Field of application

The plugs and sockets GHG 512 are suitable for use in Zone 1 and 2 and 11 hazardous areas acc. to VDE 0165 and IEC 79-10!

The enclosure materials employed, including the exterior metal parts, are made of high-quality materials which ensure a corrosion protection and

resistance to chemical substances corresponding to the requirements in a "normal industrial atmosphere":

- impact resistant polyamide
- glass-fibre reinforced polyester
- special steel AISI 316 L

In case of use in an extremely aggressive atmosphere, the additional data on the employed plastic materials' resistance against chemicals will have to be taken from the data sheet GHG 902 4001 P0001.

## 5 Use/Properties

The GHG 512 plugs and sockets are used for the power supply of local controls with varying locations, as well as of electrical installations, mobile machinery and driving gear in hazardous areas. The plugs and sockets can also be used in a „normal industrial area“.

The low-voltage plugs and sockets GHG 512 are fitted with a load break switch and can be used up to max. 32 A (see technical data). The plugs and sockets can generally be used for the voltage range laid down in IEC 309 (e.g.  $U_N$  400V that corresponds to the voltage range 380-415V).

**The apparatus connected to the plug shall be suitable for the applied mains voltage.**

In order to switch on the socket, the plug is inserted, pushed fully home and then turned through approx. 45° to the right. Thereby the plug is locked in the socket (see page 9, fig. 1). For switching off and pulling the plug, proceed in inverse order.

After separating the plug from the socket, the latter shall be closed with the hinged cover and secured with the bayonet ring.

The plug can be pushed into the socket and pulled out of it only whilst the socket is switched off.

In order to activate the socket, the plug is pushed fully home. Then the switching ring on the plug can be turned through 45° to the right in order to unlock the interlocking switch (see page 9 fig.1)!

In order to ensure the socket's type of protection acc. to the type label also with the plug being inserted, the bayonet ring of the plug (page 9, fig. 2, item 2) is turned to its stop onto the socket.

**The data as per point 3 and 4 will have to be taken into account with the use.**

**Applications other than described are not permitted without CEAG's prior written consent.**

**For the operation, the instructions stated in section 7 of the operating instructions will have to be observed.**

**From time to time, the locking function protecting against inappropriate use e. g. of industrial plugs in zone 1, has to be checked.**

# Explosion protected plug and socket system 32A, GHG 512

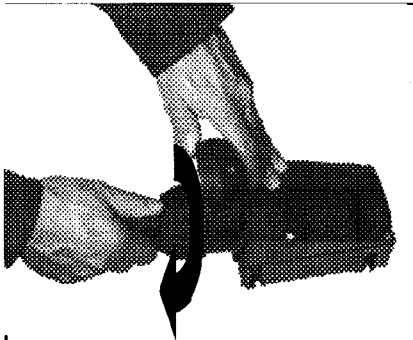
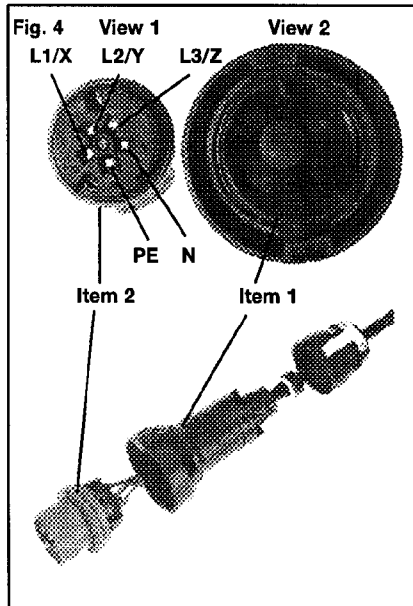
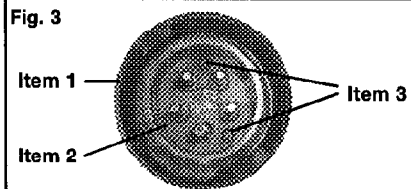
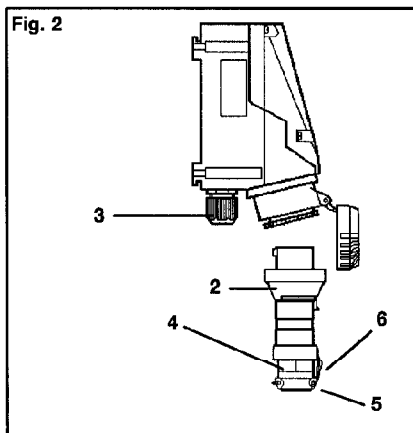


Fig. 1 Switching operation



In the open air, the plugs must be kept with the plug opening (pin side) pointing downwards or be closed with protective plug caps available as an optional extra (see general catalogue).

*The user alone is responsible for the appropriate use of this plug and socket system in consideration of the basic conditions existing at the plant (see technical data).*

*After a short in the circuit, the functioning of the plug and socket system and of the plugs has to be checked.*

*Since the switch contacts can no more be checked because of the flameproof enclosure, the complete switch insert (flange socket) will have to be replaced after repeated short circuits.*

## 6 Installation

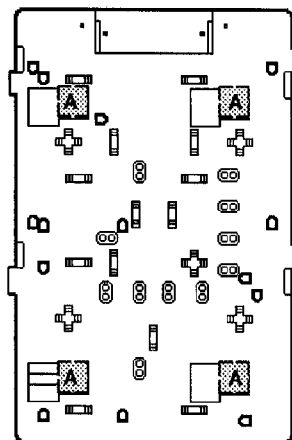
For the mounting and operation, the respective national regulations (e. g. ElexV, equipment safety law for Germany) as well as the general rules of engineering will have to be observed.

### 6.1 Mounting

The wall sockets can be mounted without opening their enclosure. In case the wall sockets are mounted directly onto the wall, they may rest evenly only at the respective fastening points. The chosen screw shall match the fastening hole (see dimensional drawing) and it must not damage the hole (e. g. use of a washer). The device shall be fastened diagonally with at least 2 screws.

The wall sockets can be clipped onto the CEAG mounting plate size 5. They are laterally pushed into the guiding groove on the left-hand side of the mounting plate.

The respective mounting instructions will have to be observed.



Fastening point A  
wall socket 32A

*The wall sockets, flange sockets and couplers shall be mounted so that the plug hole does not point upwards (fig. 2).*

### 6.2 Opening the device/ Electrical connection

The electrical connection of the device may only be carried out by skilled staff.

*The insulation of the conductors shall reach up to the terminal. The conductor itself shall not be damaged.*

Taking into account the respective regulations, the properly bared conductors of the cables shall be connected.

When using 10mm<sup>2</sup> cables for connection it is recommended to cut back the outer sheath for approx. 200mm and remove the required length of insulation on each core before entering cable into the socketoutlet.

The plug insert (item 2, fig. 4) is removed from the pin bushing (item 1, fig. 4), after the fastening screws (item 3, fig. 3) have been unscrewed. Thereafter, the plug insert can be connected to the connections of the plug pins (see view 1, fig. 4).

*Attention: When the fastening screws (item 3, fig. 3) get lost, they will have to be replaced by similar screws or to be ordered directly from the manufacturer.*

Assembly is made in inverse order, after the cable has been connected. The connectible min. and max. conductor cross-sections shall be observed (see technical data). All screws and/or nuts of the supply terminals, also of those remaining vacant, shall be tightened down.

*The conductors shall be connected with special care in order to maintain the explosion category.*

The supply terminals are designed for the connection of copper conductors. If multi- or fine-wire connecting cables are used, the wire ends will have to be handled in acc. with the applicable national and international rules (e. g. use of sleeves for strands).

### 6.3 Cable entries (KLE); blanking plugs

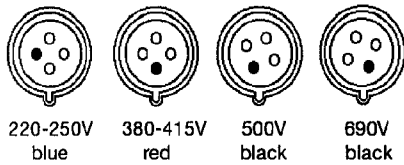
#### 6.3.1 Socket

*Generally, only certified cable entries and blanking plugs are permitted for use. Flexible cables shall be used with trumpet-shaped cable glands or other suitable entries with additional pull-relief.*

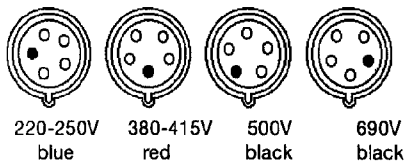
# Explosion protected plug and socket system

## 32A, GHG 512

### GHG 512, 4-pole 50/60Hz



### GHG 512 5-pole 50/60Hz



When using cable entries with a lower IP protection than that which applies to the device (see page 3, technical data), the IP protection of the whole device will be reduced. The mounting directives applicable to the cable entries used shall be observed. Unused holes shall be closed with a certified blanking plug in order to establish the minimum protection category. In case of sealing inserts that are cut out, it shall be ensured that the insert is properly adapted to the cable diameter. Care has to be taken that when fitting the cable entries, sealing inserts appropriate to the cable diameter are used. In order to ensure the required minimum protection category, the cable glands are to be tightened down.

**Overtightening might impair the protection category.**

All vacant metric CEAG cable entries shall be closed with the certified blanking plug for metric cable entries.

#### 6.3.2 Plug/coupler

In general, only the sealing inserts fitted in the plug or in the coupler may be used. When mounting the cable, attention has to be paid that sealing inserts matching the cable diameter be used. After having mounted the cable, the coupling ring (page 9, item 3, fig. 2) is to be screwed fingertight until the sealing effect is obtained. Then the screws item 5 of the pull-relief item 6, are to be tightened down.

**Mind! Overtightening might impair the pull-relief effect!**

#### 6.4 Closing the device

In order to ensure the required minimum protection category, the cover screws, the screws of the plug and of the coupler shall be tightened down.

The screws of the plug and the coupler shall be tightened down.

**Overtightening might impair the protection category. Any foreign matter shall be removed from the device.**

#### 6.5 Taking into operation

Prior to taking the apparatus into operation, the tests specified in the relevant national regulations shall be carried out. Apart from that, the correct functioning and installation of the apparatus in accordance with these operating instructions and other applicable regulations will have to be checked.

Check the plug for any damages before putting it in the socket.

The user must ensure that a uniform equipotential earth applies throughout when the plug and socket system is operated.

**The inappropriate installation and operation of the plugs and sockets can entail the loss of warranty.**

## 7 Maintenance/Serviceing

**The relevant national regulations which apply to the maintenance/servicing of electrical apparatus in explosive atmospheres, shall be observed. (in Germany e. g. ElexV, VDE 0105 part 9). Before opening the enclosure, make sure that the device is disconnected from the voltage, or take appropriate protective measures.**

The required maintenance intervals depend on the specific application and will therefore have to be determined by the user dependent on the conditions of use.

When servicing the plugs and sockets, particularly those parts that are decisive for their type of protection against explosion will have to be checked (e. g. intactness of flameproof enclosed components, of the housing, firm fit of the cable entries and efficacy of gaskets). If during servicing, repairs prove to be necessary, section 8 of these operating instructions will have to be observed.

## 8 Repair/Overhaul/ Modifications

Repairs and overhaul may only be carried out with genuine CEAG spare parts.

**Should the flameproof enclosure be damaged, only a replacement will be permitted. In case of doubt, the respective apparatus will have to be returned to CEAG for repair.**

Repairs that affect the explosion protection, may only be carried out by CEAG or a qualified electrician in compliance with the applicable national rules.

**Modifications to the device or changes of its design are not permitted.**

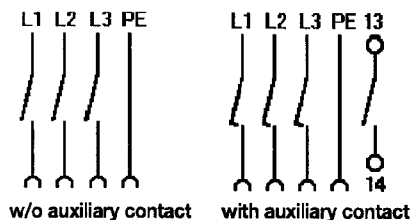
## 9 Disposal/Recycling

When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed. In order to facilitate the recycling of individual components, plastic parts are provided with the identification mark of the plastic material used.

Subject to modifications or supplement of the product range

### Contact arrangement

#### GHG 512, 4-pole 50/60Hz



#### GHG 512, 5-pole 50/60Hz

