



IPC

OPERATION AND MAINTENANCE MANUAL

STATIC DISSIPATIVE / GROUNDED
INDUSTRIAL VACUUM CLEANER SYSTEM
ELECTRICALLY OPERATED
FOR DRY RECOVERY

MODEL: PLANET 22 S ATEX

DUST CLASS "H"

CE  II 3 D

Ex tc IIIC T200°C Dc IP6X

IP Cleaning S.r.l.
via E.Fermi,2
CASTELVERDE (CR) - ITALY
<http://www.ipcworldwide.com>

**READ ALL INSTRUCTIONS BEFORE OPERATING,
CLEANING OR SERVICING**

IMPORTANT - SAVE THESE INSTRUCTIONS

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1.0 INSPECTION

Carefully unpack and inspect your IPCLEANING Vacuum Cleaner for shipping damage. Each vacuum cleaner is tested and thoroughly inspected before being shipped; therefore, any damage is the responsibility of the delivering carrier, who should be notified.

2.0 APPLICATIONS

WARNING: A complete risk assessment has to be conducted by the user for the recovery of dusts in hazardous areas. The recommendations in this manual cannot, in any case, supplant the conclusions of a risk assessment.

IPCLEANING PLANET 22 S ATEX is a static dissipative / grounded industrial vacuum cleaner system, electrically operated for use in potentially explosive atmospheres classified ATEX zone 22 for dust.

PLANET 22 S ATEX vacuum cleaners are certified in conformance with Directive 2014/34/EU for Group II, Category 3. The vacuum cleaners bear the following marking:

  II 3 D
Ex tc IIIC T200°C Dc IP6X

For this equipment an internal control of production according to Directive 2014/34/EU has been performed. The examination and tests results are recorded in a confidential report.

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO BE USED IN ZONES 20 OR 21 HAZARDOUS AREAS. DO NOT USE THIS VACUUM CLEANER IN ZONES 20 OR 21 HAZARDOUS AREAS.

WARNING: This vacuum cleaner is designed for the recovery of dry materials only. Do not recover liquids.

WARNING: Only tools and accessories provided by the manufacturer shall be used with this vacuum cleaner. The use of other tools and accessories may impair safety.

2.1. APPLICATIONS IN POTENTIALLY EXPLOSIVE ATMOSPHERES IN PRESENCE OF FLAMMABLE GASES, VAPORS OR LIQUIDS

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO BE USED IN HAZARDOUS AREAS CONTAINING FLAMMABLE GASES, VAPORS OR LIQUIDS. DO NOT USE THIS VACUUM CLEANER IN HAZARDOUS AREAS CONTAINING FLAMMABLE GASES, VAPORS OR LIQUIDS.

2.2. APPLICATIONS IN POTENTIALLY EXPLOSIVE ATMOSPHERES IN PRESENCE OF COMBUSTIBLE DUST

PLANET 22 S ATEX series are electrically operated, static dissipative / grounded industrial vacuum cleaner systems designed and certified for use in **ATEX Zone 22** classified areas in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but – if it does occur – will persist for a short period only

Model PLANET 22 S ATEX can be used to recover:

- Combustible flyings
- Combustible carbonaceous dusts (Carbon black, charcoal, coal or coke dusts)
- Flour, grain, wood, plastic and chemicals
- A maximum of 2 kilos (5 pounds) of conductive dusts or metal dusts

WARNING: For the recovery of a more than 2 kilos (5 pounds) of conductive dusts or metal dusts we recommend the use of an optional “wet mix” immersion separator to precipitate the dusts into a liquid bath.

WARNING: DO NOT RECOVER ANY HOT EMBERS OR IGNITED DUSTS.

3.0 IMPORTANT SAFETY PRECAUTIONS

3.1. MOTOR COOLING AIR INTAKE

WARNING: DO NOT WRAP THE ELECTRIC CABLE AROUND THE MOTOR COOLING AIR INTAKE OR OBSTRUCT THE MOTOR COOLING AIR INTAKE IN ANY WAY DURING OPERATION. THIS WOULD PREVENT AIR TO COOL DOWN THE MOTOR, THE TEMPERATURE OF THE MOTOR WOULD RISE, AND THIS WOULD STOP THE VACUUM CLEANER.



Motor cooling air intake must remain unobstructed at all time during operation



3.2. FILTER BLOCKAGE WARNING LIGHT

A filter blockage warning light is installed on the vacuum cleaner. The light turns on to indicate a loss of suction. In such case the collection bag may be full, cloth filters (main filter and safety filter) may need to be washed or HEPA filters may need to be replaced.

WARNING: When the filter blockage warning light turns on, turn the vacuum cleaner off as soon as possible as filter blockage cause the temperature inside the vacuum cleaner to rise and can also lead to motor damage.

For maintenance refer to “Cleaning and maintenance” and to “Assembling and replacing the HEPA filters” sections.

3.3. LAYERS OF DUST

WARNING: Clean regularly the vacuum cleaner surfaces with a water damped cloth to avoid dust accumulation which could create a potential source of ignition.

3.4. TEMPERATURE LIMITATION

In presence of dust clouds

WARNING: The maximum surface temperature of the vacuum cleaner is 200°C. This equipment **shall not be used in presence of a dust cloud which the minimum ignition temperature is less than 300°C.**

In presence of dust layers

WARNING: The maximum surface temperature of the vacuum cleaner is 200°C. This equipment **shall not be used in presence of a dust layer of 5mm which the minimum ignition temperature is less than 275°C.**

3.5. BURNING MATERIAL

WARNING: DO NOT PICK-UP ANYTHING THAT IS BURNING OR SMOKING, SUCH AS HOT ASHES, CIGARETTES, MATCHES OR LIVE EMBERS.

3.6. FLAMMABLE LIQUIDS

WARNING: THIS VACUUM CLEANER IS NOT DESIGNED TO RECOVER FLAMMABLE LIQUIDS. DO NOT USE THIS VACUUM CLEANER TO RECOVER FLAMMABLE LIQUIDS.

3.7. CONDUCTIVE AND METAL DUSTS

WARNING: For the recovery of a more than 2 kilos (5 pounds) of conductive dusts or metal dusts we recommend the use of an optional “wet mix” immersion separator to precipitate the dusts into a liquid bath.

3.8. SELF-IGNITION OF DUST

WARNING: DO NOT USE THIS VACUUM CLEANER TO RECOVER DUST OR MIXTURE OF DUSTS THAT CAN SELF-IGNITE.

3.9. MECHANICALLY GENERATED SPARKS

WARNING: To prevent mechanically generated sparks (thermite reaction) avoid impact of the wand and tools supplied with the vacuum cleaner with any rusted parts present in the working area.

3.10. IMPORTANT SAFETY PRECAUTIONS IN REGARD TO ELECTROSTATIC CHARGES GENERATION

When the vacuum cleaner is used as recommended in this manual it has been determined that no significant or continuous electrostatic charge accumulation, which could act as a potential ignition source, can occur.

Nevertheless, it is recommended for safe use not to perform any specific action on the insulating items assembled on the vacuum cleaner, such as a continuous and intense manual rubbing, which could lead to a significant electrostatic charge accumulation.

The above instructions are to be observed particularly in regard to the plastic wheel covers.

4.0 PRE-USAGE INSTRUCTIONS AND IMPORTANT SAFETY PRECAUTIONS

- WARNING:** This vacuum cleaner must be properly grounded. DO NOT OPERATE UNIT WITHOUT A PROPER GROUND SOURCE.
- WARNING:** The vacuum cleaner unit is completely grounded and use special static-free materials. Use only original replacement parts from the manufacturer or from one of its authorized distributors.
- WARNING:** The vacuum cleaner is supplied without an electrical plug. It is the user's responsibility to install a suitable plug certified for the hazardous area classification.
- WARNING:** The plug should be installed by a qualified electrician only. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.
- WARNING:** This appliance is for dry use only and is not to be used or stored outdoors in wet conditions.
- WARNING:** Before use, operators should be provided with information, instruction and training for the use of the appliance and the substances for which it is to be used, including the safe method of removal and disposal of the material collected
- WARNING:** For user servicing, the machine shall be dismantled, cleaned and serviced, as far as is reasonably practicable, without causing risk to the maintenance staff and others. Suitable precautions include decontamination before dismantling, provision for local filtered exhaust ventilation where the machine is dismantled, cleaning of the maintenance area and suitable personal protection.
- WARNING:** The manufacturer, or an instructed person, shall perform a technical inspection at least annually, consisting of, for example, inspection of filters for damage, air tightness of the machine and proper function of the control mechanism. In addition, on class H machines, the machine filtration efficiency should be tested at least annually, or more frequently as may be specified by national requirements.

WARNING: the outside of the machine should be decontaminated by vacuum cleaning methods and wiped clean or treated with sealant before being taken out of a hazardous area. All the machine parts shall be regarded as contaminated when removed from the hazardous area and appropriate action taken to prevent dust dispersal

WARNING: This appliance is not suitable to pick up dusts or liquids of high explosion risk, nor mixtures of combustible dust with liquids.

WARNING: Improper use of this vacuum cleaner will result in the voiding of the warranty.

- a. Consult local electric code and authority having jurisdiction before using. Make sure that the electrical installation is compatible with the voltage stated on the nameplate.
- b. Examine the vacuum cleaner's power cable for damage (cracking or ageing) before every use. Return to manufacturer for servicing if damaged. Use only the power cable supplied with the unit or one purchased from the manufacturer.
- c. Do not pull vacuum cleaner by the power cable.
- d. Turn off the vacuum cleaner and unplugged the power cable before servicing or storing the vacuum cleaner. Clean and service this vacuum cleaner **only in a NON-HAZARDOUS AREA.**
- e. This vacuum cleaner is designed for indoor use only.
- f. The tank should be clean and dry before using the vacuum cleaner.
- g. The appliance shall only be operated when all filters are in position and undamaged. (See paragraph regarding the filtration system)
- h. Connect to a properly grounded outlet only. See Grounding Instructions.
- i. Only use the right ATEX extension cord according to risk assessment of the end user.
- j. For dusts with an ignition energy less than 1mJ additional restrictions of the labour authorities may apply.

5.0 PRE-CAUTIONS FOR THE RECOVERY OF HAZARDOUS MATERIALS

WARNING: Model PLANET 22 S ATEX (not equipped with a HEPA filter) is not suitable for the recovery of hazardous materials.

DANGER: If the vacuum cleaner is used to recover toxic or nuisance materials, the following safety precautions must be taken:

- a. The vacuum cleaner must be equipped with a HEPA filter.
- b. Service and operation should only be carried out by trained personnel.
- c. Appropriate clothing and personal protective equipment should be worn when operating or servicing the vacuum cleaner.
- d. Dispose of collected materials responsibly. Follow applicable government regulations for the disposal of hazardous materials.

WARNING: This appliance contains dust hazardous to health. Emptying and maintenance operations, including removal of the dust collection means, must only be carried out by authorized personnel wearing suitable personal protection. Do not operate without the full filtration system fitted.

NOTE: Any health hazard associated with the use of this vacuum cleaner in conjunction with the recovery of asbestos and other hazardous substances has not been investigated.

6.0 GROUNDING INSTRUCTIONS

This vacuum cleaner must be properly grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This vacuum cleaner is equipped with a cord having an equipment-grounding conductor. The vacuum cleaner is supplied without an electrical plug. It is the user's responsibility to install a suitable plug certified for the hazardous locations area classification.

The plug should be installed by a qualified electrician only. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. Ensure that the fuse/breaker on the electrical panel is of the correct rating and exceeds the maximum current rating shown on the technical data sticker of the vacuum unit. Test the electrical continuity of the vacuum cleaner prior to each use. (See section 6: testing for ground continuity).

WARNING: This vacuum cleaner for hazardous locations is equipped with conductive wheels, which allow for the vacuum cleaner to be grounded with the floor. Do not substitute the conductive wheels and use only replacement conductive wheels supplied by the manufacturer.

WARNING: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether an outlet is properly grounded. If the plug will not fit the outlet, have a proper plug or outlet installed by a qualified electrician. No adaptor should be used with this vacuum cleaner

WARNING: To effectively dissipate static electricity and to ensure spark-free operation, this vacuum cleaner must be grounded during use.

DANGER: Do not operate vacuum cleaner if the electrical outlet is not properly grounded or if the grounding is questionable.

7.0 TESTING FOR GROUND CONTINUITY

WARNING: Test the electrical continuity of the vacuum cleaner before each use. This will ensure that any static electricity that is produced while vacuuming will be discharged to ground.

WARNING: Use only original replacement parts from the manufacturer or from one of its authorized distributors.

An ohm-meter is required to perform the following electrical continuity test.

- a. Disconnect the power cable from the outlet.
- b. Make sure that all the latches on the vacuum cleaner are fastened and that the detachable recovery tank is properly installed on the vacuum cleaner.
- c. Disconnect the suction hose from the vacuum cleaner.
- d. Using an ohm-meter, test the electrical continuity of the vacuum cleaner from the ground pin at the end of the power cable to the suction intake of the vacuum cleaner. A reading of 10^9 ohms or less is satisfactory to ensure proper grounding and static dissipation.
- e. Using the ohm-meter test for the electrical continuity of the suction hose from one end to the other. A reading of 10^9 ohms or less is satisfactory to ensure proper grounding and static dissipation.

8.0 FILTRATION SYSTEM

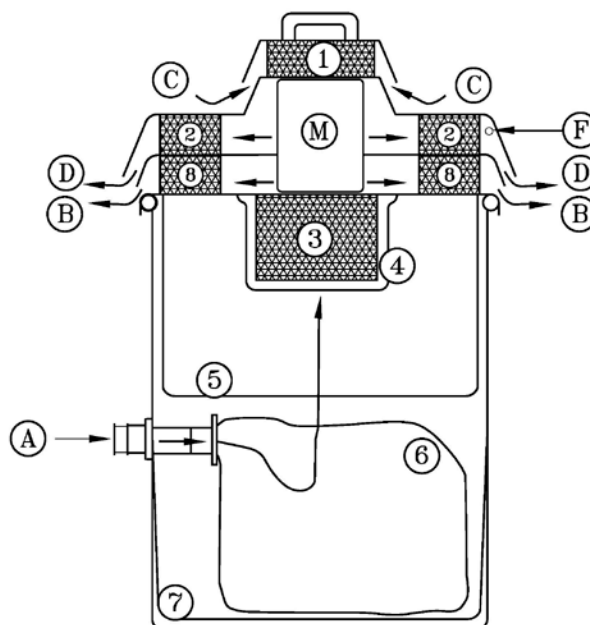


Figure 1

1. ABSOLUTE HEPA FILTER FOR MOTOR COOLING AIR INTAKE (*Efficiency > of 99.995% on 0.3 micron.*)
 2. ABSOLUTE HEPA FILTER FOR MOTOR COOLING AIR EXHAUST (*Efficiency > of 99.995% on 0.3 micron.*)
 3. ABSOLUTE HEPA FILTER FOR WORKING AIR INTAKE (*Efficiency > of 99.995% on 0.3 micron.*)
 4. SAFETY FILTER (STATIC DISSIPATIVE)
 5. MAIN CLOTH FILTER (STATIC DISSIPATIVE)
 6. COLLECTION BAG (STATIC DISSIPATIVE)
 7. POLY LINER RECOVERY BAG (STATIC DISSIPATIVE)
 8. ABSOLUTE HEPA FILTER FOR WORKING AIR EXHAUST (*Efficiency > of 99.995% on 0.3 micron.*)
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- A. SUCTION INLET
 - B. WORKING AIR EXHAUST
 - C. MOTOR COOLING AIR INTAKE
 - D. MOTOR COOLING AIR EXHAUST
 - F. FILTER BLOCKAGE WARNING LIGHT
 - M. MOTOR

9.0 OPERATING INSTRUCTIONS FOR DRY RECOVERY

WARNING: This vacuum cleaner is designed for the recovery of dry materials only. Do not recover liquids.

1. Disengage the latches and remove the power head from the recovery tank.
2. Place the poly liner (item # 7 on Fig. 1) at the bottom of the tank

NOTE In order to prevent the poly liner from being vacuumed up during use; press the bag along the interior walls and bottom of the recovery tank in order to remove any trapped air.

3. Place the collection bag (item # 6 on Fig. 1) in the recovery tank on the air intake
4. Place the main cloth filter (item # 5 on Fig. 1) on the recovery tank. Make sure that the filter's gasket covers the circumference of the recovery tank lip.

IMPORTANT: Do not use this vacuum cleaner for dry recovery if the cloth filters are not installed

5. Place the power head on the recovery tank and fasten the latches.
6. Fasten hose to suction intake on side of recovery drum and attach desired tools to hose.
7. To turn on the vacuum cleaner, turn switch to the ON position
8. To shut off unit, turn switch to the OFF position. Disconnect the power cable when not in use.

10.0 CLEANING AND MAINTENANCE

FILTER BLOCKAGE WARNING LIGHT:

A filter blockage warning light is installed on the vacuum cleaner. The light turns on to indicate a loss of suction. In such case the collection bag may be full, cloth filters (main filters and safety filters) may need to be washed or HEPA filters may need to be replaced.

WARNING: When the filter blockage warning light turns on, turn the vacuum cleaner off as soon as possible as filter blockage cause the temperature inside the vacuum cleaner to rise and can also lead to motor damage.

IMPORTANT: We recommend proceeding with the following maintenance after each use and after a maximum of 8 hours of consecutive use

WARNING: Turn off the vacuum cleaner and disconnect the power cable before performing any servicing or maintenance of the vacuum cleaner.

- a. Dispose of collection bag when full and replace by a new collection bag
- b. Empty and clean the recovery tank.

WARNING: Empty the recovery tank when necessary but also after every use (8 hours shift). Do not allow recovered materials to sit for extended periods of time. An excessive accumulation of recovered materials can create a dust ignition hazard.

- c. It is recommended that the cloth filters be cleaned regularly. Dirty cloth filters will reduce the airflow through and reduce the performance of the vacuum cleaner. The cloth filters (main filters and safety filters) can be washed with warm water (no detergents required).

IMPORTANT: After washing the filters, make sure that they are completely dry before reinstalling them in the vacuum. Do not reinstall the cloth filters if they are still wet.

- d. The cloth filters should be replaced every two or three years depending on use.
- e. Inspect the cloth filters regularly. If the cloth filters are torn, replace immediately. A torn filter will allow dust and other materials to enter the motor and may cause pre-mature wear of the motor
- f. Clean hose to remove any accumulated dust, debris or material recovered.
- g. The HEPA filter should be replaced yearly, or every two years, depending on the use.

WARNING: Do not use the HEPA filter after removal out of the appliance.

WARNING: Keep the power supply cable clean and inspect it regularly for cuts or cracks

WARNING: When carrying out service or repair operations, all contaminated items which cannot be satisfactorily cleaned, are to be disposed of. Such items shall be disposed of in impervious bags in accordance with any current regulation for the disposal of such waste;

WARNING: Clean regularly the vacuum cleaner surfaces with a water damped cloth to avoid dust accumulation which could create a potential source of ignition.

11.0 ASSEMBLING AND REPLACING THE HEPA FILTERS

A HEPA filter is designed for filtration of ultra-fine particles. A clogged HEPA filter will reduce the air flow thereby reducing the vacuum's performance thus requiring replacement.

The life of the HEPA filters depends greatly on the use of the vacuum cleaner. It is recommended that the HEPA filters be replaced once a year if the vacuum is used intensively (daily). The filters can be replaced every two years if the vacuum cleaner is used less frequently (two or three times per week)

WARNING: If the vacuum cleaner is used for the recovery of toxic materials proper clothing and the use of an appropriate breathing apparatus is necessary when servicing the HEPA filter housing or any other contaminated part of the unit.

11.1. REPLACEMENT OF THE HEPA FILTER FOR MOTOR COOLING AIR INTAKE (ITEM #1 ON FIG. 1 SEE SECTION 8 FOR ILLUSTRATION)

1. Disconnect the power cable from the outlet.
2. Unscrew the three hex nuts securing the top section of the power head to the lid
3. Remove and discard the old HEPA filter
4. Carefully inspect the seal gaskets for wear and breaks. Replace gaskets if defective.
5. Place the new filter on the lid.
6. Securely fasten the top section of the power head to the lid using the three hex nuts.
7. Dispose of the contaminated filter according to government regulations. (If applicable)

11.2. REPLACEMENT OF THE HEPA FILTER FOR MOTOR COOLING AIR EXHAUST (ITEM #2 ON FIG. 1 SEE SECTION 8 FOR ILLUSTRATION)

1. Disconnect the power cable from the outlet.
2. Unscrew the six hex nuts securing the middle section of the power head to the lid
3. Remove and discard the old HEPA filter.
4. Carefully inspect the seal gasket on the HEPA filter. Replace gasket if defective.
5. Place the new filter on the lid.
6. Securely fasten the middle section of the power head to the lid using the six hex nuts.
7. Dispose of the contaminated filter according to government regulations. (If applicable)

11.3. REPLACEMENT OF THE HEPA FILTER FOR WORKING AIR EXHAUST (ITEM #8 ON FIG. 1 SEE SECTION 8 FOR ILLUSTRATION)

1. Disconnect the power cable from the outlet.
2. Unscrew the six hex nuts securing the lower section of the power head to the lid
3. Remove and discard the old HEPA filter.
4. Carefully inspect the seal gasket on the HEPA filter. Replace gasket if defective. (Part # 215372G)
5. Place the new filter on the lid. (# 215372)
6. Securely fasten the lower section of the power head to the lid using the six hex nuts.
7. Dispose of the contaminated filter according to government regulations. (If applicable)

11.4. HEPA FILTER FOR WORKING AIR INTAKE (ITEM #3 SEE SECTION 8 FOR ILLUSTRATION)

1. Disconnect the power cable from the outlet.
2. Disengage the latches and remove the power head from the recovery tank.
3. Remove the safety filter
4. Unscrew the hex nut securing the HEPA filter to the underside of the lid.
5. Discard the old HEPA filter.
6. Carefully inspect the seal gaskets for wear and breaks. Replace gaskets if defective.
7. Insert the new HEPA filter
8. Securely fasten the HEPA filter using the hex nut.
9. Place back the safety filter
10. Dispose of the contaminated filter according to government regulations. (If applicable)

12.0 STORAGE

It is recommended that the inside of the recovery tank be clean and dry when storing the vacuum cleaner.

13.0 TECHNICAL SPECIFICATIONS

Voltage	240 V
Hertz	50 Hz
Phase	Single
P_m^*	1080 W
Power	1.2 kW
Amperage	5 A
Air Flow	194 m ³ /h
Vacuum Pressure	245 hPa / 2504 mm H ₂ O
Sound Level	72 dB(A)
Plug Type	Not Included
Suction Inlet	60 mm
Cart Type	4 Wheel Dolly (4W)
Dry Recovery - Disposable Filter Bag	19 liters
Length	43 cm
Width	43 cm
Weight (Vacuum Only)	24 kg.
Height	102 cm
Cord Length	10 m

** **Normal operation:** conditions under which the machine is operated in normal use, obtained at power input P_m of the vacuum motor.*

14.0 TROUBLESHOOTING:

PROBLEM	PROBABLE CAUSE	SOLUTION
Drop in suction power	Cloth filter(s) may be excessively dirty or covered with dust.	Wash or replace the cloth filter(s)
	Recovery tank may be full	Empty the recovery tank
	Suction hose or vacuum tools may be blocked	Clear blockage using a broom handle or other appropriate device
	HEPA filters may be clogged	Change HEPA filters

15.0 EU DECLARATION OF CONFORMITY



Integrated
Professional
Cleaning

EU DECLARATION OF CONFORMITY

IPCleaning S.r.l.

Via E. Fermi 2, 26022 Castelveverde (Cremona) , Italia


Declares on its own responsibility that the following equipment:

Static dissipative / grounded, industrial vacuum cleaner system
Electrically operated for dry recovery, including accessories,

Model:

PLANET 22 S ATEX

Bearing the following marking:

CE  II 3 D Ex tc IIIC T200°C Dc IP6X

To which declaration refers, is designed and manufactured in compliance with the essential requirements and other relevant provisions of the following applicable directives:

1. ATEX directive 2014/34/EU

Compliance has been obtained by application of the following standards:

- **EN 60079-0:2012 and its Amendment A11: 2013**
- **EN 60079-31:2014**
- **EN 1127-1:2011**

For which an internal control of production has been performed

This equipment complies with the electrical safety requirements, as they are expressed in the **Machinery Directive 2006/42/EC**, and has been manufactured in accordance to the following standards:

- **EN 60204-1: 2006 and its Amendment A1: 2009**
- **EN 60335-1: 2012 and its Amendment A11: 2014**
- **EN 60335-2-69: 2012**

2. The Electromagnetic Compatibility Directive 2014/30/EU

Compliance has been obtained by application of the following standards:

- **EN 61000-6-1:2007**
- **EN 61000-6-3:2007 and its Amendment A1: 2011**

Subject to use for the purpose for which it was designed in accordance with relevant standards and with the manufacturer's recommendations. We, the undersigned, hereby declare that the equipment specified above conforms to the listed Directives and standards

Castelveverde, May 16, 2018

Legal Representative
Federico De Angelis

REV 7

16.0 ANNEXES

Refer to the following documents for the necessary information regarding the installation, the maintenance and the compliance of EX certified parts assembled in the equipment.

- Cable gland model GHG 960 - EC Type Examination Certificate No. PTB 14 ATEX 1015X (6 pages)
- Cable gland model GHG 960 – Operating instructions (12 pages)



(1) **EU-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment or Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 14 ATEX 1015 X

Issue: 01

(4) Product: Cable gland type GHG 960 **** * ****

(5) Manufacturer: COOPER Crouse-Hinds GmbH

(6) Address: Neuer Weg Nord 49, 69412 Eberbach, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 16-15133.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

 **II 2 G Ex eb IIC Gb**

 **II 2 D Ex tb IIIC Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, January 16, 2017

Dr.-Ing. D. Markus
Oberregierungsrat



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EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

(13)

SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 14 ATEX 1015 X, Issue: 01**

(15) Description of Product

The cable gland, type GHG 960 **** * ****, made of polyamide serves to introduce permanently laid cables into electrical equipment of the type of protection Increased Safety "eb" and Protection by enclosure "tb". The cable entry is composed of intermediate glands with two different widths of threaded joint, sealing rings of different designs and a cap nut. Accessories are: blanking plug, reducing gland, multiple cable gland, flat cable gland and expansion gland. The cap nut is optionally made in black resp. blue for the distinction of Ex-e and Ex-i circuits.

They are installed in enclosures with through-holes or threaded holes, with or without lock nut.

Technical data

Type	Ø Clamping range in mm	Service temperature	One pcs.	Packing set
Cable Gland M12	Ø 5 – 7	-20°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M16	Ø 5.5 – 7 Ø 7 – 10	-20°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M20	Ø 5.5 – 7 Ø 7 – 9 Ø 9.5 – 13	-20°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M20	Ø 5.5 – 7 Ø 7 – 9 Ø 9.5 – 11	-40°C - +70°C	GHG 960 9248 P****	GHG 960 1955 R****
Cable Gland M25	Ø 8 – 10 Ø 10 – 13 Ø 13.5 – 17.5	-25°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M25	Ø 8 – 10 Ø 10 – 13 Ø 13.5 – 15	-55°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M32	Ø 14 – 17 Ø 17.5 – 21	-55°C - +70°C	GHG 960 9248 P****	GHG 960 1955 R****
Cable Gland M32	Ø 14 – 17 Ø 17.5 – 21	-20°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M40	Ø 19 – 22 Ø 22 – 28	-55°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M50	Ø 24 – 28 Ø 28 – 35	-55°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Cable Gland M63	Ø 29 – 35 Ø 36 – 41 *	-55°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Extension gland M16/M20X1.5	Ø 5.5 – 7 Ø 7 – 9 Ø 9.5 – 13	-20°C - +70°C	GHG 960 9244 P****	GHG 960 1956 R****
Extension gland M20/M25X1.5	Ø 8 – 10 Ø 10 – 13 Ø 13.5 – 15	-20°C - +70°C	GHG 960 9244 P****	GHG 960 1956 R****
Extension gland M25/M32X1.5	Ø 14 – 17 Ø 17.5 – 21	-55°C - +70°C	GHG 960 9244 P****	GHG 960 1956 R****
Extension gland M32/M40X1.5	Ø 19 – 22 Ø 22 – 28	-55°C - +70°C	GHG 960 9244 P****	GHG 960 1956 R****
Extension gland M40/M50X1.5	Ø 24 – 28 Ø 28 – 35	-55°C - +70°C	GHG 960 9244 P****	GHG 960 1956 R****
Extension gland M50/M63X1.5	Ø 29 – 35 Ø 36 – 41 *	-55°C - +70°C	GHG 960 9244 P****	GHG 960 1956 R****
Reducing gland M16-M12		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M20-M12		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M20-M16		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M25-M12		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M25-M16		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M25-M20		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M32-M12		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M32-M16		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M32-M20		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****

sheet 2/6

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 1015 X, Issue: 01

Reducing gland M32-M25		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M40-M16		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M40-M20		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M40-M25		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M40-M32		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M50-M20		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M50-M25		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M50-M32		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M50-M40		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M63-M25		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M63-M32		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M63-M40		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Reducing gland M63-M50		-55°C - +70°C	GHG 960 9237 P****	GHG 960 1946 R****
Multiple gland M25X1.5 2- fold	Ø 4.5 – 7	-20°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Multiple gland M32X1.5 4- fold	Ø 4.5 – 7	-20°C - +70°C	GHG 960 9235 P****	GHG 960 1955 R****
Flat cable gland M25X1,5	G18 = 12,5 - 9 x 8 - 5 G24 = 14 - 11 x 8 - 6	-55°C - +70°C (+110°C)***	GHG 960 9242 P****	
Cable gland PG 16	**	-20°C - +70°C	GHG 960 9243 P****	
Cable gland PG 16	**	-55°C - +70°C	GHG 960 9243 P****	
Blanking plug for M12	Ø 5	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for M16	Ø 6	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for M20	Ø 7	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for M25	Ø 10	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for M32	Ø 13	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for M40	Ø 19	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for M50	Ø 25	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for M63	Ø 32	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
Blanking plug for multiple gland	Ø 5	-55°C - +70°C	GHG 960 6107 P****	GHG 960 1944 R****
* additional sealing ring for the clamping range Ø 41mm up to Ø 48mm				
** the same design as well as the M25 version				
*** Sealing ring for the heat cable of the flat cable gland				

Cable gland M20x1.5 options with slotted seal for the following cables:

Glass fibre cable	Application
Cable Ø. 6.4mm / Breakout inner cable / type: orange	-5°C - +45°C
Cable Ø 7.0mm / Ultra-Fox Plus / type: 903 AG 621 02 709	-20°C - +70°C
Cable Ø 6.8mm / Ehret / ICS 24 / type : 84 305 .. .	-20°C - +60°C
Cable Ø 2mm / Lichtwellenleiter LWL	-20°C - +60°C

Two different length of thread for the cable glands short = P/R****
 long = P/R****

Two different colours for the cable glands black for Ex-e version = P/R****
 blue for Ex-i version = P/R****

Installation in equipment with wall thicknesses of minimum 1.5 mm

Ingress protection IP 66

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 1015 X, Issue: 01

Torque cable gland

Type	Service temperature range	Impact energy	Clamping range	Torque Pressure screw	Torque Gland body
KLE	°C	Joule	Ø mm	Nm	Nm
M16	-20 - +70	low, 4	5.5 – 7.0 7.0 – 10.0	1.0 / 1.0 1.0 / 1.4	3.3
M20	-20 - +70	high, 7	5.5 – 7.0 7.0 – 9.0 9.5 – 13.0	1.5 / 1.0 1.5 / 1.4 1.0 / 1.7	2.7
M20	-40 - +70	low, 4	5.5 – 7.0 7.0 – 9.0 9.5 – 13.0	1.5 / 1.0 1.5 / 1.4 1.0 / 1.7	2.7
M20 split gasket	-20 - +70	high, 7	2,0 7.0 – 9.0	3,5 1.5 / 1.4	2.7
M25	-20 - +70	high, 7	10.0 – 13.0 13.5 – 17.5	2.3 / 2.6 1.3 / 2.3	3.0
M25	-25 - +70	high, 7	8.0 – 10.0 10.0 – 13.0 13.5 – 17.5	1.5 / 2.0 2.3 / 2.6 1.3 / 2.3	3.0
M25	-55 - +70	high, 7	8.0 – 10.0 10.0 – 13.0 13.5 - 15	1.5 / 2.0 2.3 / 2.6 1.5 / 2.3	3.0
M25 flat cable	-55 - +70 (+110°C)	high, 7	5-8x11-12.5 6-8x11-14	5.0 3.5	5.0
PG16	-25 - +70	high, 7	10.0 – 13.0 13.5 – 15.0	2.3 / 2.6 1.5 / 2.3	5.0
PG16	-55 - +70	high, 7	10.0 – 13.0 13.5 - 17.5	2.3 / 2.6 1.3 / 2.3	5.0
M32	-20 - +70	high, 7	14.0 – 17.0 17.5 – 21.0	3.0 / 4.0 1.5 / 1.3	5.0
M32	-55 - +70	high, 7	14.0 – 17.0 17.5 – 21.0	3.0 / 4.0 1.5 / 1.3	5.0
M40	-55 - +70	high, 7	19.0 – 22.0 22.0 – 28.0	3.3 / 5.5 3.3 / 6.7	7.5
M50	-55 - +70	high, 7	24.0 – 28.0 28.0 – 35.0	6.0 / 7.0 5.0 / 7.0	7.5
M63	-55 - +70	high, 7	29.0 – 35.0 36.0 - 41.0	12.0 / 12.0 12.0 / 13.0	7.5

Torque multiple cable gland

Type	Service temperature range	Impact energy	Clamping range	Torque Pressure screw	Torque Gland body
KLE	°C	Joule	Ø mm	Nm	Nm
M25 2-fach	-20 - +70	high, 7	2x 4.5 – 7.0	2.0 / 2.0	3.0
M32 4-fach	-20 - +70	high, 7		3.0 / 3.5	5.0

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 1015 X, Issue: 01

Torque extension cable gland

Type	Service temperature range	Impact energy	Clamping range	Torque Pressure screw	Torque Gland body
KLE	°C	Joule	Ø mm	Nm	Nm
M16/M20	-20 - +70	high, 7	5.5 – 7.0 7.0 – 9.0 9.5 – 13.0	1.0 / 1.0 1.5 / 1.4 1.0 / 1.7	2.7
M16/M20	-40 - +70	low, 4	5.5 – 7.0 7.0 – 9.0 9.5 – 13.0	1.5 / 1.0 1.5 / 1.4 1.0 / 1.7	2.7
M20/M25	-20 - +70	high, 7	8.0 – 10.0 10.0 – 13.0 13.5 – 17.5	1.5 / 1.0 2.3 / 2.6 1.3 / 2.3	3.0
M20/M25	-55 - +70	high, 7	8.0 – 10.0 10.0 – 13.0 13.5 – 15.0	1.5 / 2.0 2.3 / 2.6 1.5 / 2.3	3.0
M25/M32	-55 - +70	high, 7	14.0 – 17.0 17.5 – 21.0	3.0 / 4.0 1.5 / 1.3	5.0
M32/M40	-55 - +70	high, 7	19.0 – 22.0 22.0 – 28.0	3.3 / 5.5 3.3 / 6.7	7.5
M40/M50	-55 - +70	high, 7	24.0 – 28.0 28.0 – 35.0	6.0 / 7.0 5.0 / 7.0	7.5
M50/M63	-55 - +70	high, 7	29.0 – 35.0 36.0 – 41.0 (41.0 – 48.0)	12.0 / 12.0 12.0 / 13.0 (13.0 / 7.8)	7.5

Nomenclature

GHG 960	****	*	****
1	2	3	4

- 1) Type
- 2) Design see table 1 above
- 3) P = Single part
R = Packing set
- 4) Variants e.g. colour, thread length, blanking elements, size, etc.

Details of change:

- 1) New test according to EN 60079-31:2014 and EN 60079-7:2015.
- 2) The sizes M16 to M25 have got an additional sealing ring.
- 3) The size G26 of the flat cable gland has been changed to G24.
- 4) The minimum ambient temperature of size M25x1.5 is changed to -25 °C

(16) Test Report PTB Ex16-15133

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 14 ATEX 1015 X, Issue: 01

(17) Specific conditions of use

Only permanently installed cables may be entered through the glands. The operating company must ensure that adequate strain relief is provided.

The degree of protection (IP66) will only be met if seals and cable glands are properly fitted. The manufacturer's instructions must be followed.

The types with low impact energy have to be mounted in the enclosure, so they are mechanically protected against impact energy.

The blanking plug type GHG 960 6107 P**** resp. GHG 960 1944 R**** shall only be used with the cable glands type GHG 960 92** P**** resp. GHG 960 19** R****.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, January 16, 2017

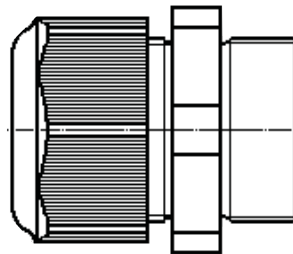

Dr.-Ing. D. Markus
Oberregierungsrat



Explosionssgeschützte Kabel- und Leitungseinführungen,
Verschlussstopfen, Schraubverschlüsse, Trompetenverschraubungen,
Reduzierungen und Entwässerungsstopfen

Explosion-protected cable entries, blanking plugs, screw plugs,
trumpet-shaped cable glands, reducing glands and drain plugs

Entrées de câble, bouchons filetés, bouchons de fermeture,
presses-étoupes à trompette, bagues de réduction et bouchons de
purge pour atmosphères explosives



CZ: "Tento návod k použití si můžete vyžádat ve svém mateřském jazyce u příslušného zastoupení společnosti Cooper Crouse-Hinds/CEAG ve vaší zemi."

DK: "Montagevejledningen kan oversættes til andre EU-sprog og rekvireres hos Deres Cooper Crouse-Hinds/CEAG leverandør"

E: "En caso necesario podrá solicitar de su representante Cooper Crouse-Hinds/CEAG estas instrucciones de servicio en otro idioma de la Union Europea"

EST: "Seda kasutusjuhendit oma riigikeeles võite küsida oma riigis asuvasst asjaomasest Cooper Crouse-Hinds/CEAG esindusest."

FIN: "Tarvittaessa tämän käyttöohjeen käännös on saatavissa toisella EU:n kielellä Teidän Cooper Crouse-Hinds/CEAG - edustajaltanne"

GR: *Εάν χρειασθεί, μεταφραση των οδηγιών χρήσεως σε άλλη γλώσσα της ΕΕ, μπορεί να ζητηθεί από τον Αντιπροσωπο της Cooper Crouse-Hinds/CEAG*

H: "A kezelési útmutatót az adott ország nyelvén a Cooper Crouse-Hinds/CEAG cég helyi képviselőtől igényelheti meg."

I: "Se desiderate la traduzione del manuale operativo in un'altra lingua della Comunità à Europea potete richiederla al vostro rappresentante Cooper Crouse-Hinds/CEAG"

LT: "Šios naudojimo instrukcijos, išverstos į Jūsų gimtąją kalbą, galite pareikalauti atsakingoje "Cooper Crouse-Hinds/CEAG" atstovybėje savo šalyje."

LV: "Šo ekspluatācijas instrukciju valsts valodā varat pieprasīt jūsu valsts atbildīgajā Cooper Crouse-Hinds/CEAG pārstāvniecībā."

M: "Jistgħu jitolbu dan il-manwal fil-lingwa nazzjonali tagħhom minghand ir-rappreżentant ta' Cooper Crouse Hinds/CEAG f'pajjiżhom."

NL: "Indien noodzakelijk kan de vertaling van deze gebruiksinstructie in een andere EU-taal worden opgevraagd bij Uw Cooper Crouse-Hinds/CEAG - vertegenwoordiging"

P: "Se for necessária a tradução destas instruções de operação para outro idioma da União Europeia, pode solicita-la junto do seu representante Cooper Crouse-Hinds/CEAG"

PL: "Niniejszą instrukcję obsługi w odpowiedniej wersji językowej można zamówić w przedstawicielstwie firmy Cooper-Crouse-Hinds/CEAG na dany kraj."

S: "En översättning av denna montage- och skötselinstruktion till annat EU - språk kan vid behov beställas från Er Cooper Crouse-Hinds/CEAG-representant"

SK: "Tento návod na obsluhu Vám vo Vašom rodnom jazyku poskytne zastúpenie spoločnosti Cooper Crouse-Hinds/CEAG vo Vašej krajine."

SLO: "Navodila za uporabo v Vašem jeziku lahko zahtevate pri pristojnem zastopništvu podjetja Cooper Crouse-Hinds/CEAG v Vaši državi."

RUS: "При необходимости, вы можете запрашивать перевод данного руководства на другом языке ЕС или на русском от вашего Cooper Crouse-Хиндс / CEAG - представителей."

GHG 960 7001 P0001 D/GB/F (s)



Kabel- und Leitungseinführungen,
Verschlussstopfen,
Schraubverschlüsse, Trompeten-
verschraubungen, Reduzierungen
und Entwässerungsstopfen

Cable entries, blanking plugs,
screw plugs, trumpet-shaped cab-
le glands, reducing glands
and drain plugs

Entrées de câble, bouchons filetés,
bouchons de fermeture, presses-
étoupes à trompette, bagues de
réduction et bouchons de purge

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Konformitätserklärung
separat beigelegt.

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Declaration of conformity,
enclosed separately.

Contenu:

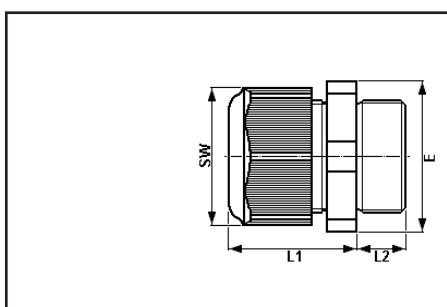
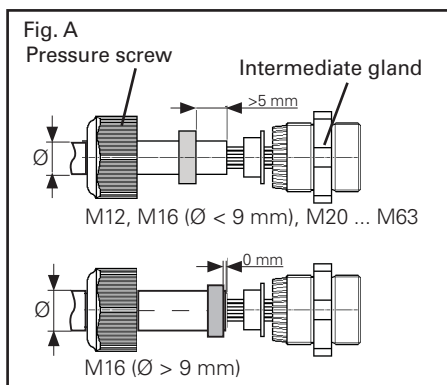
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Déclaration de conformité,
jointe séparément.

Cable entries, blanking plugs, screw plugs, trumpet-shaped cable glands, reducing glands and drain plugs

Dimension drawings and dimensions in mm

1 Technical data



1.1 Technical details for:

Cable entries (KLE)

M12x1,5 to M63x1,5

ATEX type examination certificate: PTB 14 ATEX 1015 X^(A)

Marking acc. to 2014/34/EU and standard:

EN 60079-0

Ex II 2 G Ex e IIC Gb

Ex II 2 D Ex tb IIIC Db

IECEx type examination certificate:

IECEx PTB 14.0027X^(A)

Category of application:

IEC60079-0

Ex e IIC Gb

Ex tb IIIC Db

^(A) The EC-Type Examination Certificate and any future supplements thereto shall, at the same time, be regarded as supplements to the EC-Type Examination Certificates PTB 99 ATEX 3128 X and PTB 99 ATEX 3101 X

Perm. storage temperature in original packing: -20° C to +70° C

Degree of protection to IEC/EN 60529: IP 66*⁽¹⁾ (when fully assembled)

*) M40, M50 und M63 with suitable flange seal

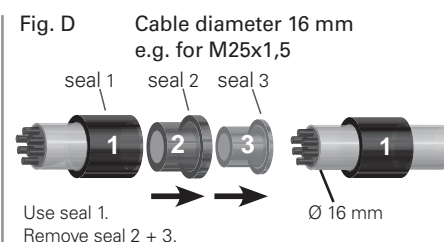
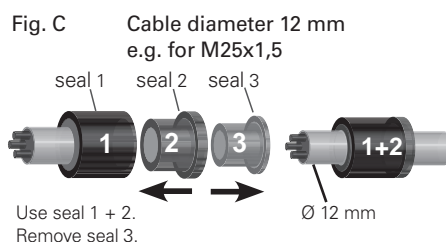
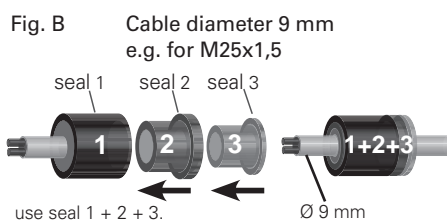
Type	SW	L1	L2	E	weight app.
M12x1,5	15 mm	19,3 mm	12 / 8 mm	16,2 mm	3,4 g
M16x1,5	20 mm	23,0 mm	12 / 8 mm	22,0 mm	6,5 g
M20x1,5	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M25x1,5	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M32x1,5	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g
M40x1,5	46 mm	39,5 mm	15 / 10 mm	50,5 mm	50,3 g
M50x1,5	55 mm	44,0 mm	16 / 12 mm	60,0 mm	75,9 g
M63x1,5	68 mm	47,0 mm	16 / 12 mm	75,0 mm	117,6 g

Type	operating temperature	impact resistance	Cable diameter												Screw-in thread in enclosure	Colour of dust protection cover
	°C	Joule	Seal 1+2+3 ⁽¹⁾⁽²⁾⁽³⁾				Seal 1+2 ⁽¹⁾⁽²⁾				Seal 1 ⁽¹⁾				Nm**	
			min. Ø	Nm**	max. Ø ⁽¹⁾⁽²⁾	Nm**	min. Ø	Nm**	max. Ø ⁽¹⁾⁽²⁾	Nm**	min. Ø	Nm**	max. Ø ⁽²⁾	Nm**		
M12x1,5	-20 - 70	4									5,0	0,8	7,0	1,0	1,2	white
M16x1,5	-20 - 70	4					5,5	1,0	7,0	1,0	7,0	1,0	10,0	1,4	3,3	white
M20x1,5	-20 - 70	7	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	13,0	1,7	2,7	white
M20x1,5	-40 - 70	4	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	11,0	1,7	2,7	green
M25x1,5	-20 - 70	7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,3	17,5	2,3	3,0	white
M25x1,5	-55 - 70	7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,5	15,0	2,3	3,0	green
M32x1,5	-20 - 70	7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	5,0	white
M32x1,5	-55 - 70	7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	5,0	green
M40x1,5	-55 - 70	7					19,0	3,3	22,0	5,5	22,0	3,3	28,0	6,7	7,5	green
M50x1,5	-55 - 70	7					24,0	6,0	28,0	7,0	28,0	5,0	35,0	7,0	7,5	green
M63x1,5	-55 - 70	7					29,0	12,0	35,0	12,0	36,0	12,0	41,0	13,0	7,5	green
additional seal							41,0	13,0	48,0	7,8						

** Test torques at 20°C

⁽¹⁾ The tests of clamping ranges and torque values were performed with metal mandrel. The clamping range can vary by using cables with different manufacturing tolerances and material properties. Please use the combination of sealing 1 + 2 + 3 for the intermediate region.

⁽²⁾ When selecting the seal rubber, ensure that the cap nut can be tightened when carrying out any future maintenance work on the cable entry.



Cable entries, blanking plugs, screw plugs, trumpet-shaped cable glands, reducing glands and drain plugs

Dimension drawings and dimensions in mm

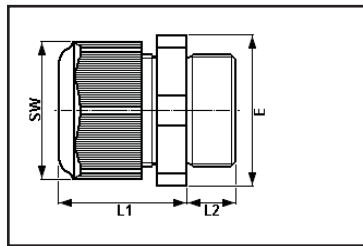
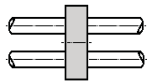


Fig. D/1 Seal insert



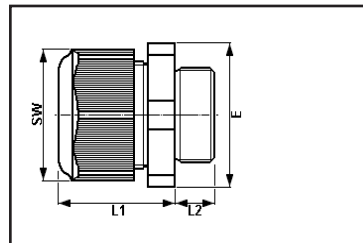
for multiple gland

1.2 Multiple glands

Type	SW	L1	L2	E	weight app.
M25x1,5 2- times	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M32x1,5 4- times	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g

Type	Operating temperature	Impact resistant	Cable diameter				
			Seal 1				
				min.		max.	
	°C	Joule		Ø	Nm	Ø	Nm
M25x1,5 2- times	-20 - 70	< 7	2x	4,5	2,0	7,0	2,0
M32x1,5 4- times	-20 - 70	< 7	4x	4,5	3,0	7,0	3,5

1.3 Enlargement glands



Type	SW	L1	L2	E	weight app.
M16x1,5 / M20x1,5	24 mm	25,0 mm	12 mm	26,5 mm	9,2 g
M20x1,5 / M25x1,5	29 mm	29,5 mm	13 mm	32,0 mm	16,7 g
M25x1,5 / M32x1,5	36 mm	35,5 mm	15 mm	40,0 mm	27,0 g
M32x1,5 / M40x1,5	46 mm	39,5 mm	15 mm	50,5 mm	46,5 g
M40x1,5 / M50x1,5	55 mm	44,0 mm	15 mm	60,0 mm	73,5 g
M50x1,5 / M63x1,5	68 mm	47,0 mm	16 mm	75,0 mm	106,4 g

Type	Operating temperature	Impact resistant	Cable diameter												Screw-in thread in enclosure
			Seal 1+2+3 ^{1 2 3}				Seal 1+2 ^{1 2}				Seal 1 ¹				
			min.		max.		min.		max.		min.		max.		
	°C	Joule	Ø	Nm**	Ø ⁽¹⁾⁽²⁾	Nm**	Ø	Nm**	Ø ⁽¹⁾⁽²⁾	Nm**		Nm**	Ø ⁽¹⁾	Nm**	Nm**
M16x1,5 / M20x1,5	-20 - 70	< 7	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	13,0	1,7	3,3
	-40 - 70	< 4	5,5	1,5	7,0	1,0	7,0	1,5	9,0	1,4	9,5	1,0	11,0	1,7	3,3
M20x1,5 / M25x1,5	-20 - 70	< 7	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,3	17,5	2,3	2,7
	-40 - 70	< 4	8,0	1,5	10,0	2,0	10,0	2,3	13,0	2,6	13,5	1,5	15,0	2,3	2,7
M25x1,5 / M32x1,5	-55 - 70	< 7					14,0	3,0	17,0	4,0	17,5	1,5	21,0	1,3	3,0
M32x1,5 / M40x1,5	-55 - 70	< 7					19,0	3,3	22,0	5,5	22,0	3,3	28,0	6,7	5,0
M40x1,5 / M50x1,5	-55 - 70	< 7					24,0	6,0	28,0	7,0	28,0	5,0	35,0	7,0	7,5
M50x1,5 / M63x1,5	-55 - 70	< 7					29,0	12,0	35,0	12	36,0	12,0	41,0	13,0	7,5
additional seal							41,0	13,0	48,0	7,8					

** Test torques at 20°C

⁽¹⁾ The tests of clamping ranges and torque values were performed with metal mandrel. The clamping range can vary by using cables with different manufacturing tolerances and material properties. Please use the combination of sealing 1 + 2 + 3 for the intermediate region.

⁽²⁾ When selecting the seal rubber, ensure that the cap nut can be tightened when carrying out any future maintenance work on the cable entry.

Dimension drawings and dimensions in mm

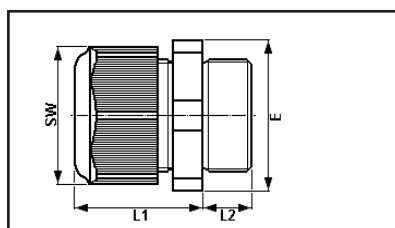
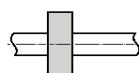


Fig. D/2 Seal insert



for gland for flat cables

1.4 Cable entries in special versions

Type	SW	L1	L2	E	weight app.
M20 with seal Ø 2 mm	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M20 with slotted seal Ø 7,0- 13 mm	24 mm	25,0 mm	13 / 8 mm	26,5 mm	10,1 g
M25 flat cable	29 mm	29,5 mm	13 / 8 mm	32,0 mm	16,9 g
M25 with PG 16 thread	36 mm	35,5 mm	15 / 10 mm	40,0 mm	27,6 g

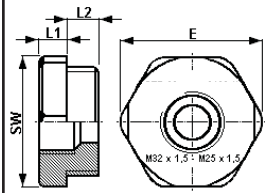
Type	Operating temperature	Impact resistant	Cable-diameter								Screw-in thread in enclosure
	°C	Joule	Seal 1+2				Seal 2				Nm**
			min.	max.	min.	max.	min.	max.	min.	max.	
			Ø	Nm**	Ø ⁽¹⁾⁽²⁾	Nm**	Ø	Nm**	Ø ⁽¹⁾⁽²⁾	Nm**	Nm**
M20 with seal Ø 2 mm	-20 - 60	< 7	2,0	3,5							2,7
M20x1,5 with slotted seal Ø 7,0- 13 mm	-5 - 45		Breakout-Innenkabel Typ: orange								2,7
	-20 - 60		Ultra-Fox Plus Typ: 903 AG 621 02 709								2,7
	-20 - 60		Ehret / ICS 24 Typ: 84 305								2,7
M25x1,5 with PG 16 thread	-20 - 70	< 7	10,0	2,3	13,0	2,6	13,5	1,3	17,5	2,3	3,0
	-55 - 70	< 7	10,0	2,3	13,0	2,6	13,5	1,5	15,0	2,3	3,0
M25x1,5 flat cable	-55 - 70 (110)	< 7	G18 = 5-8x9-12,5 Flachkabel			5,0					3,0
M25x1,5 flat cable	-55 - 70 (110)	< 7	G24 / G26 = 6-8x11-14 Flachkabel			3,5					3,0
	Cable type		Seal dimensions				Cable dimensions				
M25 flat cable	Raychem XTV-4XTV 2 ...		8,0	x	11,0	mm	7,5	x	11,0	mm	3,0
M25 flat cable	Raychem VPL-5VPL 2 ...		8,0	x	11,0	mm	7,5	x	11,5	mm	3,0
M25 flat cable	Raychem BTV-3BTV 2 ...		8,0	x	11,0	mm	6,0	x	11,0	mm	3,0
M25 flat cable	Raychem QTV-10QTVR2		8,0	x	11,0	mm	5,0	x	12,5	mm	3,0
M25 flat cable Raychem	Raychem BTV-10BTV 2 ...		8,0	x	14,0	mm	6,0	x	14,0	mm	3,0
M25 flat cable	Raychem KTV-5KTV 2 ...		8,0	x	14,0	mm	7,5	x	13,5	mm	3,0

** Test torques at 20°C

(1) The tests of clamping ranges and torque values were performed with metal mandrel. The clamping range can vary by using cables with different manufacturing tolerances and material properties. Please use the combination of sealing 1 + 2 for the intermediate region.

(2) When selecting the seal rubber, ensure that the cap nut can be tightened when carrying out any future maintenance work on the cable entry.

Dimension drawings and
dimensions in mm



Reducing-gland have to
protect against twisting
(gluing, ...)

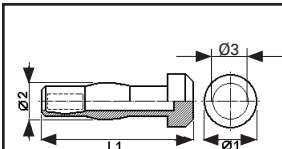
1.5 Reducing glands

Type	Operating temperature / °C	SW	L1	L2	E	Screw-in thread in enclosure / Nm	weight app.
L1 L2						3,3 Nm	
M16x1,5 / M12x1,5	-55 - 70						
M20x1,5 / M12x1,5	-55 - 70	24 mm	6,0 mm	8 mm	26,5 mm	2,7 Nm	9,0 g
M20x1,5 / M16x1,5	-55 - 70	24 mm	6,0 mm	8 mm	26,5 mm	2,7 Nm	9,0 g
M25x1,5 / M12x1,5	-55 - 70	29 mm	6,0 mm	8 mm	32,0 mm	3,0 Nm	12,5 g
M25x1,5 / M16x1,5	-55 - 70	29 mm	6,0 mm	8 mm	32,0 mm	3,0 Nm	12,5 g
M25x1,5 / M20x1,5	-55 - 70	29 mm	6,0 mm	8 mm	32,0 mm	3,0 Nm	12,5 g
M32x1,5 / M12x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,5 g
M32x1,5 / M16x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,5 g
M32x1,5 / M20x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,5 g
M32x1,5 / M25x1,5	-55 - 70	36 mm	6,0 mm	10 mm	40,0 mm	5,0 Nm	13,0 g
M40x1,5 / M16x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	21,0 g
M40x1,5 / M20x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	21,0 g
M40x1,5 / M25x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	23,0 g
M40x1,5 / M32x1,5	-55 - 70	46 mm	6,0 mm	10 mm	50,5 mm	7,5 Nm	21,0 g
M50x1,5 / M20x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	72,0 g
M50x1,5 / M25x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	72,0 g
M50x1,5 / M32x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	72,0 g
M50x1,5 / M40x1,5	-55 - 70	55 mm	6,0 mm	12 mm	60,0 mm	7,5 Nm	65,0 g
M63x1,5 / M25x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	40,0 g
M63x1,5 / M32x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	40,0 g
M63x1,5 / M40x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	40,0 g
M63x1,5 / M50x1,5	-55 - 70	68 mm	6,0 mm	12 mm	75,0 mm	7,5 Nm	30,0 g

L1 = Screw-in thread in enclosure

L2 = Reducing thread

1.6 Blanking plug for multiple glands



Type	Operating temperature / °C	Ø 1	Ø 2	L1	Ø 3	weight app.
M12x1,5*	-55 / +70	7,0 mm	6,0 mm	30,3 mm	5,0 mm	1,0 g
M16x1,5	-55 / +70	8,0 mm	7,0 mm	33,0 mm	6,0 mm	1,3 g
M20x1,5	-55 / +70	12,0 mm	8,5 mm	34,5 mm	7,0 mm	6,6 g
M25x1,5	-55 / +70	16,0 mm	11,0 mm	36,0 mm	10,0 mm	2,8 g
M32x1,5	-55 / +70	20,0 mm	14,0 mm	39,5 mm	13,0 mm	4,6 g
M40x1,5	-55 / +70	24,0 mm	20,0 mm	42,0 mm	19,0 mm	7,0 g
M50x1,5	-55 / +70	32,0 mm	26,0 mm	44,0 mm	25,0 mm	8,0 g
M63x1,5	-55 / +70	39,0 mm	34,0 mm	45,0 mm	32,0 mm	9,0 g

* for multiple glands M25x1,5 and M32x1,5

Cable entries, blanking plugs, screw plugs, trumpet-shaped cable glands, reducing glands and drain plugs

Dimension drawings and dimensions in mm

1.7 Trumpet-shaped glands M20 to M63

ATEX type examination certificate: PTB 00 ATEX 3121

Marking acc. to 2014/34/EU and standard:

EN 60079-0

Ex II 2 G Ex e II

Ex II 2 D Ex tD A21 IP66

IECEx type examination certificate:

IECEx BKI 08.0007

Category of application:

IEC60079-0

Ex e II

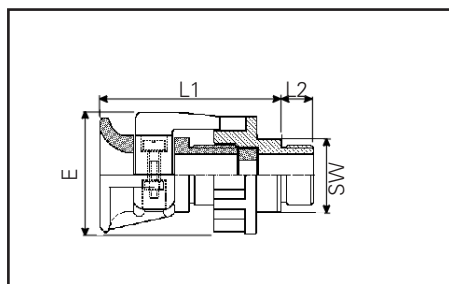
Ex tD A21 T85°C IP66

Perm. storage temperature in original packing:

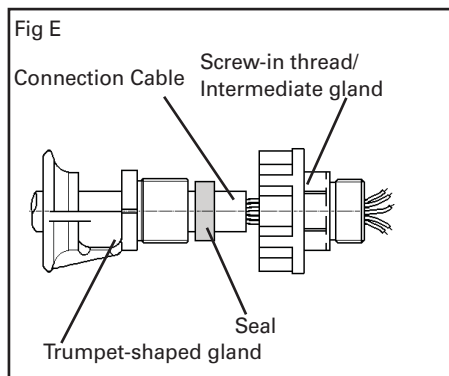
-20° C +40° C

Degree of protection to IEC/EN 60529:

IP 66 (fully assembled)



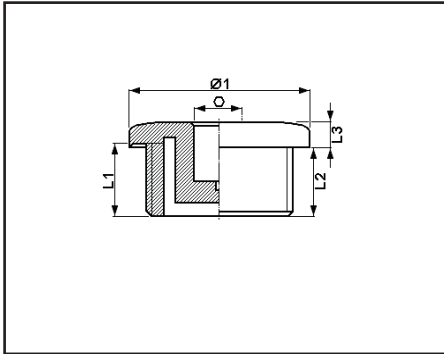
Type	SW	L1	L2	E width across corners	weight app.
M20x1.5	27 mm	64 mm	15 mm	47 mm	57 g
M25x1.5	32 mm	65 mm	15 mm	51 mm	68 g
M32x1.5	41 mm	80 mm	15 mm	68 mm	138 g
M40x1.5	50 mm	86 mm	15 mm	81 mm	191 g
M50x1.5	60 mm	95 mm	16 mm	96 mm	325 g
M63x1.5	75 mm	105 mm	16 mm	107 mm	757 g



Type	Operating tempera- ture	Impact re- sistant	Cable diameter		strain Relief (screws)		Screw- in thread
			Trumpet-shaped gland				
			min.	max.			
	°C	Joule	Ø	Ø	Nm	Nm	Nm
M20x1,5	-40 - 85	< 7	8,0	13,0	3,0	1,5	3,5
M25x1,5	-40 - 85	< 7	11,0	16,0	3,0	2,0	4,0
M32x1,5	-40 - 85	< 7	15,0	20,0	6,0	4,0	7,5
M40x1,5	-40 - 85	< 7	19,0	27,0	10,0	6,0	12,0
M50x1,5	-40 - 85	< 7	26,0	34,0	30,0	10,0	35,0
M63x1,5	-40 - 85	< 7	35,0	46,0	40,0	15,0	45,0

Dimension drawings and dimensions in mm

1.8 Screw plugs

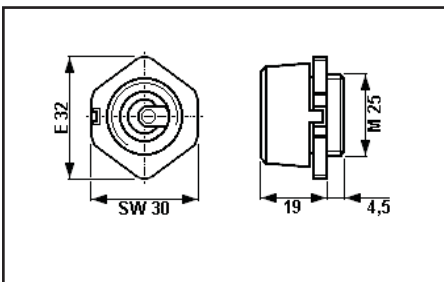


ATEX type examination certificate:	PTB 98 ATEX 3130	
Marking acc. to 2014/34/EU and standard:		
EN 60079-0	Ex II 2 G Ex IIC Gb	
	Ex II 2 D Ex tb IIIC Db IP66	(not for M63x1,5)
IECEx type examination certificate:	IECEx PTB 03.0000	
Category of application:		
IEC60079-0	Ex IIC Gb	(not for M63x1,5)
	Ex tb IIIC Db IP 66	(not for M63x1,5)
Perm. storage temperature in original packing:	-20° C	+40° C
Degree of protection to IEC/EN 60529:	(fully assembled)	
M12- M50	IP 66	
M63	IP 54	

Type	Operating temperature / °C	Ø 1	L1	L2	L3	Screw-in thread in enclosure / Nm	weight app.
M16x1,5	-55 / +95	21 mm	12 mm	11 mm	4,0 mm	3,3	2,4 g
M20x1,5	-55 / +95	25 mm	13 mm	12 mm	4,0 mm	2,7	4,3 g
M25x1,5	-55 / +95	30 mm	13 mm	12 mm	4,0 mm	3,0	6,6 g
M32x1,5	-55 / +95	37 mm	15 mm	14 mm	5,5 mm	5,0	12,0 g
M40x1,5	-55 / +95	45 mm	15 mm	14 mm	5,5 mm	7,5	36,6 g
M50x1,5	-55 / +95	55 mm	16 mm	15 mm	5,5 mm	7,5	56,6 g
M63x1,5	-20 / +80	72 mm	/ mm	12 mm	11,0 mm	7,5	64,5 g

= Socket head spanner or screw driver, size 8 mm

1.9 Drain plug



ATEX type examination certificate:	PTB 01 ATEX 1128 X	
Marking acc. to 2014/34/EU and standard:		
EN 60079-0	Ex II 2 G Ex e II	
Permissible operating temperature range:	-20° C	+40° C
Perm. storage temperature in original packing:	-20° C	+40° C
Degree of protection to IEC/EN 60529:	IP 66 (fully assembled)	
Screw-in thread in enclosure:	M25x1,5	
Test torque:	5,0 Nm	

2 Legend

Caution

This symbol warns of a possible failure. Failure to observe this caution may result in the total failure of the device or the system or plant to which it is connected.



Special conditions:

This symbol indicates that special conditions apply for a safe operation in accordance with the EC Type Examination Certificate / IECEx Certificate of Conformity.

2.1 Safety instructions



The operations must be carried out by electrical suitably trained in hazardous area with knowledge of increased safety explosion protection IEC/EN 60079-14.

All the entries and components listed in these operating and mounting instructions are not suited for use in Zone 0 and Zone 20.

In addition, they may not be used as direct cable entries or seals for flameproof enclosures in potentially explosive atmospheres in Zone 1, Zone 2 and Zone 21, Zone 22.

They shall be used for their intended purpose and shall be in a perfect and clean state.

Prior to mounting, check the entries and components, as well as the screw-in threads of the apparatus into which they are to be mounted to ensure that they are in a perfect state.

The requirements of the IEC/EN 60079-0 and EN/IEC 60079-31 regarding excessive dust deposits and temperature to be considered from the user.

The national safety rules and regulations for the prevention of accidents, as well as the safety instructions included in these operating instructions, that, like this text, are set in italics, shall be observed!

3 Conformity with standards

They have been designed, manufactured and tested according to the state of the art and to DIN EN ISO 9001 and EN ISO/IEC 80079-34.

The apparatus are conform to the standards specified in the EC-Declaration of conformity, enclosed separately.

References to standards and directives in these operating instructions always relate to the latest version. Other additions (e.g. details relating to the year) shall be observed.

4 Field of application

The entries and components covered by these instructions (see Technical Data) are suited for mounting in potentially explosive atmospheres in Zone 1, Zone 2 and Zone 21, Zone 22 accordance with IEC/EN 60079-10-1 and IEC/EC 60079-10-2!

The materials used, including the exterior metal parts, are high quality materials that ensure a corrosion resistance and resistance to chemical substances according to the requirements for use in a "normal industrial atmosphere":

- impact resistant polyamide
- stainless steel

In case of use in an extremely aggressive atmosphere, please refer to manufacturer

5 Application / Properties

All the cable entries and components covered by these operating and mounting instructions are suited for use in enclosures and apparatus in the type of protection "Increased Safety".

Trumpet-shaped cable glands are used for feeding flexible cables into enclosures and apparatus.



The fitting of seal inserts one inside the other or the interchanging of seal inserts of different entries to reduce the cable opening is not permitted.

Reducing glands can be used to reduce the size of threaded or through holes in enclosures to a smaller thread size.

Blanking plugs are used to seal metric COOPER CROUSE-HINDS cable entries and COOPER CROUSE-HINDS multiple entries.

Screw glands are used to seal unused through and threaded holes.

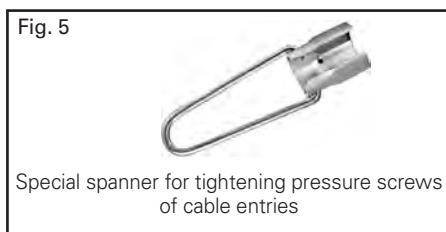
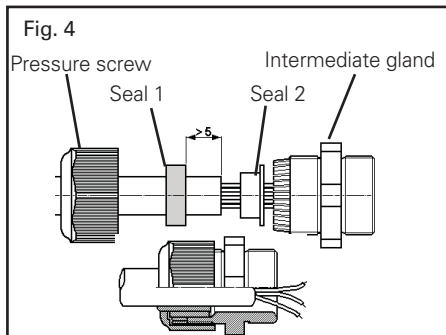
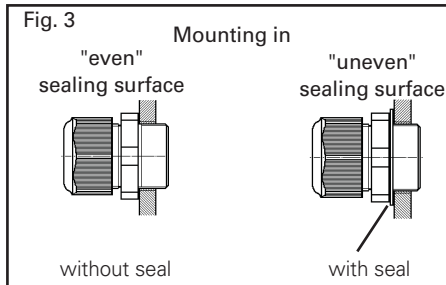
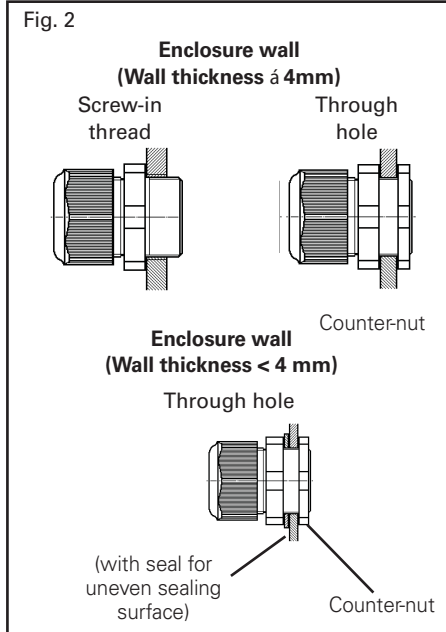
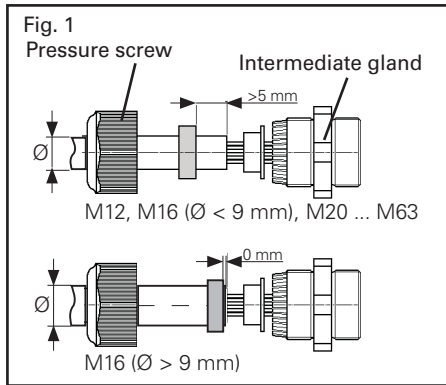
Any condensation in the apparatus can escape via drain plugs (see 6.1, Mounting).

Applications other than those described are not permissible without a written declaration of consent from Messrs. COOPER CROUSE-HINDS.

The instructions according to section 7 of the operating instructions shall be observed during operation.

The sole responsibility with respect to the suitability and proper use of these entry components with regard to the basic conditions of these instructions (see Technical Data) lies with the operator.

The EC-Type Examination Certificate and any future supplements thereto shall, at the same time, be regarded as supplements to the EC-Type Examination Certificates PTB 99 ATEX 3128 X and PTB 99 ATEX 3101 X.



6 Installation

The relevant national regulations and the generally recognized rules of engineering apply for the installation and operation. (IEC/EN 60079-14).

⚠ The improper installation and operation of enclosures can result in the invalidation of the guarantee.

⚠ Observe the special operational conditions accordance to IEC/EN 60069-14.

⚠ Only fixed cables may be used. The operator shall ensure that an appropriate strain relief is provided. This is not required for trumpet-shaped glands.

⚠ The degree of protection IP66 is only attained if the seals and cable entries are installed correctly.

⚠ Cable entries that are only suited for a low impact energy shall be built into an enclosure in such a way as to protect them from a mechanical impact energy.

6.1 Mounting

⚠ Prior to mounting, ensure that the threads of the entry components match the threads of the apparatus or enclosure.

⚠ If the entries and components are to be screwed directly into the walls, the wall thickness of the apparatus shall be at least 4 mm.

⚠ Counter-nuts shall be used if enclosure walls are less than 4 mm thick. The minimum thickness of the enclosure wall shall be 1.5 mm.

⚠ The use of entry elements with damaged or dirty threads can impair the IP degree of protection.

⚠ Imported Cables and wiring shall be relieved of tensile forces (eg with a cable clamp).

6.1.1 Cable entries (KLE)

The intermediate gland (see Fig. 1) of the cable entries shall be fitted with a suitable tool, e.g. fork, ring or box spanner.

It is mounted directly in the threaded hole or via the through hole of the enclosure (see Fig. 2).

If the sealing surfaces are uneven, seals shall be used between the enclosure wall and the intermediate gland (see Fig. 3).

Counter-nuts shall be used for walls with a thickness of less than 4 mm (see Fig. 2).

Cables are fed in as shown in Fig. 4.

The seal inserts shall be chosen to suit the respective cable diameter (Page 13 Figs. A, B, C and D).

Use COOPER CROUSE-HINDS spanners with a side opening can be used to facilitate the tightening of the pressure screw when the cable entry has been mounted (see Fig. 5).

Order No. GHG 960 1951 R0001 for Set 1 (M12, 16, 20, 25, 32 and 40)

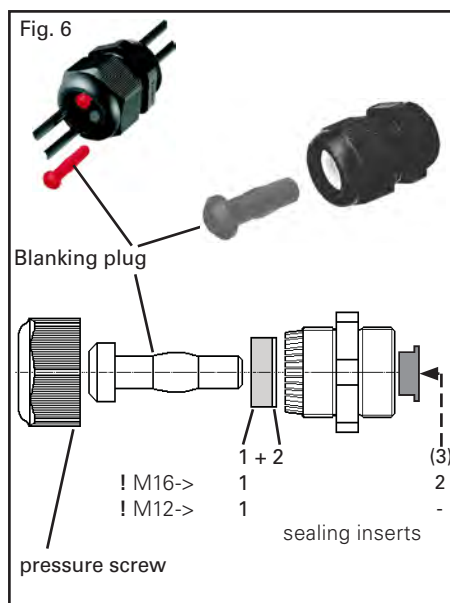
Order No. GHG 960 1951 R0002 for Set 2 (M50 and M63)

To ensure the required minimum degree of protection, the gland body and the pressure cap shall be tightened with the given test torques (see Technical Data).

When tightening the pressure cap, the gland body shall be prevented from turning with a suitable tool, e.g. a spanner.

⚠ Overtightening can impair the degree of protection.

Optionally, cable entries with colour-coded (light blue) pressure screws can be used for intrinsically safe circuits (see main COOPER CROUSE-HINDS catalogue for order numbers).

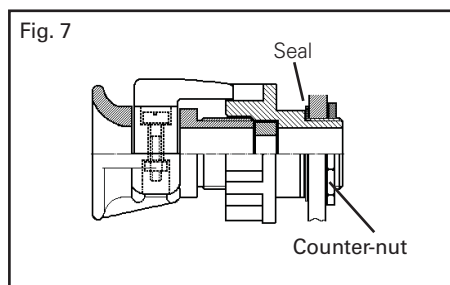


6.1.2 Blanking plugs

⚠ Blanking plugs of the types GGH 960 6107 P**** or GHG 960 1944 R**** may only be used in conjunction with cable entries of the types GHG 960 92** P**** or GHG 960 19** R****.

The following shall be observed when mounting blanking plugs for COOPER CROUSE-HINDS metric cable entries (see Fig. 6):

1. Only the blanking plug associated to the KLE shall be used.
2. When closing the gland with a blanking plug, always use sealing inserts 1+2!
3. The head of the blanking plug shall, as shown in Fig. 6, be on the outside.
4. The blanking plug shall be pushed into the KLE until it reaches the stop.
5. The pressure screw of the KLE shall be tightened down as described in 6.1.1.



6.1.3 Screw plug

The screw plug shall be screwed tightly into the threaded hole in the enclosure using a suitable tool, e.g. 8 mm socket head spanner or a suitable screw driver.

A counter-nut shall be used for through holes or enclosures that are less than 4 mm thick.

An additional seal shall be used for uneven sealing surfaces.

⚠ In general, the M50 screw plug shall be mounted together with the seal supplied.

6.1.4 Trumpet-shaped gland

A suitable tool, e.g. a fork spanner, shall be used for mounting the intermediate gland in the trumpet-shaped gland in such a way that it cannot twist.

It is necessary to ensure that the gland cannot twist once the cable has been fed in and the trumpet-shaped gland mounted (e.g. by using a counter-nut, see Figs. 7 + 8). A counter-nut shall be used for through holes or enclosures that are less than 4 mm thick. When mounting, a seal shall always be used between the enclosure wall and intermediate gland (see Fig. 7).

The following describes the mounting of the cable in the trumpet-shaped gland, as shown in Fig. 8:

1. Cut out the individual rings of the "onion ring" seal insert to match the respective cable diameter.
2. After feeding in the cable, that has been cut to length and has the seal mounted, into the intermediate gland, screw the trumpet-shaped gland tightly into the intermediate gland to seal off the cable.
3. Then mount the pull relief on the trumpet-shaped gland.

⚠ It is necessary to ensure that there is sufficient pull relief, that damage to the cable is not possible and that the trumpet-shaped gland cannot twist.

6.1.5 Reducing gland

A suitable tool, e.g. a fork, ring or box spanner, shall be used for screwing the reducing gland tightly into the threaded hole in the enclosure.

A counter-nut shall be used for through holes or enclosures that are less than 4 mm thick.

An additional seal shall be used for uneven sealing surfaces.

⚠ Screwing several reducing glands one inside the other to reduce the size of the entry thread is not permitted.

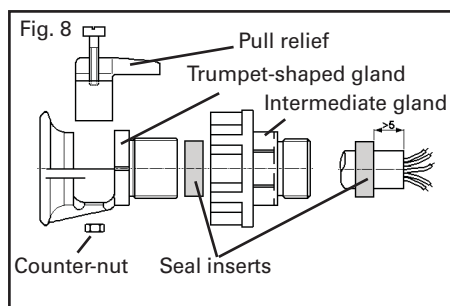
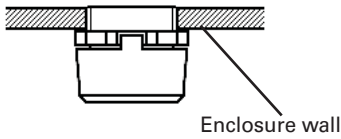


Fig. 9



6.1.6 Drain plug

A suitable tool, e.g. a fork, ring or box spanner, shall be used for screwing the drain plug tightly into the threaded hole in the enclosure.

An additional seal shall be used for uneven sealing surfaces.

The drain plug shall be mounted at the lowest point of the apparatus or enclosure (see Fig. 9).

⚠ The minimum wall thickness may not be less than 4 mm.

Entry components shall be screwed in tightly to ensure the specified minimum degree of protection (see Technical Data for test torques).

⚠ Overtightening can impair the degree of protection.

6.2 Putting into operation

Prior to putting the mounted entry components into operation, the tests specified in the individual national regulations shall be performed.

In addition to this, prior to putting the entries into operation, the correct mounting shall be checked in accordance with these operating and mounting instructions and any other applicable regulations.

⚠ In locations where they are particularly at risk, the entries shall be safeguarded against being torn out of the apparatus or enclosure walls by external mechanical influences (e.g. by fork lift trucks, by knocking or similar).

7 Maintenance / Servicing

⚠ The valid national regulations for the servicing / maintenance of electrical apparatus for use in potentially explosive atmospheres shall be observed (e.g. IEC/EN 60079-17).

The necessary intervals between servicing depend upon the specific application and shall be stipulated by the operator according to the respective operating conditions.

As part of the routine testing, above all, parts on which the explosion protection depends shall be checked (e.g. intactness of entry components and seals).

Pressure screws of cable entries, trumpet-shaped glands of trumpet-shaped cable entries shall be checked at regular intervals to ensure that they are screwed in tightly and, if necessary, they shall be tightened down.

If, in the course of servicing, it is ascertained, that repairs are necessary, section 8 of these operating instructions shall be observed.

8 Repairs / Modifications

Only original COOPER CROUSE-HINDS parts shall be used for carrying out repairs that concern the explosion protection.

⚠ Repairs that affect the explosion protection may only be carried out by COOPER CROUSE-HINDS or by a qualified electrician in compliance with the respective national regulations (e.g. IEC/EN 60079-19).

Modifications to the entry components are not permitted.

9 Disposal / Recycling

The respective valid national regulations for waste disposal shall be observed when disposing of apparatus.

To facilitate recycling of individual parts, parts made of moulded plastic bear the marking for the type of plastic used.

The product range is subject to changes and additions.