CABLE GLANDS and ELETRICAL FITTINGS
for electrical plants

2025

ELFiT®

ELectrical FITtings





for electrical plants

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INTRODUCTION

FROM CABLE GLANDS TO ELECTRICAL FITTINGS FOR ELECTRICAL PLANTS

1

Elfit S.p.a.: the value of experience



Fig.1 e 2 Elfit's plant at the beginning of 80's

During the '70s, **Elfit** company was estabilished in order to carry out some strategic internal processes of Cortem and to provide the market with complementary lighting products, such as electrical equipment, cable glands and junction boxes. Thanks to its reliability and the service offered, it becomes an important player of Oil&Gas field with a highly qualified brand, both in Italy and internationally. Due to a continuous improvement of technology and investments, Elfit is specialized in foundry, mechanical workshop and in the manufacturing of explosion and weather proof cable glands, junction boxes and electrical fitting.

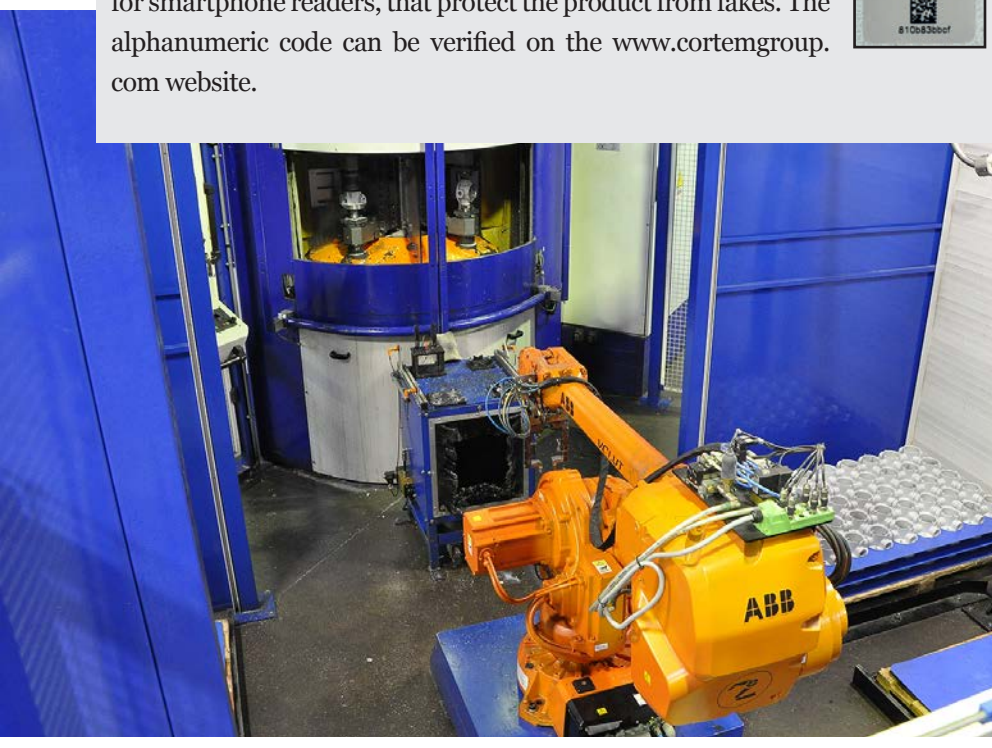




Today Elfit, along with Cortem and Fondisonzo brands, forms **Cortem Group**, one of the main international leader of Oil&Gas for the explosion-proof field. The peculiarity of Cortem Group is the experience gained in almost 50 years of activity in the Ex field which results not only in the supply of simple Ex-products, but also in customized solutions.

Cortem Group's products are available in different executions, "Ex d", "Ex e", "Ex de", "Ex i", "Ex n", "Ex t", and are manufactured using low copper aluminium alloy, stainless steel and plastic materials which ensure strenght and duration over the time.

Their autenticity is guaranteed by the application of an adhesive label with a 3D matrix, an alphanumeric code and a QR code for smartphone readers, that protect the product from fakes. The alphanumeric code can be verified on the www.cortemgroup.com website.



CORTEM® GROUP

To be sure to be safe.



Fig.3
Above, Cortem Group's plant today

Fig.4 e 5
Above and on the left, the modern production technologies of Cortem Group

ELFIT® ELectrical FITtings



Fig.6
Products' certificates





Cortem Group electrical equipment are certified in accordance with the European standard ATEX, the International regulation IEC Ex, also obtained the regulatory compliance to INMETRO standard for Brazil and TR CU standards for the Eurasian Customs Union. Respecting these strict international construction rules, guarantees the safety of people and environment.
Cortem Group manufactures its products using modern processes, plants and qualified personnel. The quality management system conforms to UNI EN ISO 9001:2015 standard.
Furthermore, Cortem Group has developed an Occupational Safety and Health Management System certified according to OHSAS 18001:2015 Standard.

The Elfit production included in this catalogue can be summarized in the following macro-categories:

1. Ex-proof cable glands with compression ring and barrier cable glands for armoured and non-armoured cable; plastic cable glands for non-armoured cables and other applications.
2. Electrical fittings: three pieces unions, adaptors, closing plugs, available with different threads and methods of protection, 90°elbows, open elbows, couplings, sealing fittings and pulling fittings, rigid and flexible conduits.
3. Ex-proof junction boxes and pulling boxes.
4. Weather-proof pulling boxes and cable glands.



Fig.7
Management system certificates



2. The cable gland

If we go back in time to the end of the first half of the last century, electrical systems suitable for hazardous areas were mainly realized in conduit "Freez moon" type and the ending on the input/output of flameproof enclosures were realized with sealing fittings next to the boxes (the old standard CEI 64-2 said that sealing fittings had to be positioned at a maximum distance of 450mm and only one joint was allowed between two enclosures with a distance not higher than 900mm).
This technique, still required today for some particular cases, except that distances have to be in compliance with the current standard EN 60079-1, had the disadvantage of having to cut the cable in case of reinstatement, with economical increases due to the impossibility to recover the cable because it is sealed into the sealing fitting.
The coming of cable gland has radically changed the plant approach, firstly simplifying the installation (image the difficult to align input/output conduits with entry/exit from junction boxes) and then giving the possibility to recover the cable in case of reinstatement.
Since the beginning of its activity, Elfit has been realizing products in compliance to current standards and in order to be used with a wide range of cables both armoured and non-armoured.
The cables usually used in on-shore and off-shore plants are divided in:

- non-armoured cables in PVC, for fixed sediment, with insulation class 0,6/1kV;

- insulated cables with wireframe ethylene prophylene (EPR) or (XLPE), insulation class 0,6/1kV;

- armoured steel wire (SWA) or armoured aluminium wire (AWA).

In a first production phase, cable glands were realized with a sealing rings kit due to manufacturing characteristic of these cables with different diameters that change from manufacturer to manufacturer.
Anyway, this solution caused a waste of spare materials because the exact diameters of cables are not usually available during the design phase.
To avoid the unused and the consequent waste of sealing rings, Elfit focuses its research activity towards the optimization of those gaskets.
The cable glands series features only one sealing ring suitable to the variables of cables size, both armoured and non-armoured. Moreover, it provides only one opening key that simplifies the assembly.
This new series has successfully got the product certification by international licensed authority.

Current standards relevant to products suitable to be installed in hazardous areas have settled a method to carry out plants that simplifies mounting and maintenance operations, always respecting what is defined by the standards.

2.1 THE SELECTION OF CABLE ENTRY SYSTEMS IN EXPLOSION-PROOF JUNCTION BOXES

The selection of the cable entry in explosion-proof junction boxes must comply with the requirements of EN 60079-14 standard and in particular:

- Cables with sheaths with low tensile strength, known as "easy tear", must not be used in areas with risk of explosion if not installed in protective conduit. Thermoplastic wire of the type in polyvinyl chloride (PVC) with a tensile strength of 2.5 N / mm2; in polyethylene with a tensile strength of 15.0 N / mm2 and cables in elastomeric polychloroprene or chlorosulfonated or polyethylene or similar polymers with a tensile strength of 15.0 N / mm^2, are commonly classified as "easy tear".
- The cables for fixed installations must be suitable to the environmental conditions and must be sheathed in thermoplastic, thermosetting or elastomeric material and mineral insulated metal sheathed.
- When there is the possibility of gas or vapour transfer through the interstices between the conductors of a cable, to a non-hazardous area or to a different hazardous area, the construction and the use of the cable must be designed so that to avoid the flame propagation (See Note 2 in Figure 8).
- When it is not applicable as described in paragraph above, must be used mineral insulated cables, with sealing, for example our barrier cable glands series NEVB ...
- The cable glands must be properly selected depending on the specific cable diameter. It is not allowed the use of sealing tapes, thermo-tightening sheath or other materials such as fillers for the achievement of the sealing diameter on the cable gland.
- The choice of the cable glands must comply with the provisions of Section 10.6.2 of EN 60079-14 which are summarized in the flow, in Figure 8.

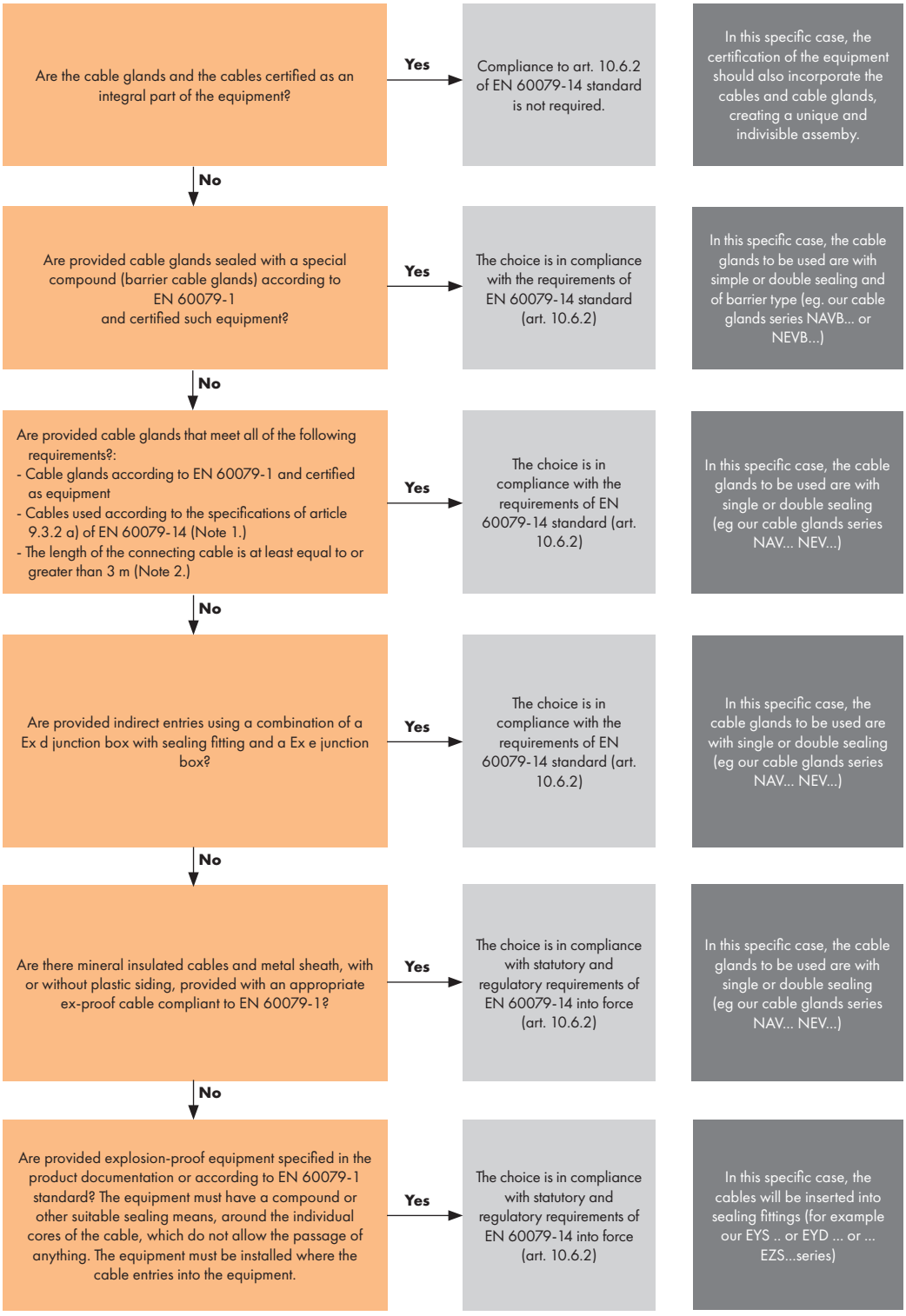


FIG.8 **Flow chart for the correct selection of the cable entry in Ex d junction boxes**

Note 1. With a sheath in thermoplastic, thermosetting or elastomeric material. They must be circular and compact. Any padding or sheath must be extruded. Any fillers must be non-hygroscopic.

Note 2. The minimum cable length is defined in order to limit the potential danger due to the transmission of flame through the cable.

2.2 *A COMPLETE RANGE OF SOLUTIONS FOR OIL&GAS APPLICATIONS*

INDUSTRIAL PLANTS WITH RISK OF EXPLOSION: CABLE GLANDS WITH COMPRESSION RING FOR AMOURED AND NON-ARMOURED CABLE



NAV, NEV, NAVF, NAVN, NEVL, NAVFS, NAVNS SERIE



For armoured and non-armoured cable, protection method flame-proof "Ex db", increased safety "Ex eb", dusts protection "Ex tb", 'Ex nR' restricted breathing, Zone 1, 21, 2, 22, Gas group IIC, Dusts group IIIC, IP 66/67. The have only one sealing ring that guarantees explosion and IP protection, they are available with male and female threaded hub for armored cables with lead sheath and for non-armored flat/heating cables, optical fiber cables.

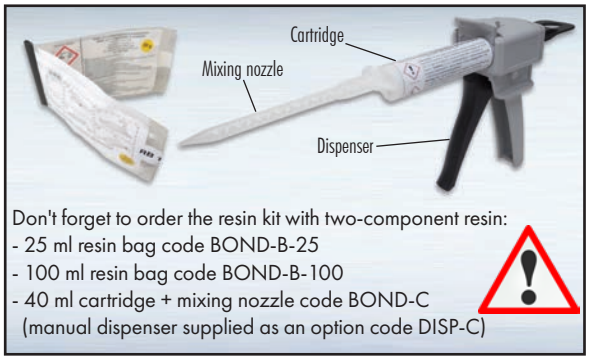
INDUSTRIAL PLANTS WITH RISK OF EXPLOSION: BARRIER CABLE GLANDS FOR ARMOURED AND NON-ARMOURED CABLE



NAVB, NAVBF, NAVBN, NEVB SERIES



For armoured and non-armoured cable, protection method explosion-proof "Ex db", increased safety "Ex eb", protection against dusts "Ex tb", 'Ex nR' restricted breathing, Zone 1, 21, 2, 22, Gas group IIC, Dusts group IIIC, IP66/67. Barrier cable glands are supplied with a resin finishing kit:



INDUSTRIAL PLANTS WITH RISK OF EXPLOSION: CABLE GLANDS FOR NON-ARMOURED CABLES IN HIGH RESISTANCE POLYAMIDE



NAVP SERIES



For non-armoured cables, protection method increased safety "Ex eb", "Ex tb" for dusts, Zone 1, 21, 2, 22, Gas group IIC, Dusts group IIIC, IP66/68, ISO and PG threads. Cable glands are easy to install, impact resistant until 7J and guarantee Ex and IP protection on to the external sheat of the cable.

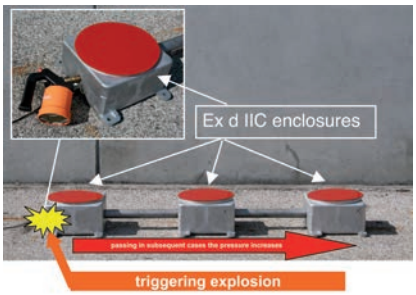
2.3 THE MARKING OF THE CABLE GLAND BY LASER ENGRAVING

Metal cable glands, whether they are simply sealed for unarmoured cables, whether they are double-sealed for armored cables or barrier-type, are marked by Cortem Group through laser engraving.
The use of laser marking on metals allows extremely rapid and precise processing to guarantee a greater visibility and a constant traceability of the products over time, also thanks to the constant and continuous technological updating of the machinery.
The laser marking process on metals offers significant advantages:
- it is an extremely precise and clean method realized through a non-contact procedure that does not require preventive or subsequent processing;
- guarantees the identification and the traceability of products with a very high resolution finish;
- ensures acids and chemicals resistant working;
In our laboratories all the necessary verification tests have been carried out: aging cycles, aimed at checking the permanence of the marking, resistance to changing ambient temperatures, from -60 ° C to + 150° C, tests in wet saline environment, seal tests to chemical and petrochemical agents with presence of hydrocarbons.

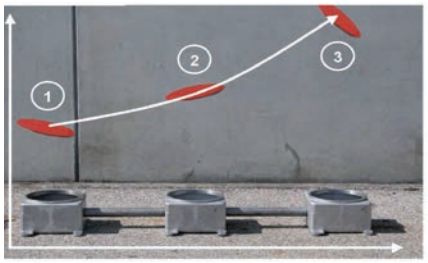


2.4 CABLE INSTALLATION AND CONDUIT INSTALLATION

It is important to check the match system between different enclosures that, contrary to industrial equipment (concerning standards EN 61439), requires to install specific sealed fittings between two junction boxes, so as to avoid the spread of a possible explosion that could accidentally occur in one of those enclosures.
As it is shown in the images sequence below reported, the lack of sealed fittings causes not only the passage of the explosion to the next enclosure, but it even generates an increase of the pressure originated from that explosion, with a consequent greater risk of damages to people.
The standard EN 60079-1, section 13.2.2, says "The distance from the face of the seal closest to the enclosure (or intended end-use enclosure), and the





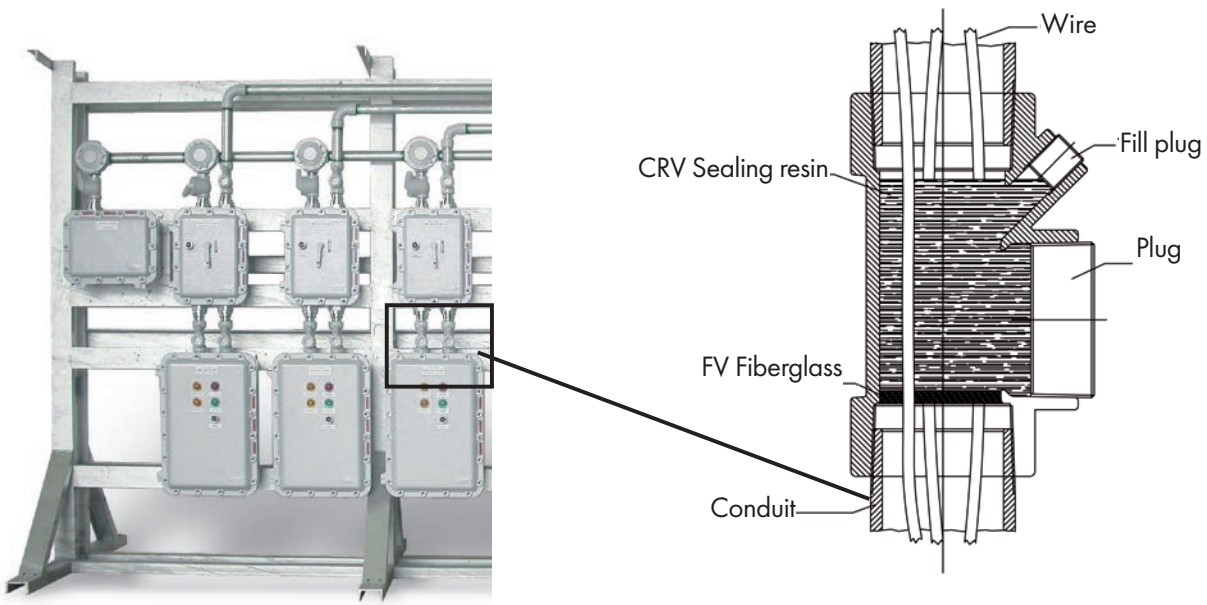


outside wall of the enclosure (or intended end-use enclosure) shall be as small as practical, but in no case more than the size of the conduit or 50 mm, whichever is the lesser", so the sealed fitting should be installed next to the junction box, to give the right functional warranty, as specified on section 10.5 of Standard EN 60079-14 which says *"A conduit sealing device is considered as fitted immediately at the entry of the flameproof enclosure when the device is fixed to the enclosure either directly or through an accessory necessary for coupling according to the manufacturer's instructions".*
In the conduit installation, the electric cables run in a system of rigid conduits and enter explosion-proof boxes by means of sealed fittings. This avoids possible explosions to expand and spread inside the housings (Fig. 9). The outlet of every “Ex d” box features a sealed fitting which prevents explosions from spreading to other sections, delimits the volume of the “Ex d” electrical construction to a value close to that for which it has been proven, and separates the conduit installation from a possible part made with external cables.
In conduit installations, wires pass inside a threaded conduit "freez moon"

and though a sealed fitting; these sealed fitting must be filled with the right mixture of bi-component resin. This method effectively protects cables against mechanical and chemical damage. One disadvantage is that it is difficult to change the wiring later on.
On Fig. 9 there is an example of cable installation with mounting of sealing joints.
Cable installation, with use of specific cable glands, can be realized both with direct and indirect entry.

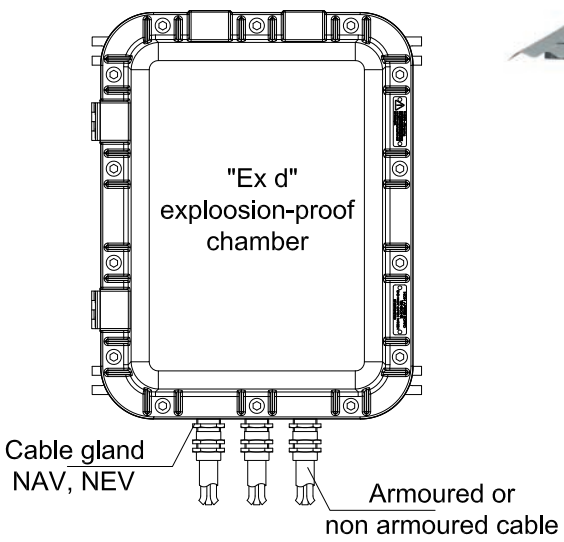
In the cable installation with direct entry, (Fig. 10) cable glands are restricted

FIG.9 **Example conduit installation. Between the enclusures, EYS series sealing fittings are visible**



directly on one or more sides of the "Ex d" enclosure and, thanks to their peculiarity, they realize the same segregation degree of the sealed fitting with the advantage of being inspect (possible cable replacement).
In the cable installation with indirect entry, (Fig. 11) cable glands are increased safety "Ex e" type and tested on one or more sides of the enclosure in "Ex e" execution. By means of sealed bushings, the "Ex e" box is connected to the "Ex d" box.

FIG. 10 Example of directly cable entry



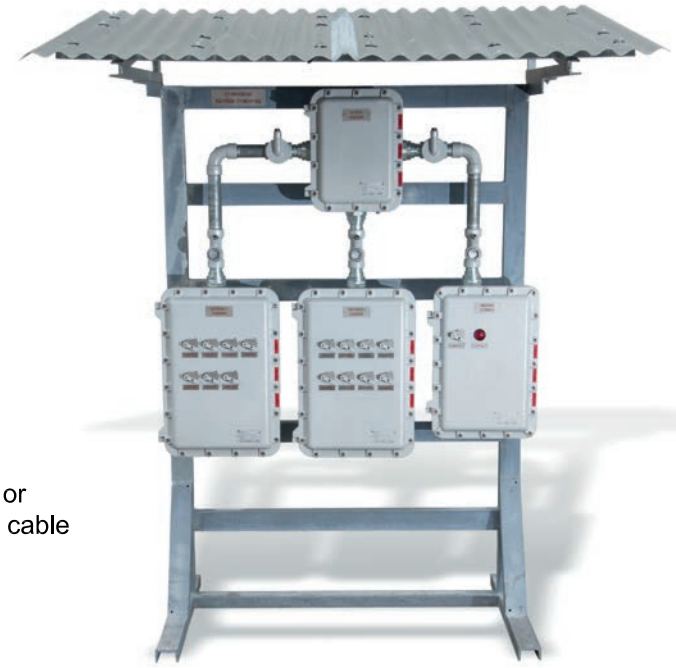
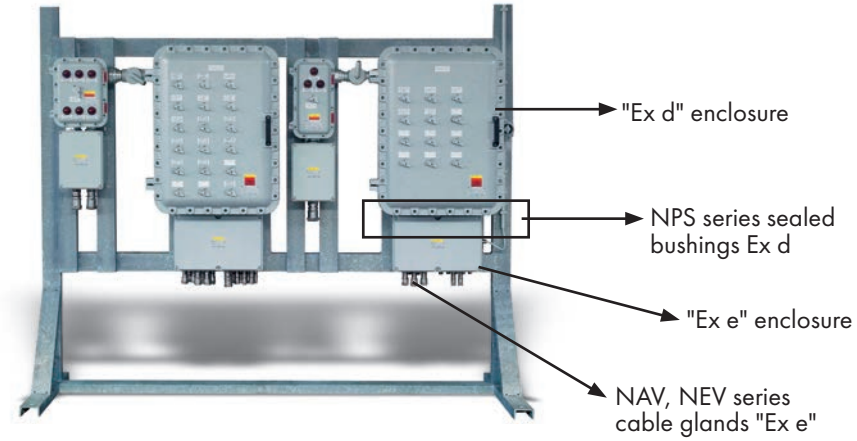
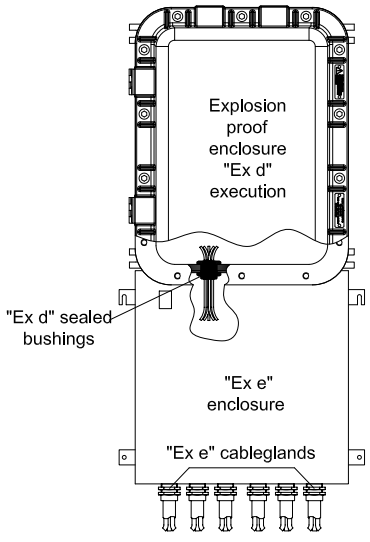


FIG. 11 Example of indirect cable entry



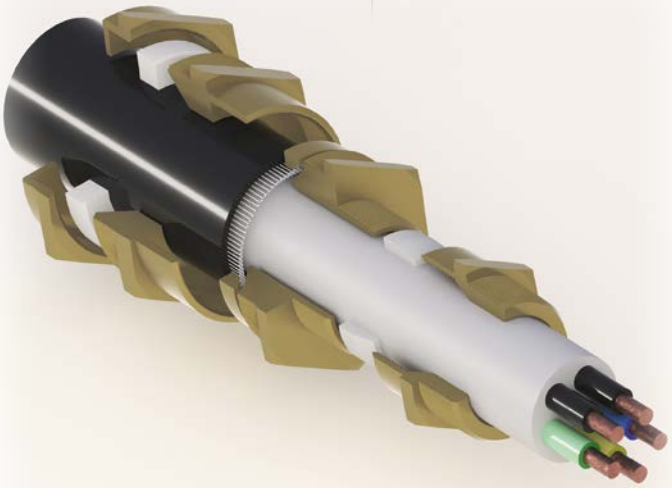


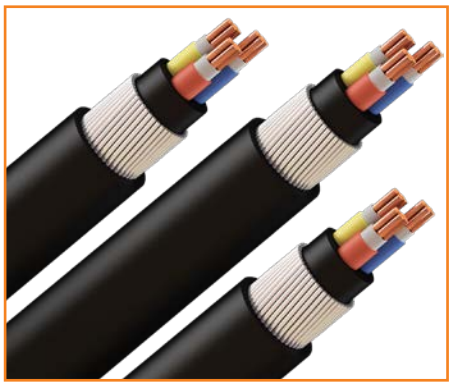
3. Type of electrical cables

Electrical cables can be of two types: copper and aluminium made. When electrical cables and/or conductors are constructed of ropes or wire of aluminium, the terminal connections such as terminals or attacks of equipment, must be suitable for the coupling with aluminium in order to avoid electrolyte corrosion effects resulting from couplings with brass/aluminium or copper/aluminium.

Such aluminium cables and/or conductors, with the exception of intrinsically safe systems and with limited energy, must usually have a section not less than 16mmq and the connections must ensure that the distances of surface insulation and in the air are not reduced by the additional means required for connection.

Must not be used cables with traction strength of internal and external sheath less than 8.5 MPa. Cables with traction resistance lower to 8.5 MPa are commonly known as "easy tear" cables.





Cables used for fixed installations in dangerous areas, under operating conditions (hot cables) must be suitable for the environmental conditions and must have the following features:

- be made of thermoplastic, thermosetting or elastomeric material, they must be circular and compact, any padding and sheaths must be extruded and any fillers must be of non-hygroscopic material;
- or they must be made with mineral insulation under metal sheath;
- or they must be of a special type, such as flat cables that must be coupled with cable glands suitable for such types of cables, having however the same constructive features as described above.

When there is a probability of gas or vapour transferring through the interstices between the individual cable cores and the cable leads to a non-danger-

ous place or in zones with a different explosion hazard, the intended construction and use of the cable falls in the provision of paragraph 10.6.2, paragraph b)

Flexible cables used for fixed installations in dangerous areas, with the exception of intrinsically safe cables, must be suitable for the environmental conditions and must have one of the following features:

of IEC/EN 60079-14.

- be made of hard rubber sheath for ordinary use;
- be made of polychloroprene sheath for ordinary use;
- be made of hard rubber sheath for heavy use;
- be made of polychloroprene sheath for heavy use;
- be made with thermoplastic insulation and of robust construction equivalent to the one of flexible cable with hard rubber sheaths for heavy use.

The cable temperature must never exceed the value of temperature relative to the specific Temperature Class assigned to the installation area for such cables.
All cables for fixed installation must have the characteristics of non-propagation of the flame, in agreement to IEC 603321-2 or IEC 60332-3-22 standard or to other kind of protection such as laying in sand filled tubs or using flame retardant barriers installed at the entrance of the cables in the classified area, in order to prevent the propagation of the flame and, consequently, an explosion.

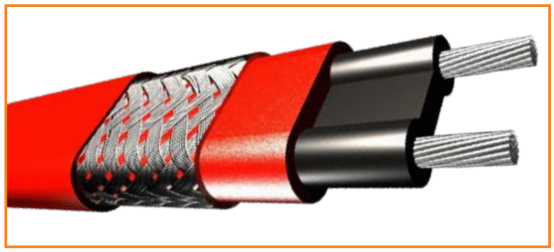


3.1 TYPICAL COMPOSITION OF ELECTRICAL CABLES

Premise

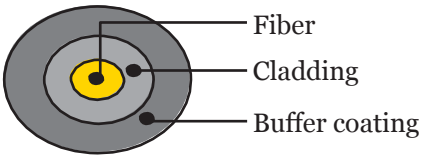
Here below we'll explain the typical cable formation, without getting into specifics of the constructive form which, referring to the paragraph 9 of 60079-14 standard, may be of different form and function, in relation to specific plant requirements. ELFIT, aware of these necessity, has created a series of specific accessories for the installation of cables such as:

- Flat cables, specific for handling and lifting systems of and suitable for transport systems for use in lifting systems, automated logistics and vertical storage systems, also suitable for use in cable chains for moving machines.



Example of heating cable

- Cables for transporting light signals (optical fibers). The transmission of a signal in fiber optic cables takes place through the principles of reflection and refraction of the light beam obtained by converting an electrical signal or pulse. The light beam that passes through the conductor, plastic or glass, is reflected (rebounds) with a certain angle of incidence on the cladding of the conductor called "cladding", inside the optical fiber. The goodness of the transmission over long distances will depend on the transparency and purity of the material constituting the optical fiber, hence the lesser refraction along the transmission line. In a time where the demand of fast and secure data networks is constantly growing, fiber optic cables are indispensable and irreplaceable. This type of cable is in fact better than the classic cables as it does not have the strand formation but it is like a single conductor.



a) Primary insulation

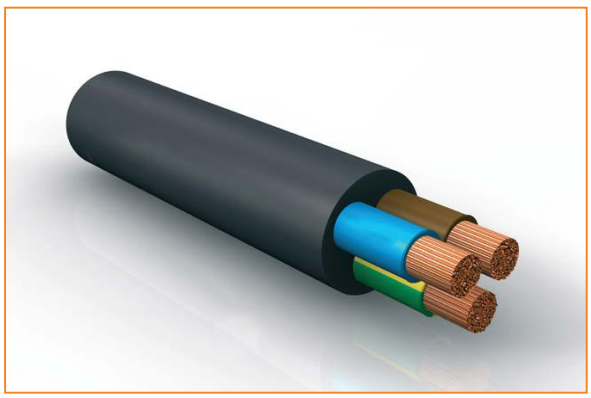
Cables with primary insulation in Polyvinyl Chloride (PVC)

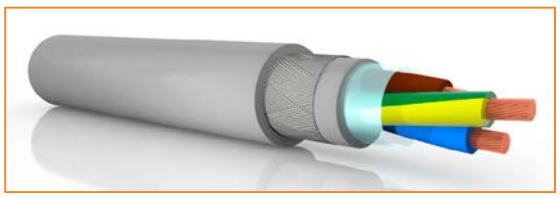
PVC is a versatile material that allows multiple content and different needs and it is the most commonly used for primary isolation in cables installed in generalized environments such as power supply utilities, signalling, lighting and, in general, all industrial electrical equipment.

Its operating temperature can range from 70° C to 125° C, depending on the different formulation of the compound used. The addition of special additives and plasticizers increases the strength of the compound at high temperature.
Special PVC with a higher oxygen index, are used in the case of compliance with non-propagating fire tests in accordance with standards CEI 20-22/2, CEI 20-2 /3, IEC 332.3A, IEC 332.3C.

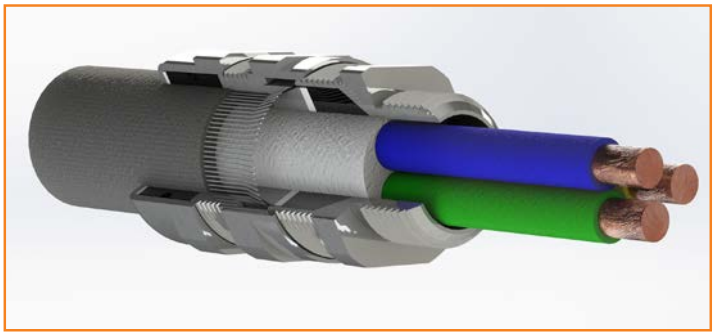
Cables with primary insulation in Polyethylene (PE)

Polyethylene (PE) is the most commonly used material for primary insulation of coaxial radiofrequency cables, which, due to its low dielectric constant (er = 2.3), it allows to produce low-capacity cables with speed of signal transmission which can also reach 0.8c (c = light speed)









in the case of cellular polyethylene. Furthermore, the dielectric constant and the factor of loss are largely independent from temperature and frequency.

Cables with primary insulation in cross-linked polyethylene (XLPE)

The crosslinked polyethylene (XLPE) is used for the primary insulation of cables of low, medium and high voltage, for signalling and control cables. The crosslinking process improves the cracking resistance under stress, the cold resistance and, as it does not melt like an elastomer, it is able to withstand thermal loads up to 120° C.

Cables with primary insulation in polypropylene (PP)

Polypropylene (PP) is used for the primary insulation of telecommunication cables, telephony, data transmission which, as mentioned for cables in PE, thanks to its low dielectric constant (er = 2.3), allows to realize low-capacity cables, with signal transmission speeds that can reach up to 0.75 ÷ 0.8c (c = light speed), in the case of cellular polypropylene.
Furthermore, the dielectric constant and the loss factor are largely independent from temperature and frequency and, in comparison to polyethylene, the polypropylene is more rigid.

Cables with primary insulation in Thermoplastic Rubber (TPE-O)

Thermoplastic rubber (TPE-O) is used for primary insulation for cables installed in generalized environments such as power supply, signalling, lighting and, in general, for all the electrical equipment of industrial type, combining the performance of vulcanized rubbers such as heat and low deformation resistance and the ease of processing of thermoplastic materials.
This type of cable finds particular use as primary insulation for spiral and extensible cables, particularly in the automation sector where the flexibility is a key requirement.

Cables with primary insulation in thermoplastic elastomer with polyester base (TPE-E)

Polyester (TPE-E) is used for primary insulation of cables installed in generalized environments such as power supply, signalling, lighting and, in general, all industrial electrical equipment, when it is required good resistance to flex, abrasion, impact, even at very low temperatures, temperature peaks and to chemical and atmospheric agents.

b) Secondary coating (sheaths)

With regard to PVC coating material, TPE-O and TPE-E, it's worth what written for primary isolation.

Cables with polyethylene sheath (PE)

Polyethylene is used as a secondary cable coating when it is required to lay it outdoors or in wet environments; in fact, this material has excellent resistance to water and salt solutions.

Cables with polyurethane sheath (TPE-U)

Polyurethane is used as a secondary coating for cables when flexibility features are required in a wide range of temperatures, ranging from -40° C to +100 ° C, toughness, resistance to chemicals and oils, hydrolysis resistance (Polyether polyurethanes), resistance to atmospheric agents and microbial (Polyether polyurethane), low coefficient friction (special polyurethane matte and silk surface: matte finish/low gloss compound), elastic memory.
It is used for spiral and extensible cables, in the automation sector, automotive, in electronics cables, for geophysical research, power supply of equipment, tools and industrial machines, signalling and command when it is required good resistance to flex for, abrasion, impact, very low temperatures and chemical and weather agents.

c) Conductors

The material used is mainly bare copper or tinned copper or aluminium.
Tinned copper is recommended when welding is required in the shortest possible time.
The conductors used may be of the type:

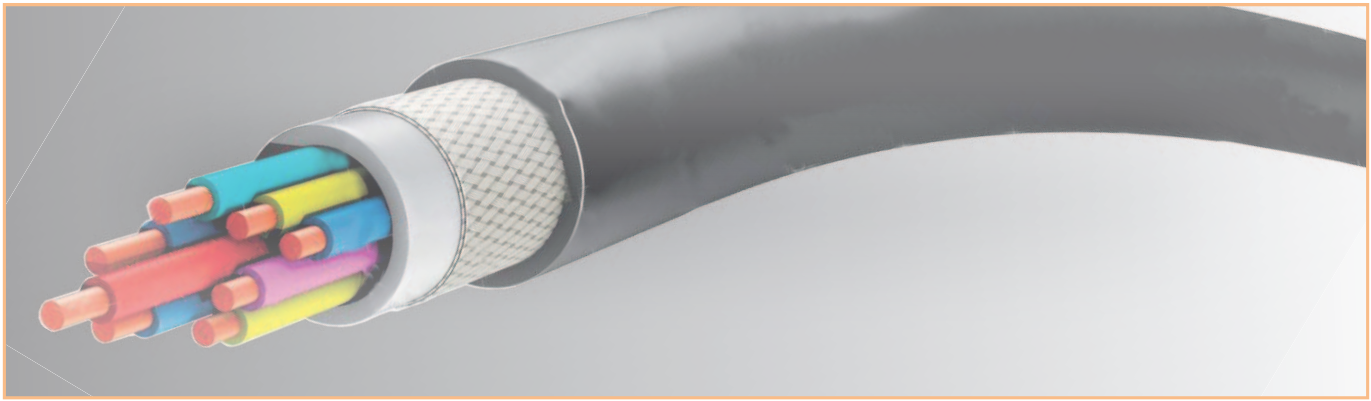
- *solid conductors*
- *bunched stranded conductors*
- *concentric stranded conductors*

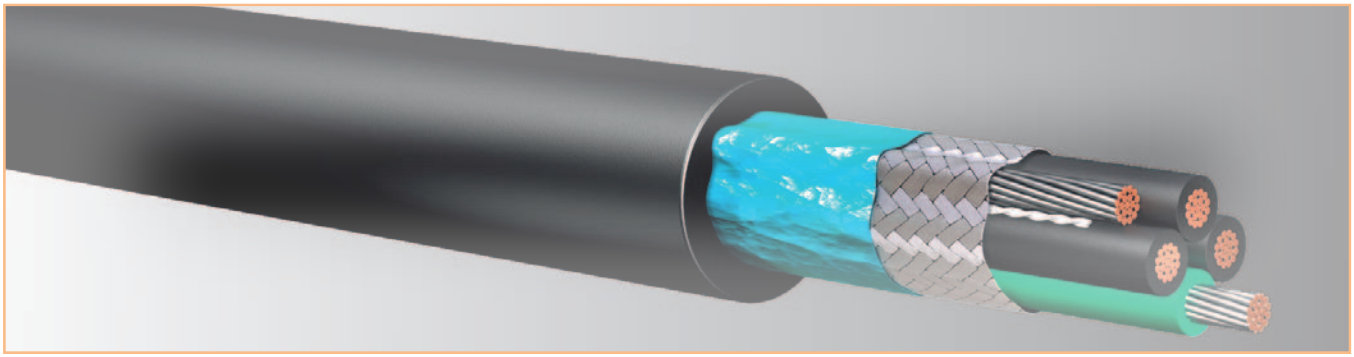
or of different flexibility depending on the application requested.

d) Armour

Typical types of armour used are:

- *smooth aluminium sheath, or metal braid armour (sock)*
- *lead alloy sheath*
- *non-alloy lead sheath*
- *cylindrical reinforcement wire, normally in steel*
- *steel reinforced reinforcement*
- *steel plate reinforcement*





e) Shielding

Typical types of shields used are:

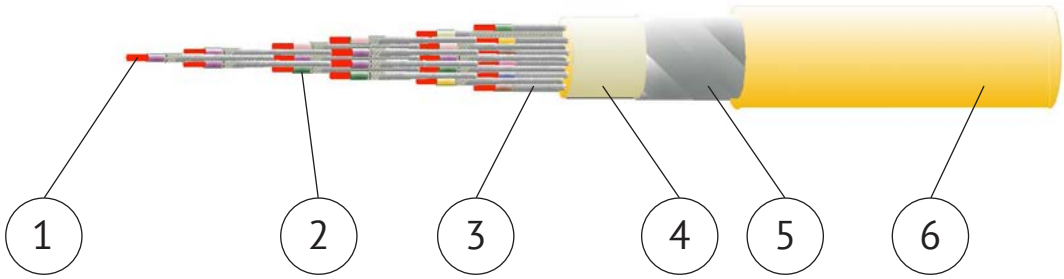
- *metallic paper or charcoal or aluminium tape screen*
- *strip or strip screen or copper wire*
- *braid or copper sleeve*
- *double braid or double copper braid*
- *longitudinal strip of corrugated steel*
- *coated aluminium longitudinal tape screen*

3.2 TYPICAL CHARACTERISTICS OF THE MATERIALS USED FOR THE INSULATION OF THE CABLES

Acronym	Material	Operating temperature °C	Density (g/cm^3)	Halogen content (%)	Dielectric constant (1MHz)	Dielectric strength (kV/mm)
PVC	Polyvinylchloride	15 ÷ 90	1,25 ÷ 1,5	35	4,5	> 12
PVC (spec.)	Polyvinylchloride	-40 ÷ +125	1,25 ÷ 1,5	35	4,5	> 12
PE	Polyethylene	-50 ÷ +80	0,92 ÷ 0,96	0	2,3	> 22
XLPE	Crosslinked polyethylene	-60 ÷ +120	0,91 ÷ 0,92	0	2,3	> 22
PP	Polypropylene	+40 ÷ +105	0,9	0	2,3	> 22
TPE-O	Thermoplastic rubber	-40 ÷ +125	0,95 ÷ 0,98	0	2,7	> 20
TPE-E	Thermoplastic elastomer based on polyester	-40 ÷ +105	1,20 ÷ 1,25	0	-	> 10
TPE-U	Polyurethane	-40 ÷ +90	1,12	0	-	> 10
TPE-U (spec.)	Polyurethane	-40 ÷ +105	1,12	0	-	> 10

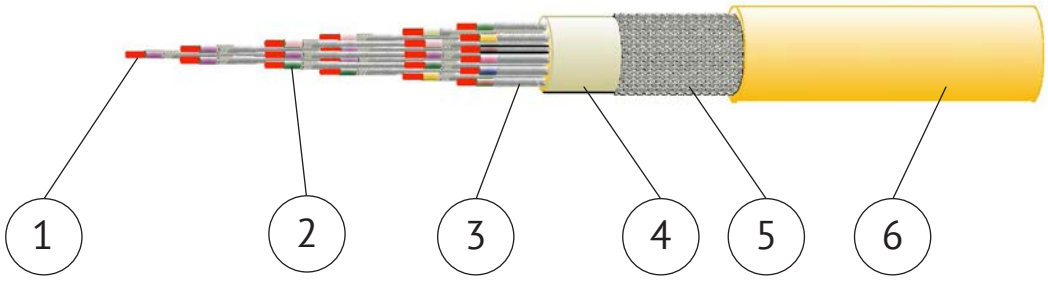
Some examples of electro-instrument cable

Instrumentation cables with shielding on individual core and total shielding



1	Conductor	Concentric copper conductor
2	Insulation	Synthetic rubber or ethylenepropylene rubber
3	Screen	Copper braid shield on individual cores
4	Filling	Non-hydrous material mixture
5	Shielding	Shielding tapes, wires or copper strips on the set of wire cores
6	Outer sheath	Common PVC, synthetic rubber or ethylenepropylene rubber

Instrumentation cables, with shielding on the individual core and outer armour



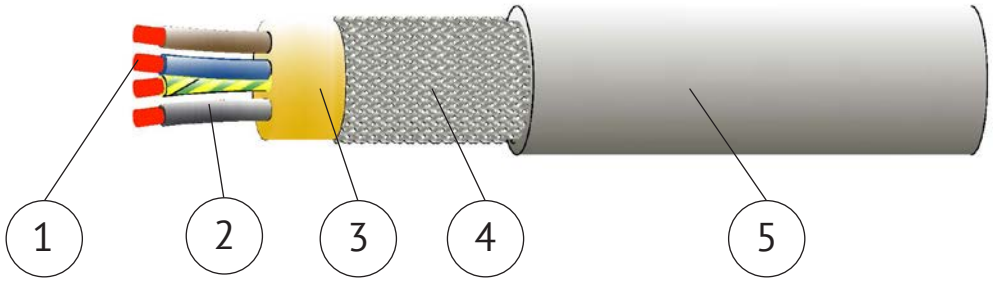
1	Conductor	Concentric copper conductor
2	Insulation	Synthetic rubber or ethylenepropylene rubber
3	Screen	Copper braid shield on individual cores
4	Filling	Non-hydrous material mixture
5	Armour	Braid armour made of steel wires or steel plates or steel strips
6	Outer sheath	Common PVC, synthetic rubber or ethylenepropylene rubber

Common PVC, synthetic rubber or ethylenepropylene rubber



1	Conductor	Concentric copper conductor
2	Insulation	Synthetic rubber or ethylenepropylene rubber
3	Outer sheath	Common PVC, synthetic rubber or ethylenepropylene rubber

Instrumentation cables, with shielding on the individual core and outer armour



1	Conductor	Concentric copper conductor
2	Insulation	Synthetic rubber or ethylenepropylene rubber
3	Filling	Non-hydrous material mixture
4	Armour	Braid armour made of steel wires or steel plates or steel strips
5	Outer sheath	Common PVC, synthetic rubber or ethylenepropylene rubber

Due to the wide variety of low and medium voltage cables and the different coding systems at international level, we provide a brief description of the coding criterion below.

Cable designation coding according to Italian standard CEI 20-27.

Reference to Standards	H	Cable conforming to harmonized standards	Conductor material	-	Copper
	A	Authorized national type cable		A	Aluminium
	N	Other type of national cable	Natura del materiale dell'isolante	V	Common PVC
Rated Voltage Uo/U	01	100/100V		V2	PVC for a temperature of 90° C
	03	300/300V		R	Synthetic rubber for a temperature of 60° C
	05	300/500V		B	Ethylenepropylene rubber
	07	450/750V		N2	Polychloroprene for welding cables
	1	0,6/1Kv		Z	Cross-linked polyolefins with low-emission of toxic and corrosive gas and fumes
Metallic covering (shielding and armour)	C	Concentric copper conductor		Z1	Thermoplastic polyolefins with low-emission of toxic and corrosive gas and fumes
	C4	Copper braid shield on the set of cores	Materiale della guaina	V	Common PVC
	C5	Copper braid shield on individual cores		V2	PVC for a temperature of 90° C
	C7	Trips, plates or copper wires protection on the set of the cores		V5	PVC oil-resistant
	Z2	Round steel wire armour		R	Synthetic rubber
	Z3	Steel plates armour		B	Ethylenepropylene rubber
	Z4	Steel strips armour		N	Polychloroprene
	Z5	Steel wire braid armour		N8	Water-resistant polychloroprene
Cable shape	H2	Flat cables "not divisible"		Q	Polyurethane
	H6	Flat cable with three or more cores		N4	Polyethylene chlorosulfonate or chlorinated polyethylene
	H7	Cables with double layer insulation applied for extrusion		Z	Cross-linked polyolefins with low-emission of toxic and corrosive gas and fumes
Conductor shape	U	Rigid single wire		Z1	Thermoplastic polyolefins with low-emission of toxic and corrosive gas and fumes
	R	Rigid with round rope			
	F	Flexible for mobile laying			
	K	Flexible for fixing laying			
	D	Flexible for welding cables			
	E	Very flexible for welding cables			

Cable designation coding according to Italian standard UNEL 35011-2000

Nature and quality of insulation	E4	Crosslinked polyethylene compound having a characteristic temperature of 85°C
	G	Natural and/or synthetic rubber compound having a characteristic temperature of 60°C
	G4	Silicone rubber compound having a characteristic temperature of 180°C
	G7	High modulus ethylene-propylene rubber compound having a characteristic temperature of 90°C
	G8	Ethylene propylene rubber compound suitable also for cables without protective covering having a characteristic temperature of 85°C
	G9	Smooth, corrosive, flame retardant elastomeric compound, suitable for cables without protective covering with a characteristic temperature of 90°C
	G10	Crosslinked elastomeric mixture with low-development of fumes and toxic/corrosive gases having a characteristic temperature of 90°C
	G19	Crosslinked elastomeric mixture with low-development of fumes and toxic/corrosive gases having a characteristic temperature of 90° C
	G20	Crosslinked elastomeric mixture with low-development of fumes and toxic/corrosive gases having a characteristic temperature of 90° C
	M9	Crosslinked elastomeric mixture with low-development of fumes and toxic/corrosive gases having a characteristic temperature of 90° C
	R	Polyvinylchloride-based mixture having a temperature of 70° C, T11 and T12 quality
	R2	Polyvinylchloride-based mixture having a temperature of 70° C, R2 quality
	R4	Polyamide resin compound
	R5	Fluorocarbon resin mixture
	R5F	Fluorocarbon-copolymer based resin mixture tetrafluoroethylene-hexafluoropropylene (FEP)
	R5M	Fluorocarbon-copolymer based resin mixture tetrafluoroethylene-hexafluoropropylene
	R5P	Fluorocarbon-copolymer based resin mixture tetrafluoroethylene-hexafluoropropylene
	R7	Polyvinylchloride compound having a characteristic temperature of 90° C, T13 quality
	T4	One or more strips of molten glass or closed glass braid
	V	Glass impregnated canvas
	T	One or more strips of molten glass or closed glass braid
Cable shape	0	Cores, possibly with its own covering, combined with or without fillers, to form a round cable
	D	Cores, possibly with its own covering, combined with or without fillers, parallel flanked to form a flattened cable
	X	Cores, possibly with its own covering, combined with or without fillers, combined in a visible helix
	W	Parallel joined cores, with an intermediate groove
	W1	Parallel joined cores with an intermediate insulating strip

Degree of flexibility of the conductor	A	Aluminum conductor
	F	Flexible rope conductor of round shape
	FF	Very flexible rope conductor of round shape
	R	Rigid string-shaped conductor of round shape, normally compact
	U	Single thread conductor, with round shape
	E	Thermoplastic polyethylene based mixture
Metal covering (shield and armour)	A	Smooth aluminum sheath, or metal braid armour (sleeve)
	F	Cylindrical wires armour, normally made of steel
	H5	Coated aluminum longitudinal tape screen
	L	Coated aluminum longitudinal tape screen
	N	Steel reinforcement armour
	P	Non-alloy lead sheath
	Z	Steel plate armour
Concentric shields and conductors	C	Copper concentric conductor
	H	Metallic paper or charcoal or aluminum tape protection
	H1	Protection with ribbons or strips or copper wires
	H2	Braid or copper sleeve
	H3	Double braid or double copper sleeve
	H4	Longitudinal strip of corrugated steel
	H5	Covered aluminum longitudinal tape screen
Sheaths (non-metallic covering)	E	Ez-quality thermoplastic sheath
	E4	E4M quality cross-linked polyethylene sheath
	G	Natural and/or Synthetic Rubber Sheath Gy quality
	G6	High quality polyethylene chlorosulfonate base compound G6M
	K	Basic sheath of polypropylchloroprene or equivalent quality products Ky, Kn and Kz
	R	Basic quality polyvinylchloride sheath Tm1, Tm2 and Rz
	R4	Polyamide resin base sheath
	M1	Low-temperature thermoplastic sheath with with low-development of fumes and toxic/corrosive gases
	M2	Elastomeric sheath with low development of fumes, toxic and corrosive gases of quality M2
	M3	Elastomeric sheath with low development of fumes, toxic and corrosive gases of quality M3
	M4	Elastomeric sheath with low development of fumes, toxic and corrosive gases of quality M4
	T	Flexible braid (possibly impregnated) of normal type
	T1	Glass strip bandage
	T2	Flexible braid special type (possibly impregnated)
Supporting element	S	Supporting element, generally with metal body, incorporated In the non-metallic sheath
	Y	Supporting element, textile or metallic, included among the cores or bounded outside the cable

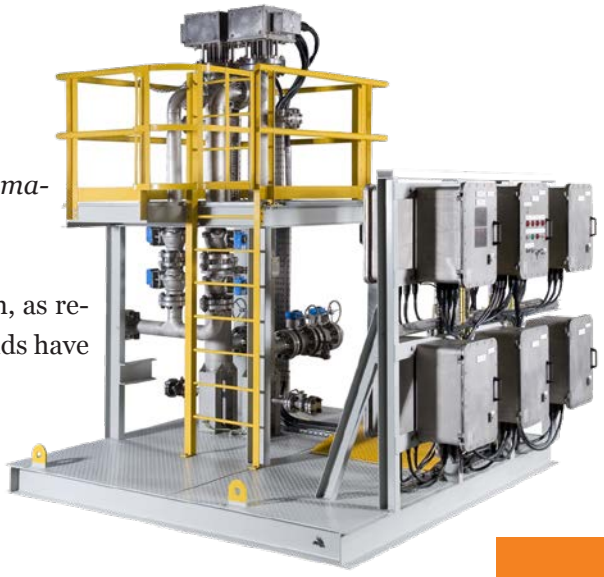
Cable designation according to the European CEI 20-27 / CENELEC HD361 system

Reference to Standards	H	Cable conforming to harmonized standards
	A	Recognized national type cable
	N	National type cable non-conforming to IEC Standard
Rated Voltage Uo/U	03	300/300V
	05	300/500V
	07	450/750V
	1	600/1000V
Insulating materials for sheathing	B	Ethylene propylene rubber for a continuous working temperature of 60° C
	G	Ethylene-vinyl acetate
	J	Glass fiber trace
	M	Mineral
	N	Polychloroprene
	N2	Special polychloroprene compound for cable covering for welders
	N4	Polyethylene chlorosulfonate or polyethylene chlorate
	N8	Special polychloroprene compound water-resistant
	Q	Polyurethane
	Q4	Polyamide
	R	Ordinary ethylenepropylene rubber and synthetic equivalent elastomer for a continuous operating temperature of 0°C.
	S	Silicon rubber
	T	Textile braid, impregnated or not, on the cores as a whole
	T6	Textile braid, impregnated or not, on the single core of a multipolar cable
	V	Commonly used polyvinyl chloride (or PVC)
	V2	PVC compound for a continuous operating temperature of 90°C
	V3	PVC compound for cables installed at low temperature
	V4	Cross-linked PVC
	V5	Special PVC compound oil resistant
	Z	Crosslinked polyolefinic compound that in case of combustion emits a low amount of fumes, toxic and corrosive gases
	Z1	Thermoplastic polyolefinic compound that in case of combustion emits a low amount of fumes, toxic and corrosive gases

Metallic covering (concentric conductor and screens)	C	Concentric copper conductor
	C4	Copper protection in the form of braid on the set of cores
	C5	Copper braid shield on individual cores
	C7	Strips, plates or copper wires protection
	A7	Aluminum protection
Special shapes and constructions	Z2	Steel wires armour
	Z3	Steel plates armour
	Z4	Steel strips armour
	Z5	Steel wire braid
Special shapes and constructions	H	"Divisible" flat cables with or without sheath
	H2	Flat cables "not divisible"
	H6	Flat cable with three cores, according to HD 359 or EN 50214
	H7	Double layer insulating cable applied for extrusion
	H8	Extensible rope
Degree of flexibility of the conductor	D	Flexible conductor for use in cables for arc welders, according to HD 22 part 6 (different flexibility of the Class 5 of HD 383)
	E	Flexible conductor for use in cables for arc welders, according to HD 22 part 6 (different flexibility of the Class 5 of HD 383)
	F	Flexible conductor of a flexible cable (flexibility according to Class 5 of HB 383)
	H	Very flexible conductor of a flexible cable (flexibility according to Class 6 of HB 383)
	K	Flexible conductor of a cable for fixed installations (if not differently specified, flexibility according to the Class 5 of HD 383)
	R	Sturdy, round, rope conductor
	U	Sturdy, round conductor with one wire
	Y	Conductor made of similar copper

As can be understood from the identification and cable formation tables, which vary in function of the applied regulations, who designs and produces cable glands has a considerable amount of selections to do in order to be able to satisfy the needs of the designer of electro-instrumental equipment and, last but not least, a careful analysis of the dimensioning of the mechanical seals according to the diameters below armour (Inner) and max. external cable diameter (outer).
In addition to the above, the plant technician must also pay close attention to the method to be adopted for the design and choice of cable gland, always keeping in mind the requirements of IEC/EN 60079-14 para. 10.6.2 (see Figure 8 in the previous paragraph).

3.3 TYPICAL EXAMPLES OF PLANT DESIGN



1. *Process skids, with control panels command placed on board the machine*

   In this case, since the distances of the connections are below the 3m, as required by IEC/EN 60079-14 paragraph 10.6.2. Sub b), the cable glands have to be of the barrier type.

2. *Typical plant with motor power supply and local control columns*



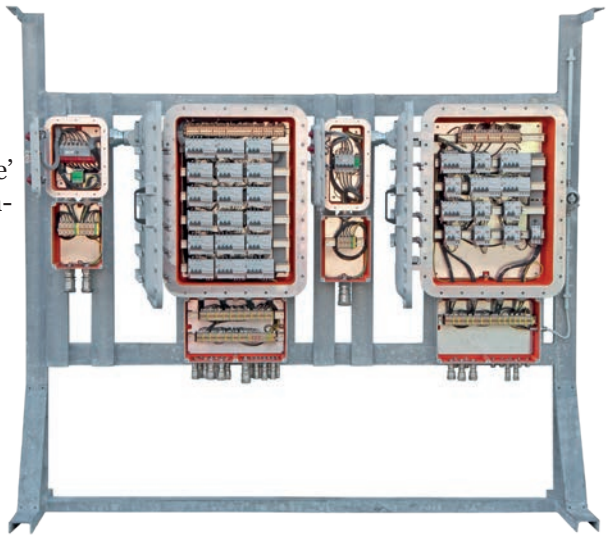


In these cases, the distances of the connections above 3m, as required by IEC/EN 60079-14 paragraph 10.6.2. Sub b), the cable glands must be of the Ex-certified type, simple or double sealing (if the cable is armoured or not armoured), respecting all the conditions of sub b), that is:

- cable glands conforming to IEC/EN 60079-1 and certified as equipment.
- cables with thermoplastic, thermosetting or elastomeric sheath, of compact circular shape, with extruded padding or sleeves and non-hygroscopic material.
- the length of the connected cable is equal to or greater than 3m, making sure that the test are in accordance with the requirements of Annex I (Limited Breathing Ventilation Test) of IEC/EN 60079-14

3. *Distribution 'Ex de' panel boards*

   In these cases, as the way of protection is of "Indirect" entry through 'Ex e' box and sealed passage between 'Ex e' and 'Ex d' junction box, the concept expressed in the standard IEC/EN 60079-14, para 10.6.2 sub. C), is respected: the cable glands can be of the Ex-certified type and with simple or double sealing (if the cable is armoured or not armoured).



4.
Electrical fittings, explosion proof and weather proof junction and pulling boxes

Considering the difficulty for designers to forecast the development of a plant since the first phases of its project and until the conclusion of the engineering, there are devices specifically thought to simplify the designer's job.
Elfit offers a wide range of electrical fittings which enables the realization of a complete electrical plant: three pieces unions, adaptors, closing plugs available in different threads and executions, 90° elbows, open elbows, couplings, sealing and pulling fittings, rigid and flexible conduits.

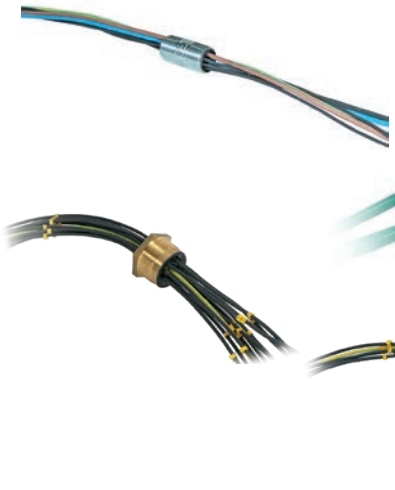








Moreover, Elfit manufactures explosion proof and weather proof junction boxes. The ex-proof junction boxes are available in different models, size and threads and can be used for the pulling or also for the junction of conductors. Weather proof junction boxes in aluminium, stainless steel and polyester can contain electrical and electronic instruments and be installed in any industrial environment.









5. Elfit foundry: Aluminium customized die-casting items



FIG.12 e 13
The working process of aluminium in Elfit foundry

Elfit foundry is able to realize aluminium customized die-casting items using primary and secondary alloys in various fields: electro-mechanical, hydraulic, transports, food, lighting and furniture. The service includes the feasibility study of product, die making with filling simulation package and the production of particular customized solutions.

ICON LEGEND
Certifications

	Logo that identifies equipment certified for explosive areas.
ATEX	ATmosphères and EXplosives. Conventional name given to the European Union Directive 2014/34/EU for the regulation of equipment intended for use in potentially explosive atmospheres.
IEC	International Electrotechnical Commission. International standards-setting organization for electricity, electronics and related technologies.
CE	CE mark. It certifies that the product has been evaluated by the manufacturer and is believed to comply with EU safety, health and environmental protection requirements.
Segurança DNV INMETRO	INMETRO certification for Brazil.
EAC	EurAsien Community certification for Eurasia.
	Certification for Ukraine.
	Certification for the United Arab Emirates (ECAS-Ex).
	Certification for China.
CCOE	Certification for India.
UK CA	Certification for Great Britain.

ELFiT®

ELectrical FITtings

Electrical connectors





FastEx electrical connectors allow to connect an equipment to the electric circuit or to others equipment safely and quickly. Available in two versions, 3 and 5 poles, their strength and extreme ease of use allow to activate the circuits quickly, fail-proof and to protect environments from risk of explosions and accidental disconnections. Their speed of implementation favours at the same time significant savings on overall installation and maintenance costs of systems. Ideal for use in indoor or outdoor environments, in chemical and petrochemical plants, of refining and other industrial processes where exists a potentially explosive atmosphere due to the presence of flammable gas, vapour or dust.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex eb IIC T.. Gb - Ex tb IIIC T..°C Db CE Ex II 3 GD Ex ec IIC T.. Gc - Ex tc IIIC T..°C Dc	
Certification:	ATEX CML 22 ATEX 3673 X ATEX CML 23 ATEX 3175 X	
	IECEx IECEx CML 22.0107X	Per tutti i dati di certificazione IEC Ex, UKEX scaricare il certificato dal sito www.elfit.com
	UKEX AVAILABLE	
Standards:	CENELEC EN 60079-0: 2018, EN 60079-7: 2015+A1:2018, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-7: 2017, IEC60079-31: 2013 Direttiva RoHS 2011/65/UE	
Ambient temperature:	-60°C +46°C (T6) -60°C +60°C (T5)	
Protection rating:	IP66	

I certificati sono consultabili sul sito www.elfit.com

MECHANICAL FEATURES

Body: 1. Aluminum alloy with low copper content with anodizing surface treatment.
2. nickel-plated brass.
3. AISI 316L stainless steel.

Contact holder: Polyamide (contact extractor supplied).

Contacts: Brass.

Gasket: Silicone resistant to acids and hydrocarbons.

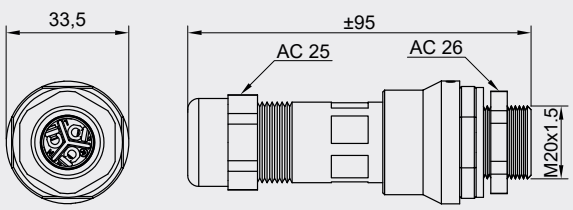
ELECTRICAL FEATURES

Cross section (mmq)	Max. rated current (A)	Max. voltage (Vac/dc)
0,75	10	277
1	12	277
1.5	15	277

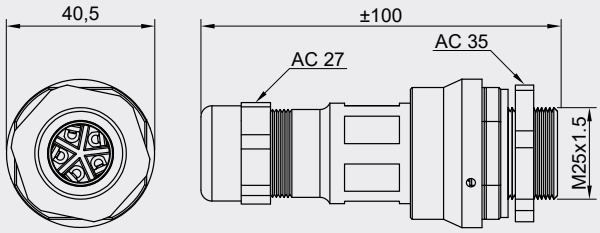
Rated frequency: 0-50/60 Hz

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www.elfit.com

3-Pole connector

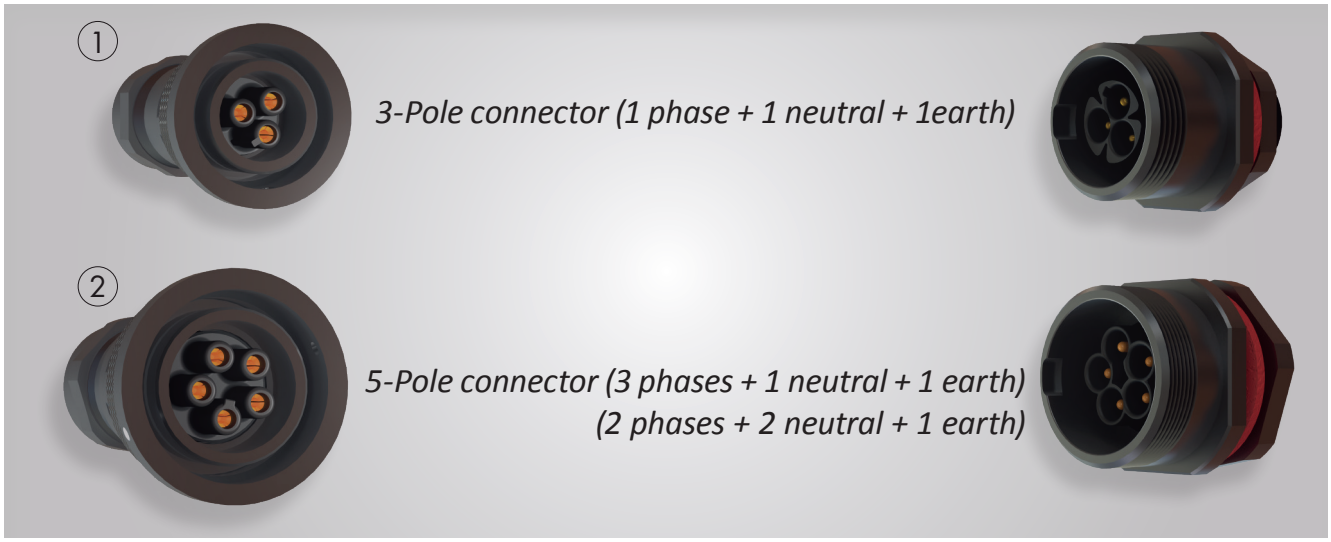


5-Pole connector



CONNECTOR SELECTION TABLE

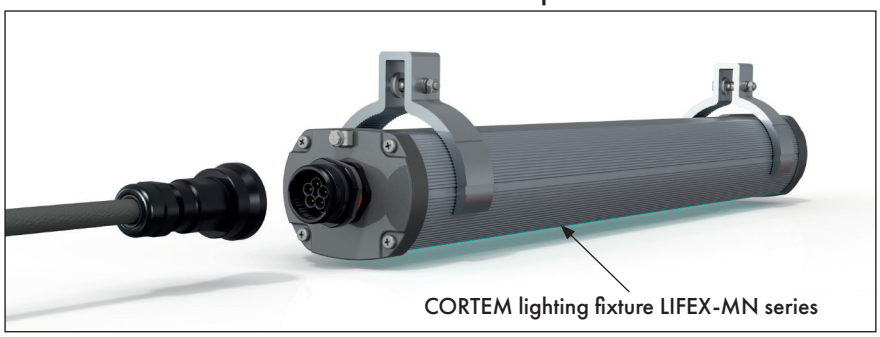
Code Aluminium	Code Nickel plated brass	Code Stainless steel	Thread	Zone	Range min-max Outer sheath of the cable	Pole	Weight Kg (alluminium)
FASTEX-ME3A	FASTEX-ME3B	FASTEX-ME3SS	M20x1.5	1,2,21,22	3.5 - 8.6	3	0,087
FASTEX-ME5A	FASTEX-ME5B	FASTEX-ME5SS	M25x1.5	1,2,21,22	6.3 - 11.6	5	0,125
FASTEX-MN3A	FASTEX-MN3B	FASTEX-MN3SS	M20x1.5	2,21,22	3.5 - 8.6	3	0,087
FASTEX-MN5A	FASTEX-MN5B	FASTEX-MN5SS	M25x1.5	2,21,22	6.3 - 11.6	5	0,125



Sample order code

FASTEX-M	E	3	B
MODEL	ZONE 1,2,21,22	POLE NUMBER	MATERIAL

Installation example





CORTEM GROUP®

ED.2024
vendite@elfit.com info@elfit.com
www.elfit.com

Cable gland series NAV for non-armoured cables from ¼" to 4"

NAV series cable glands are suitable for use in hazardous areas with danger of explosion to enable direct insertion of non-armoured cables into explosion-proof junction boxes, lighting fixtures, plugs and sockets, etc. Thanks to their structure, they are particularly suitable both in harsh application, such as marine one, and places subjected to stress and mechanical shock as it often happens in all those places of the "heavy" industry where safety is a top priority. They are provided with one sealing ring which tightens the incoming cable ensuring the anti-loosening and the 'Ex d' way of protection and the IP 66/68. The result is a cable gland which provides maximum performance in terms of reliability and safety over time, is compatible with a wide range of the main, commercially available cables, and complies with the most recent applicable regulations.



NAV.. assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc - IP66/68	
Certification:	ATEX (category 2): IMQ 17 ATEX 016X	
	ATEX (category 3): IMQ 17 ATEX 017X	
	IEC Ex IECEx IMQ 17.0010X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC60079-31: 2013 RoHS Directive 2011/65/UE	
Operating temperature:	-60 °C +130 °C	
Protection rating:	IP66/68 *(30 meters - 12 hours)*	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel	Gommini per cavo piatto / scaldante
	M12x1,5	DL02IB	DL02IG	DL02IS	
	M16x1,5	DL01IB	DL01IG	DL01IS	
	M20x1,5	DL1IB	DL1IG	DL1IS	
	M25x1,5	DL2IB	DL2IG	DL2IS	
	M32x1,5	DL3IB	DL3IG	DL3IS	
	M40x1,5	DL4IB	DL4IG	DL4IS	
	M50x1,5	DL5IB	DL5IG	DL5IS	
	M63x1,5	DL6IB	DL6IG	DL6IS	
	M75x1,5	DL7IB	DL7IG	DL7IS	
	M90x1,5	DL8IB	DL8IG	DL8IS	Code and dimensions are on page E.22 *(Link)*
	M100x1,5	DL10IB	DL10IG	DL10IS	
	M115x1,5	DL115IB	DL115IG	DL115IS	

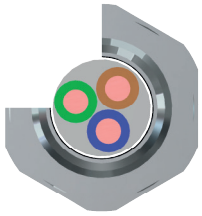
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M12x1,5	A0231IB	A0231IS		RDI02IS/A4	
	M16x1,5	A0131IB	A0131IS		RDI01IS/A4	
	M20x1,5	A131IB	A131IS		RDI1IS/A4	
	M25x1,5	A231IB	A231IS		RDI2IS/A4	
	M32x1,5	A331IB	A331IS		RDI3IS/A4	
	M40x1,5	A431IB	A431IS		RDI4IS/A4	
	M50x1,5	A531IB	A531IS		RDI5IS/A4	
	M63x1,5	A631IB	A631IS		RDI6IS/A4	
	M75x1,5	A731IB	A731IS			
	M90x1,5	A831IB	A831IS			
	M100x1,5	A1031IB	A1031IS			
	M115x1,5	A1031B	A1031S			

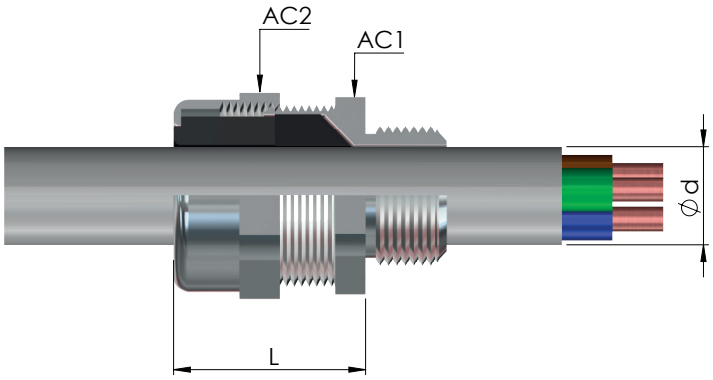
Black TPV protector	Cableglands		Code
	NAV01NB	NAV16IB	PGA1F
	NAV1SNB	NAV20SIB	PGA1N
	NAV1NB	NAV20IB	PGA1
	NAV2NB	NAV25IB	PGA2N
	NAV3NB	NAV32IB	PGA4
	NAV4NB	NAV40IB	PGA4
	NAV5SNB	NAV50SIB	PGA5
	NAV5NB	NAV50IB	PGA5N
	NAV6SNB	NAV63SIB	PGA6
	NAV6NB	NAV63IB	PGA6
	NAV7SNB	NAV75SIB	PGA7
	NAV7NB	NAV75IB	GTR7 Heat shrinkable
	NAV8NB	NAV90IB	
	NAV9NB	NAV100IB	
	NAV10NB	NAV115IB	

* For different threads, contact the sales department.

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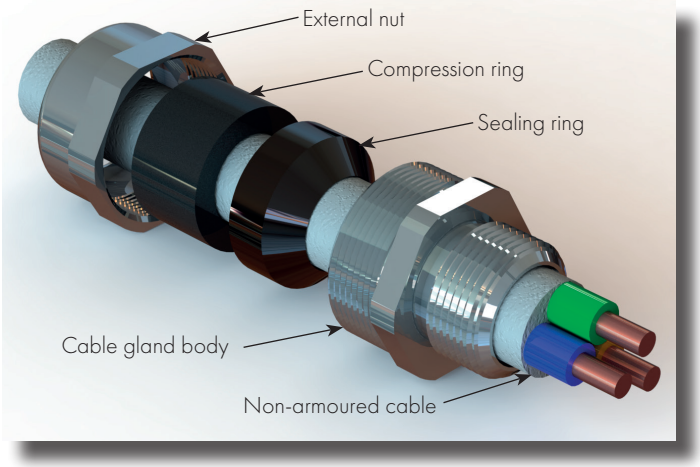




CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	L	Range Ød min-max Outer sheath of the cable	Weight Kg
NAV02NB	1/4" NPT	**NAV12IB**	M12x1,5	18	18	34	3.0 - 6.0	0,060
NAV01NB	3/8" NPT	**NAV16IB**	M16x1,5	24	24	34	3.5 - 8.6	0,086
NAV1SNB	1/2" NPT	**NAV20SIB**	M20x1,5	24	26	34	6.3 - 11.6	0,093
NAV1NB	1/2" NPT	**NAV20IB**	M20x1,5	30	32	37	6.5 - 14	0,126
NAV2NB	3/4" NPT	**NAV25IB**	M25x1,5	36	38	37	11 - 20	0,153
NAV3NB	1" NPT	**NAV32IB**	M32x1,5	45	47	40	17 - 27	0,232
NAV4NB	1 ¼" NPT	**NAV40IB**	M40x1,5	50	52	40	22 - 32	0,295
NAV5SNB	1 ½" NPT	**NAV50SIB**	M50x1,5	55	57	43	29.5 - 38	0,374
NAV5NB	2" NPT	**NAV50IB**	M50x1,5	62/60*	62	43	35.5 - 44	0,329
NAV6SNB	2" NPT	**NAV63SIB**	M63x1,5	68	77	51	40 - 50	0,753
NAV6NB	2 ½" NPT	**NAV63IB**	M63x1,5	75/73*	77	52	47 - 56	0,732
NAV7SNB	2 ½" NPT	**NAV75SIB**	M75x1,5	80	82	55	53 - 62	0,714
NAV7NB	3" NPT	**NAV75IB**	M75x1,5	90/85*	90	56	59 - 68	0,627
NAV8NB	3" NPT	**NAV90IB**	M90x1,5	100	110	59	66 - 79	1,384
NAV9NB	3 ½" NPT	**NAV100IB**	M100x1,5	115	120	62	76 - 91	1,316
NAV10NB	4" NPT	**NAV115IB**	M115x1,5	120	130	62	86 - 98	1,937

** Dimensions with threaded: NPT / ISO*



Sample order code

NAV	6	N	B
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NAV1B)*
- *Also available in stainless steel AISI 316 (sample code NAV1**S**)*
- *Other materials on request*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAV1**IA**)*

Cable glands series NAVF for non-armoured cable with female entry

NAVF series cable glands, with a female threaded outlet fitting, are suitable for use in areas with the risk of explosion, allowing the direct insertion of non-armoured cables in explosion proof enclosures, light fixtures, outlets, plugs, etc. Their structure makes them suitable for environments which are particularly difficult, such as marine environments, or where there are subjected to the mechanical stresses and impacts which often occur in heavy industry, where safety is the utmost priority. They are supplied with a sealing ring which is stretched over the cable at the inlet ensuring the anti-loosening, the 'Ex d' execution and an IP66/68 protection rating. The result is a cable gland which provides maximum performance, long-term reliability and safety, is compatible with a wide range of the main, commercially available cables, and complies with the most recent applicable regulations.



NAV.. assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc - IP66/68	
Certification:	ATEX (category 2): IMQ 17 ATEX 016X	
	ATEX (category 3): IMQ 17 ATEX 017X	
	IEC Ex IECEx IMQ 17.0010X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC60079-31: 2013 RoHS Directive 2011/65/UE	
Operating temperature:	-60 °C +130 °C	
Protection rating:	IP66/68 *(30 meters - 12 hours)*	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel	Sealing ring for flat/ healing cables
	M12x1,5	**DL02IB**	**DL02IG**	**DL02IS**	
	M16x1,5	**DL01IB**	**DL01IG**	**DL01IS**	
	M20x1,5	**DL1IB**	**DL1IG**	**DL1IS**	
	M25x1,5	**DL2IB**	**DL2IG**	**DL2IS**	
	M32x1,5	**DL3IB**	**DL3IG**	**DL3IS**	
	M40x1,5	**DL4IB**	**DL4IG**	**DL4IS**	
	M50x1,5	**DL5IB**	**DL5IG**	**DL5IS**	
	M63x1,5	**DL6IB**	**DL6IG**	**DL6IS**	
	M75x1,5	**DL7IB**	**DL7IG**	**DL7IS**	
	M90x1,5	**DL8IB**	**DL8IG**	**DL8IS**	Code and dimensions are on page E.22 *(Link)*
	M100x1,5	**DL10IB**	**DL10IG**	**DL10IS**	
	M115x1,5	**DL115IB**	**DL115IG**	**DL115IS**	

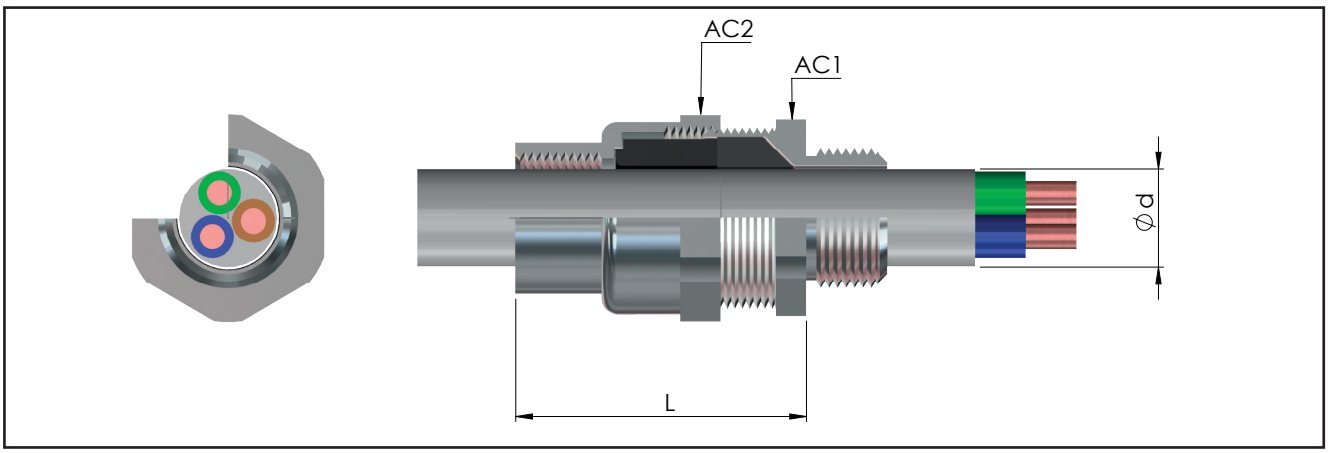
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M12x1,5	**A0231IB**	**A0231IS**			
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

* For different threads, contact the sales department.

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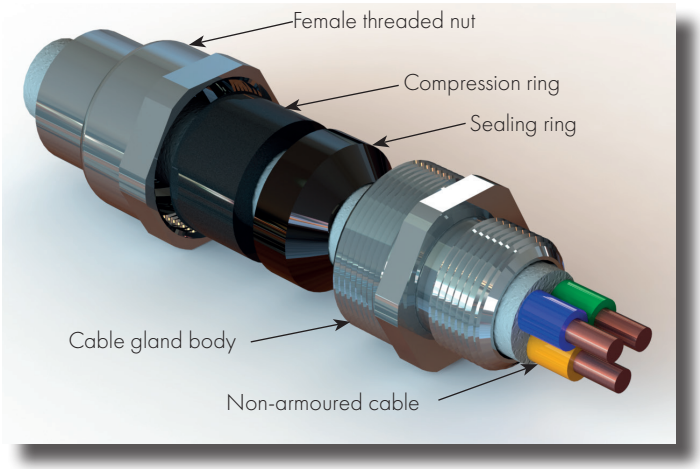
Cable glands series NAVF for non-armoured cable with female entry



CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	L	Range Ød min-max Outer sheath of the cable	Weight Kg
NAVF02NB	1/4" NPT	**NAVF12IB**	M12x1,5	18	18	54	3.0 - 6.0	0,070
NAVF01NB	3/8" NPT	**NAVF16IB**	M16x1,5	24	24	53	3.5 - 8.6	0,107
NAVF1SNB	1/2" NPT	**NAVF20SIB**	M20x1,5	24	26	53	6.3 - 11.6	0,120
NAVF1NB	1/2" NPT	**NAVF20IB**	M20x1,5	30	32	56	6.5 - 14	0,155
NAVF2NB	3/4" NPT	**NAVF25IB**	M25x1,5	36	38	56	11 - 20	0,212
NAVF3NB	1" NPT	**NAVF32IB**	M32x1,5	45	47	59	17 - 27	0,276
NAVF4NB	1 ¼" NPT	**NAVF40IB**	M40x1,5	50	52	59	22 - 32	0,365
NAVF5SNB	1 ½" NPT	**NAVF50SIB**	M50x1,5	55	57	63	29.5 - 38	0,482
NAVF5NB	2" NPT	**NAVF50IB**	M50x1,5	62/60*	62	63	35.5 - 44	0,428
NAVF6SNB	2" NPT	**NAVF63SIB**	M63x1,5	68	77	74	40 - 50	0,981
NAVF6NB	2 ½" NPT	**NAVF63IB**	M63x1,5	75/73*	77	75	47 - 56	0,741
NAVF7SNB	2 ½" NPT	**NAVF75SIB**	M75x1,5	80	82	77	53 - 62	0,835
NAVF7NB	3" NPT	**NAVF75IB**	M75x1,5	90/85*	90	78	59 - 68	0,934
NAVF8NB	3" NPT	**NAVF90IB**	M90x1,5	100	110	88	66 - 79	1,883
NAVF9NB	3 ½" NPT	**NAVF100IB**	M100x1,5	115	120	92	76 - 91	1,993
NAVF10NB	4" NPT	**NAVF115IB**	M115x1,5	120	130	92	86 - 98	2,332

** Dimensions with threaded: NPT / ISO*



Sample order code

NAVF	6	N	B
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NAVF1B)*
- *Also available in stainless steel AISI 316 (sample code NAVF1**S**)*
- *Other materials on request*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAVF1**IA**)*

Cable glands series NAVN for non-armoured cable with male entry

NAVN series cable glands, with a male outlet fitting, are suitable for use in areas with the risk of explosion, allowing the direct insertion of non-armoured cables in explosion proof enclosures, light fixtures, outlets, plugs, etc. Their structure makes them suitable for environments which are particularly difficult, such as marine environments, or where there are subjected to the mechanical stresses and impacts which often occur in heavy industry, where safety is the utmost priority. They are supplied with a sealing ring which is stretched over the cable at the inlet, ensuring the anti-loosening, 'Ex d' execution and an IP66/68 protection rating. The result is a cable gland which provides maximum performance, long-term reliability and safety, is compatible with a wide range of the main, commercially available cables, and complies with the most recent applicable regulations.



NAV assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc - IP66/68	
Certification:	ATEX (category 2): IMQ 17 ATEX 016X	
	ATEX (category 3): IMQ 17 ATEX 017X	
	IEC Ex IECEx IMQ 17.0010X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC60079-31: 2013 RoHS Directive 2011/65/UE	
Operating temperature:	-60 °C +130 °C	
Protection rating:	IP66/68 *(30 meters - 12 hours)*	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel	Sealing ring for flat/ healing cables
	M12x1,5	**DL02IB**	**DL02IG**	**DL02IS**	
	M16x1,5	**DL01IB**	**DL01IG**	**DL01IS**	
	M20x1,5	**DL1IB**	**DL1IG**	**DL1IS**	
	M25x1,5	**DL2IB**	**DL2IG**	**DL2IS**	
	M32x1,5	**DL3IB**	**DL3IG**	**DL3IS**	
	M40x1,5	**DL4IB**	**DL4IG**	**DL4IS**	
	M50x1,5	**DL5IB**	**DL5IG**	**DL5IS**	
	M63x1,5	**DL6IB**	**DL6IG**	**DL6IS**	
	M75x1,5	**DL7IB**	**DL7IG**	**DL7IS**	
	M90x1,5	**DL8IB**	**DL8IG**	**DL8IS**	Code and dimensions are on page E.22 *(Link)*
	M100x1,5	**DL10IB**	**DL10IG**	**DL10IS**	
	M115x1,5	**DL115IB**	**DL115IG**	**DL115IS**	

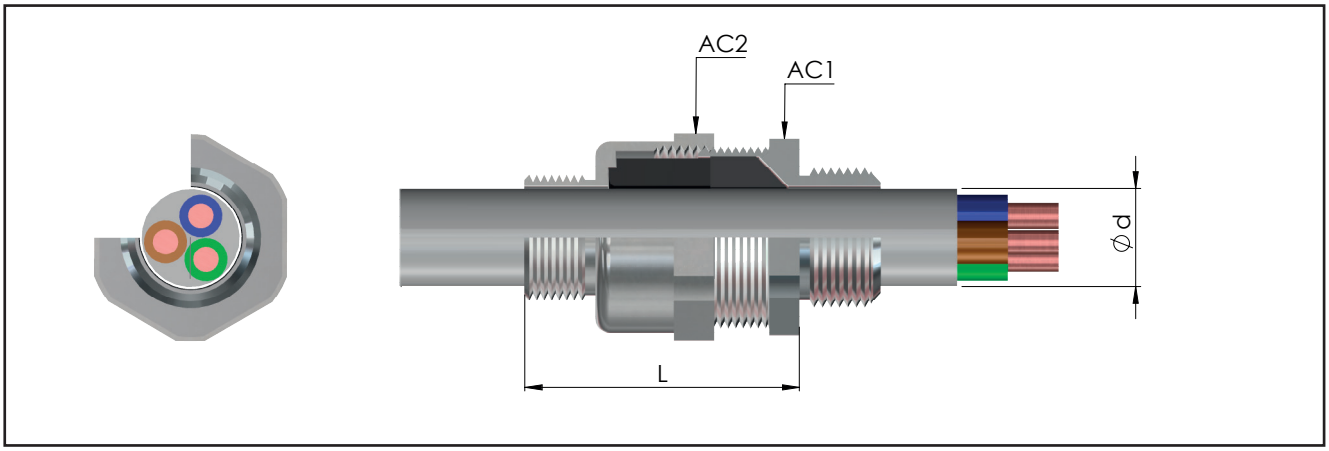
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M12x1,5	**A0231IB**	**A0231IS**			
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

* For different threads, contact the sales department.

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Cable glands series NAVN for non-armoured cable with male entry



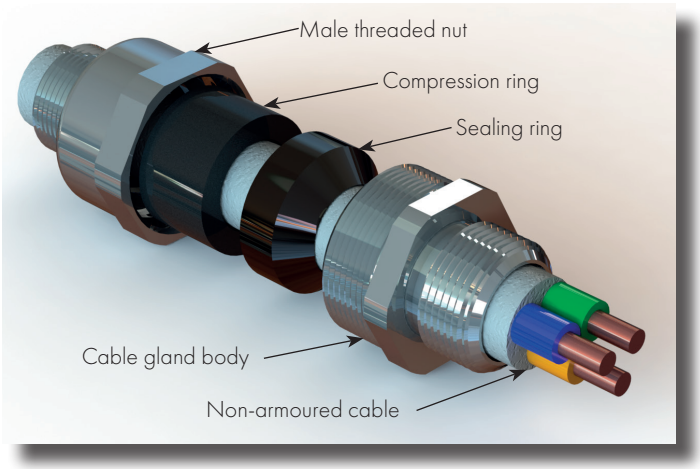
CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	L	Range Ød min-max Outer sheath of the cable	Weight Kg
NAVN02NB	1/4" NPT	**NAVN12IB**	M12x1,5	18	18	52	3.0 - 6.0	0,110
NAVN01NB	3/8" NPT	**NAVN16IB**	M16x1,5	24	24	53	3.5 - 8.6	0,150
NAVN1SNB	1/2" NPT	**NAVN20SIB**	M20x1,5	24	26	53	6.3 - 11.6	0,172
NAVN1NB	1/2" NPT	**NAVN20IB**	M20x1,5	30	32	56	6.5 - 14	0,233
NAVN2NB	3/4" NPT	**NAVN25IB**	M25x1,5	36	38	56	11 - 20	0,303
NAVN3NB	1" NPT	**NAVN32IB**	M32x1,5	45	47	59	17 - 27	0,436
NAVN4NB	1 ¼" NPT	**NAVN40IB**	M40x1,5	50	52	59	22 - 32	0,566
NAVN5SNB	1 ½" NPT	**NAVN50SIB**	M50x1,5	55	57	63	29.5 - 38	0,748
NAVN5NB	2" NPT	**NAVN50IB**	M50x1,5	62/60*	62	63	35.5 - 44	0,673
NAVN6SNB	2" NPT	**NAVN63SIB**	M63x1,5	68	77	74	40 - 50	1,361
NAVN6NB	2 ½" NPT	**NAVN63IB**	M63x1,5	75/73*	77	75	47 - 56	0,748
NAVN7SNB	2 ½" NPT	**NAVN75SIB**	M75x1,5	80	82	77	53 - 62	1,479
NAVN7NB	3" NPT	**NAVN75IB**	M75x1,5	90/85*	90	78	59 - 68	1,235
NAVN8NB	3" NPT	**NAVN90IB**	M90x1,5	100	110	88	66 - 79	2,466
NAVN9NB	3 ½" NPT	**NAVN100IB**	M100x1,5	115	120	92	76 - 91	2,687
NAVN10NB	4" NPT	**NAVN115IB**	M115x1,5	120	130	92	86 - 98	3,702

** Dimensions with threaded: NPT / ISO*

Sample order code

NAVN	6	N	B
MODEL	SIZE	THREAD	MATERIAL



TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NAVN1B)*
- *Also available in stainless steel AISI 316 (sample code NAVN1**S**)*
- *Other materials on request*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAVN1**IA**)*

Cable glands series NAVFS for non-armoured cable with "swivel" female

NAVFS series cable glands, with a female threaded outlet fitting, are suitable for use in areas with the risk of explosion, allowing the direct insertion of non-armoured cables in explosion proof enclosures, light fixtures, outlets, plugs, etc.
The built-in swivel joint allows an easy and quick closure of the thread between the pipe or the hose and the cable gland and, therefore, a simple installation of the assembly.
They are supplied with a sealing ring which is stretched over the cable at the inlet, ensuring 'Ex d' execution and an IP66/68 protection rating. The result is a cable gland which provides maximum performance, long-term reliability and safety, is compatible with a wide range of the main, commercially available cables, and complies with the most recent applicable regulations.

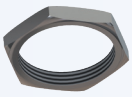


NAV assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc - IP66/68	
Certification:	ATEX (category 2): IMQ 17 ATEX 016X	
	ATEX (category 3): IMQ 17 ATEX 017X	
	IEC Ex IECEx IMQ 17.0010X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC60079-31: 2013 RoHS Directive 2011/65/UE	
Operating temperature:	-60 °C +130 °C	
Protection rating:	IP66/68 *(30 meters - 12 hours)*	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel	Sealing ring for flat/ healing cables
	M12x1,5	**DL02IB**	**DL02IG**	**DL02IS**	
	M16x1,5	**DL01IB**	**DL01IG**	**DL01IS**	
	M20x1,5	**DL1IB**	**DL1IG**	**DL1IS**	
	M25x1,5	**DL2IB**	**DL2IG**	**DL2IS**	
	M32x1,5	**DL3IB**	**DL3IG**	**DL3IS**	
	M40x1,5	**DL4IB**	**DL4IG**	**DL4IS**	
	M50x1,5	**DL5IB**	**DL5IG**	**DL5IS**	
	M63x1,5	**DL6IB**	**DL6IG**	**DL6IS**	
	M75x1,5	**DL7IB**	**DL7IG**	**DL7IS**	
	M90x1,5	**DL8IB**	**DL8IG**	**DL8IS**	Code and dimensions are on page E.22 *(Link)*
	M100x1,5	**DL10IB**	**DL10IG**	**DL10IS**	
	M115x1,5	**DL115IB**	**DL115IG**	**DL115IS**	

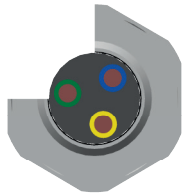
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M12x1,5	**A0231IB**	**A0231IS**			
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

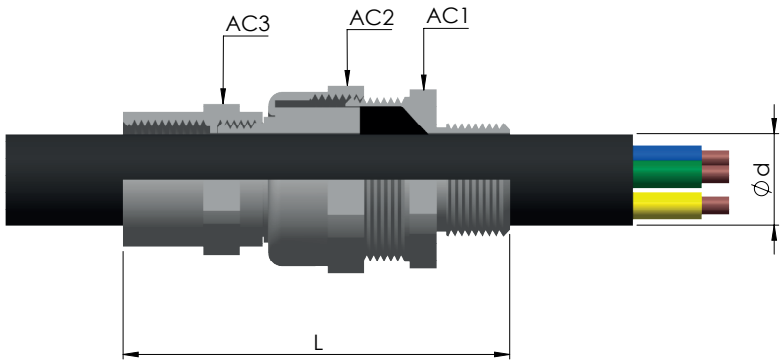
* For different threads, contact the sales department.

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Cable glands series NAVFS for non-armoured cable with "swivel" female

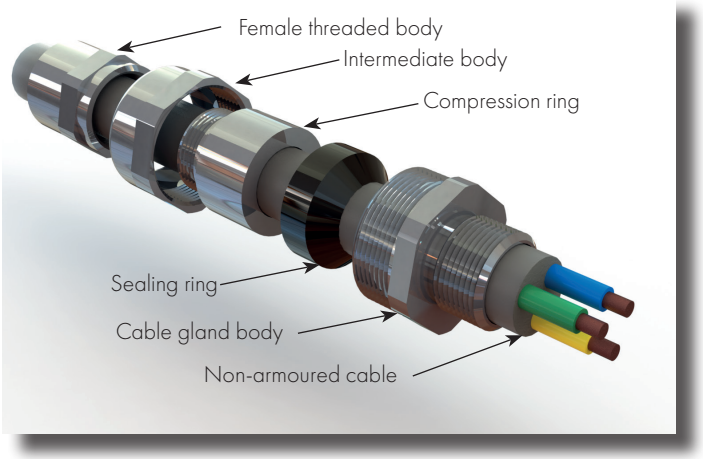




CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	AC3	L	Range Ød min-max Outer sheath of the cable	Weight Kg
NAVFS02NB	1/4" NPT	**NAVFS12IB**	M12x1,5	18	18	20	63.5	3.0 - 6.0	0,120
NAVFS01NB	3/8" NPT	**NAVFS16IB**	M16x1,5	24	24	24	65.5	3.5 - 8.6	0,171
NAVFS1SNB	1/2" NPT	**NAVFS20SIB**	M20x1,5	24	26	24	65.5	6.3 - 11.6	0,186
NAVFS1NB	1/2" NPT	**NAVFS20IB**	M20x1,5	30	32	24	68.5	6.5 - 14	0,239
NAVFS2NB	3/4" NPT	**NAVFS25IB**	M25x1,5	36	38	30	68.5	11 - 20	0,314
NAVFS3NB	1" NPT	**NAVFS32IB**	M32x1,5	45	47	38	71.5	17 - 27	0,450
NAVFS4NB	1 ¼" NPT	**NAVFS40IB**	M40x1,5	50	52	47	71.5	22 - 32	0,605
NAVFS5SNB	1 ½" NPT	**NAVFS50SIB**	M50x1,5	55	57	57	74.5	29.5 - 38	0,795
NAVFS5NB	2" NPT	**NAVFS50IB**	M50x1,5	60	62	57	76.5	35.5 - 44	0,723
NAVFS6SNB	2" NPT	**NAVFS63SIB**	M63x1,5	68	77	70	87.5	40 - 50	1,447
NAVFS6NB	2 ½" NPT	**NAVFS63IB**	M63x1,5	73	77	73	88	47 - 56	1,368
NAVFS7SNB	2 ½" NPT	**NAVFS75SIB**	M75x1,5	80	82	82	91	53 - 62	1,512
NAVFS7NB	3" NPT	**NAVFS75IB**	M75x1,5	85	90	82	92	59 - 68	1,327
NAVFS8NB	3" NPT	**NAVFS90IB**	M90x1,5	100	110	100	101	66 - 79	2,356
NAVFS9NB	3 ½" NPT	**NAVFS100IB**	M100x1,5	115	120	110	105.5	76 - 91	3,008
NAVFS10NB	4" NPT	**NAVFS115IB**	M115x1,5	120	130	130	105.5	86 - 98	3,704

** Dimensions with threaded: NPT / ISO*



Sample order code

NAVFS	6	N	B
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NAVFS1B)*
- *Also available in stainless steel AISI 316 (sample code NAVFS1**S**)*
- *Other materials on request*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAVFS1**IA**)*

Cable glands series NAVNS for non-armoured cable with "swivel" male

NAVNS series cable glands, with a male threaded outlet fitting, are suitable for use in areas with the risk of explosion, allowing the direct insertion of non-armoured cables in explosion proof enclosures, light fixtures, outlets, plugs, etc.
The built-in swivel joint allows an easy and quick closure of the thread between the pipe or the hose and the cable gland and, therefore, a simple installation of the assembly.
They are supplied with a sealing ring which is stretched over the cable at the inlet, ensuring 'Ex d' execution and an IP66/68 protection rating. The result is a cable gland which provides maximum performance, long-term reliability and safety, is compatible with a wide range of the main, commercially available cables, and complies with the most recent applicable regulations.

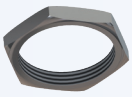


NAV assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc - IP66/68	
Certification:	ATEX (category 2): IMQ 17 ATEX 016X	
	ATEX (category 3): IMQ 17 ATEX 017X	
	IEC Ex IECEx IMQ 17.0010X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC60079-31: 2013 RoHS Directive 2011/65/UE	
Operating temperature:	-60 °C +130 °C	
Protection rating:	IP66/68 *(30 meters - 12 hours)*	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel	Sealing ring for flat/ healing cables
	M12x1,5	**DL02IB**	**DL02IG**	**DL02IS**	
	M16x1,5	**DL01IB**	**DL01IG**	**DL01IS**	
	M20x1,5	**DL1IB**	**DL1IG**	**DL1IS**	
	M25x1,5	**DL2IB**	**DL2IG**	**DL2IS**	
	M32x1,5	**DL3IB**	**DL3IG**	**DL3IS**	
	M40x1,5	**DL4IB**	**DL4IG**	**DL4IS**	
	M50x1,5	**DL5IB**	**DL5IG**	**DL5IS**	
	M63x1,5	**DL6IB**	**DL6IG**	**DL6IS**	
	M75x1,5	**DL7IB**	**DL7IG**	**DL7IS**	
	M90x1,5	**DL8IB**	**DL8IG**	**DL8IS**	Code and dimensions are on page E.22 *(Link)*
	M100x1,5	**DL10IB**	**DL10IG**	**DL10IS**	
	M115x1,5	**DL115IB**	**DL115IG**	**DL115IS**	

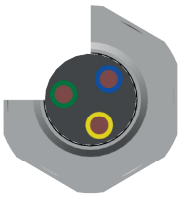
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M12x1,5	**A0231IB**	**A0231IS**			
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

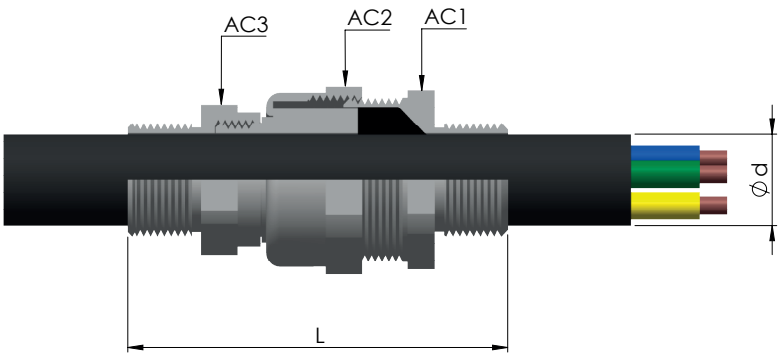
* For different threads, contact the sales department.

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Cable glands series NAVNS for non-armoured cable with "swivel" male

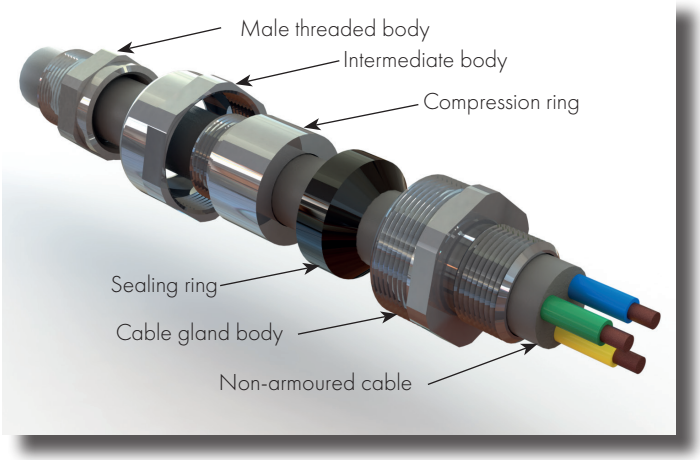




CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	AC3	L	Range Ød min-max Outer sheath of the cable	Weight Kg
NAVNS02NB	1/4" NPT	**NAVNS12IB**	M12x1,5	18	18	20	63.5	3.0 - 6.0	0,120
NAVNS01NB	3/8" NPT	**NAVNS16IB**	M16x1,5	24	24	20	64	3.5 - 8.6	0,172
NAVNS1SNB	1/2" NPT	**NAVNS20SIB**	M20x1,5	24	26	20	64	6.3 - 11.6	0,193
NAVNS1NB	1/2" NPT	**NAVNS20IB**	M20x1,5	30	32	24	67	6.5 - 14	0,250
NAVNS2NB	3/4" NPT	**NAVNS25IB**	M25x1,5	36	38	30	67	11 - 20	0,277
NAVNS3NB	1" NPT	**NAVNS32IB**	M32x1,5	45	47	38	70	17 - 27	0,471
NAVNS4NB	1 ¼" NPT	**NAVNS40IB**	M40x1,5	50	52	45	70	22 - 32	0,604
NAVNS5SNB	1 ½" NPT	**NAVNS50SIB**	M50x1,5	55	57	52	73	29.5 - 38	0,748
NAVNS5NB	2" NPT	**NAVNS50IB**	M50x1,5	60	62	52	73	35.5 - 44	0,725
NAVNS6SNB	2" NPT	**NAVNS63SIB**	M63x1,5	68	77	64	83	40 - 50	1,361
NAVNS6NB	2 ½" NPT	**NAVNS63IB**	M63x1,5	73	77	64	84	47 - 56	1,184
NAVNS7SNB	2 ½" NPT	**NAVNS75SIB**	M75x1,5	80	82	82	87	53 - 62	1,478
NAVNS7NB	3" NPT	**NAVNS75IB**	M75x1,5	85	90	80	88	59 - 68	1,235
NAVNS8NB	3" NPT	**NAVNS90IB**	M90x1,5	100	110	90	97	66 - 79	2,466
NAVNS9NB	3 ½" NPT	**NAVNS100IB**	M100x1,5	115	120	100	100	76 - 91	2,687
NAVNS10NB	4" NPT	**NAVNS115IB**	M115x1,5	120	130	115	100	86 - 98	3,702

** Dimensions with threaded: NPT / ISO*



Sample order code

NAVNS	6	N	B
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NAVNS1B)*
- *Also available in stainless steel AISI 316 (sample code NAVNS1**S**)*
- *Other materials on request*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAVNS1**IA**)*

Cable gland series NEV for armoured cables from ¼" to 4"

NEV series cable glands are suitable for use in areas with the risk of explosion, allowing the direct insertion of armoured cables in explosion proof enclosures. They are supplied with a sealing ring which is stretched over the cable at the inlet ensuring the anti-loosening, 'Ex d' execution, and a second compression ring which is stretched over the cable armour at the outlet to guarantee an IP 66/68 protection rating. The result is a cable gland which provides maximum performance in terms of reliability and safety over time, is compatible with a wide range of the main, commercially available cables, and complies with the most recent applicable regulations. Their structure makes them suitable for environments which are particularly difficult, such as marine environments, or where there are subjected to the mechanical stresses and impacts which often occur in heavy industry, where safety is the utmost priority.



See Video with assembly instructions for NEV.. (light armoured)

See Video with assembly instructions for NEV.. (heavy armoured)

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc - IP66/68	
Certification:	ATEX (category 2): IMQ 17 ATEX 016X	
	ATEX (category 3): IMQ 17 ATEX 017X	
	IEC Ex IECEx IMQ 17.0010X — For IEC Ex and others certifications data can be downloaded at www.elfit.com	
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC60079-31: 2013 RoHS Directive 2011/65/UE	
Operating temperature:	-60 °C +130 °C	
Protection rating:	IP66/68 *(30 meters - 12 hours)*	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel
	M12x1,5	**DL02IB**	**DL02IG**	**DL02IS**
	M16x1,5	**DL01IB**	**DL01IG**	**DL01IS**
	M20x1,5	**DL1IB**	**DL1IG**	**DL1IS**
	M25x1,5	**DL2IB**	**DL2IG**	**DL2IS**
	M32x1,5	**DL3IB**	**DL3IG**	**DL3IS**
	M40x1,5	**DL4IB**	**DL4IG**	**DL4IS**
	M50x1,5	**DL5IB**	**DL5IG**	**DL5IS**
	M63x1,5	**DL6IB**	**DL6IG**	**DL6IS**
	M75x1,5	**DL7IB**	**DL7IG**	**DL7IS**
	M90x1,5	**DL8IB**	**DL8IG**	**DL8IS**
	M100x1,5	**DL10IB**	**DL10IG**	**DL10IS**
	M115x1,5	**DL115IB**	**DL115IG**	**DL115IS**

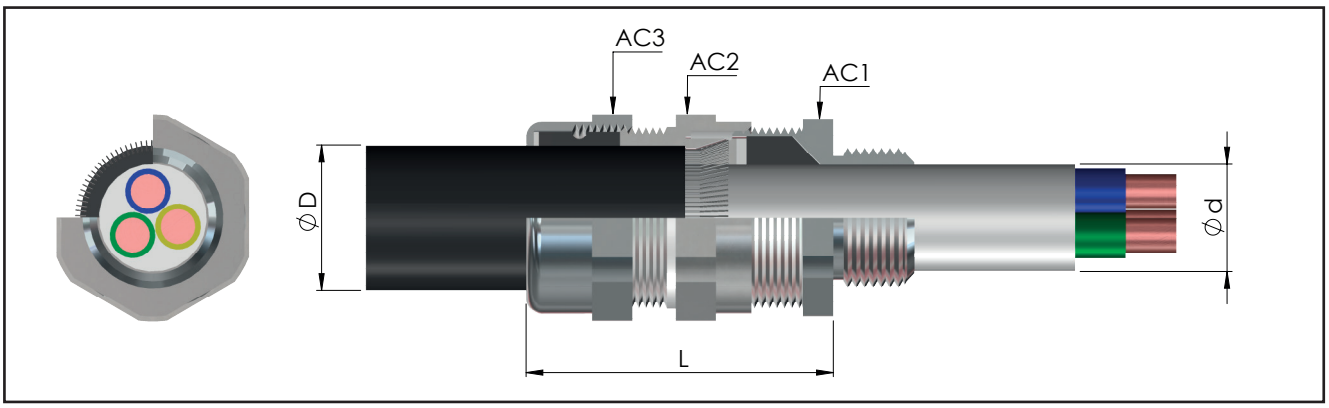
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M12x1,5	**A0231IB**	**A0231IS**		**RDI02IS/A4**	
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

Black TPV protector	Cableglands		Code
	NEV01NB	NEV16IB	**PGA1F**
	NEV1SNB	NEV20SIB	**PGA1N**
	NEV1NB	NEV20IB	**PGA1**
	NEV2NB	NEV25IB	**PGA2N**
	NEV3NB	NEV32IB	**PGA4**
	NEV4NB	NEV40IB	**PGA4**
	NEV5SNB	NEV50SIB	**PGA5**
	NEV5NB	NEV50IB	**PGA5N**
	NEV6SNB	NEV63SIB	**PGA6**
	NEV6NB	NEV63IB	**PGA7**
	NEV7SNB	NEV75SIB	**GTR7** Heat shrinkable
	NEV7NB	NEV75IB	
	NEV8NB	NEV90IB	
	NEV9NB	NEV100IB	
	NEV10NB	NEV115IB	

* For different threads, contact the sales department.

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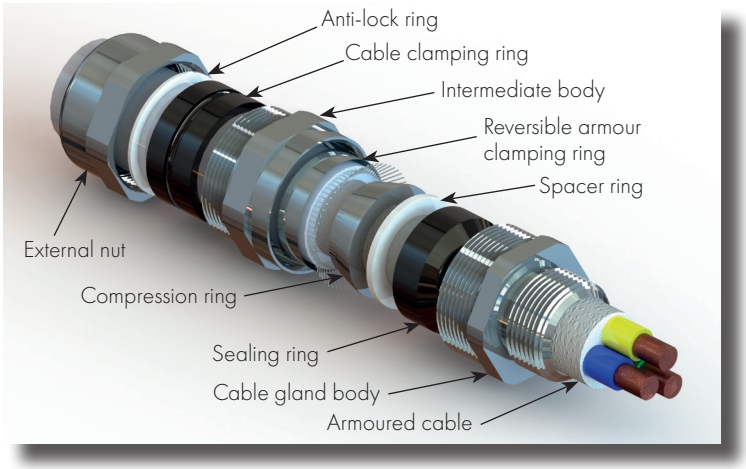
CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	AC3	L	Range Ød min-max Internal cable sheath	ØD min-max Outer sheath of the cable	Armour thickness	Weight Kg
NEV02NB	1/4" NPT	**NEV12IB**	M12x1,5	18	18	18	58	3.0 - 6.0	6 - 10.0	0.2 - 1.3	0,100
NEV01NB	3/8" NPT	**NEV16IB**	M16x1,5	24	24	24	59	3.5 - 8.6	6 - 13.2	0.2 - 1.3	0,145
NEV1SNB	1/2" NPT	**NEV20SIB**	M20x1,5	24	26	26	59	6.3 - 11.6	9.5 - 16	0.2 - 1.3	0,157
NEV1NB	1/2" NPT	**NEV20IB**	M20x1,5	30	32	32	61	6.5 - 14	12.5 - 21	0.2 - 1.4	0,215
NEV2NB	3/4" NPT	**NEV25IB**	M25x1,5	36	38	38	61	11 - 20	20 - 27.5	0.2 - 1.6	0,261
NEV3NB	1" NPT	**NEV32IB**	M32x1,5	45	47	47	72	17 - 27	23.5 - 34	0.2 - 2.0	0,433
NEV4NB	1 ¼" NPT	**NEV40IB**	M40x1,5	50	52	52	73	22 - 32	26 - 40	0.2 - 2.2	0,514
NEV5SNB	1 ½" NPT	**NEV50SIB**	M50x1,5	55	57	57	80	29.5 - 38	35 - 46.5	0.2 - 2.5	0,610
NEV5NB	2" NPT	**NEV50IB**	M50x1,5	62/60*	62	62	81	35.5 - 44	38 - 53	0.2 - 2.5	0,562
NEV6SNB	2" NPT	**NEV63SIB**	M63x1,5	68	75	77	91	40 - 50	45.5 - 59.5	0.2 - 2.5	1,151
NEV6NB	2 ½" NPT	**NEV63IB**	M63x1,5	75/73*	80	82	93	47 - 56	54.5 - 66	0.2 - 2.5	1,100
NEV7SNB	2 ½" NPT	**NEV75SIB**	M75x1,5	80	85	90	97	53 - 62	57 - 72	0.2 - 2.8	1,308
NEV7NB	3" NPT	**NEV75IB**	M75x1,5	90/85*	95	100	99	59 - 68	66.5 - 78.5	0.2 - 2.8	1,538
NEV8NB	3" NPT	**NEV90IB**	M90x1,5	100	105	110	104	66 - 79	76.5 - 90	0.2 - 2.8	2,000
NEV9NB	3 ½" NPT	**NEV100IB**	M100x1,5	115	120	120	111	76 - 91	86 - 101	0.2 - 3.3	2,381
NEV10NB	4" NPT	**NEV115IB**	M115x1,5	120	125	130	112	86 - 98	100 - 110	0.2 - 3.5	2,783

** Dimensions with threaded: NPT / ISO*

Sample order code

NEV	6	N	B
MODEL	SIZE	THREAD	MATERIAL



TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NEV1B)*
- *Also available in stainless steel AISI 316 (sample code NEV1**S**)*
- *Other materials on request*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NEV1S**IA**)*
- *Internal ring for armoured cables with larger cross-section*

Cable gland series NEVL for lead sheathed armoured cables

NEVL series cable glands are suitable for use in areas with the risk of explosion, allowing the direct insertion of armoured cables in explosion proof enclosures and the installation of lead sheathed cables. They are supplied with a sealing ring which is stretched over the cable at the inlet ensuring the anti-loosening, 'Ex d' execution, and a second compression ring which is stretched over the cable armour at the outlet to guarantee an IP 66/68 protection rating, and a metal ring which affixes to the outer surface of the lead sheath as it is wound, fastening it in place. Their structure makes them suitable for environments which are particularly difficult, such as marine environments, or where there are subjected to the mechanical stresses and impacts which often occur in heavy industry, where safety is the utmost priority.

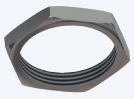


Safety, use and maintenance instructions

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc - IP66/68	
Certification:	ATEX (category 2): IMQ 17 ATEX 016X	
	ATEX (category 3): IMQ 17 ATEX 017X	
	IEC Ex IECEx IMQ 17.0010X — For IEC Ex and others certifications data can be downloaded at www.elfit.com	
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2019, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/EU IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC60079-31: 2013 RoHS Directive 2011/65/UE	
Operating temperature:	-60 °C +130 °C	
Protection rating:	IP66/68 *(30 meters - 12 hours)*	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel
	M12x1,5	**DL02IB**	**DL02IG**	**DL02IS**
	M16x1,5	**DL01IB**	**DL01IG**	**DL01IS**
	M20x1,5	**DL1IB**	**DL1IG**	**DL1IS**
	M25x1,5	**DL2IB**	**DL2IG**	**DL2IS**
	M32x1,5	**DL3IB**	**DL3IG**	**DL3IS**
	M40x1,5	**DL4IB**	**DL4IG**	**DL4IS**
	M50x1,5	**DL5IB**	**DL5IG**	**DL5IS**
	M63x1,5	**DL6IB**	**DL6IG**	**DL6IS**
	M75x1,5	**DL7IB**	**DL7IG**	**DL7IS**
	M90x1,5	**DL8IB**	**DL8IG**	**DL8IS**
	M100x1,5	**DL10IB**	**DL10IG**	**DL10IS**
	M115x1,5	**DL115IB**	**DL115IG**	**DL115IS**

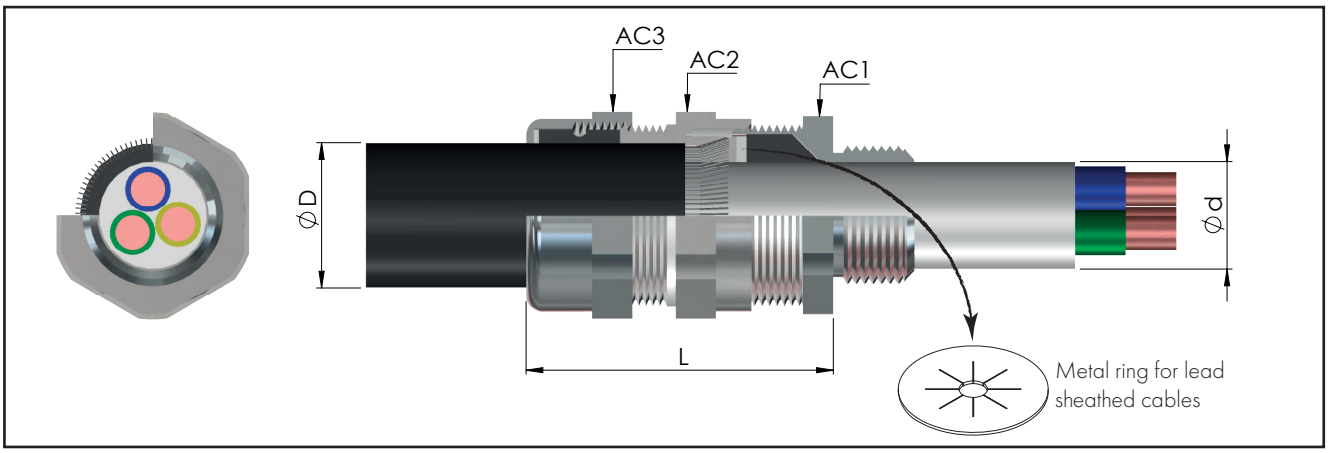
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M12x1,5	**A0231IB**	**A0231IS**		**RDI02IS/A4**	
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

Black TPV protector	CG	Code
	NEVL01NB	**PGA1F**
	NEVL1SNB	**PGA1N**
	NEVL1NB	**PGA1**
	NEVL2NB	**PGA2N**
	NEVL3NB	**PGA4**
	NEVL4NB	**PGA5**
	NEVL5SNB	**PGA5**
	NEVL5NB	**PGA5N**
	NEVL6SNB	**PGA6**
	NEVL6NB	**PGA7**
	NEVL7SNB	**GTR** Heat shrinkable
	NEVL7NB	
	NEVL8NB	
	NEVL9NB	
	NEVL10NB	

* For different threads, contact the sales department.

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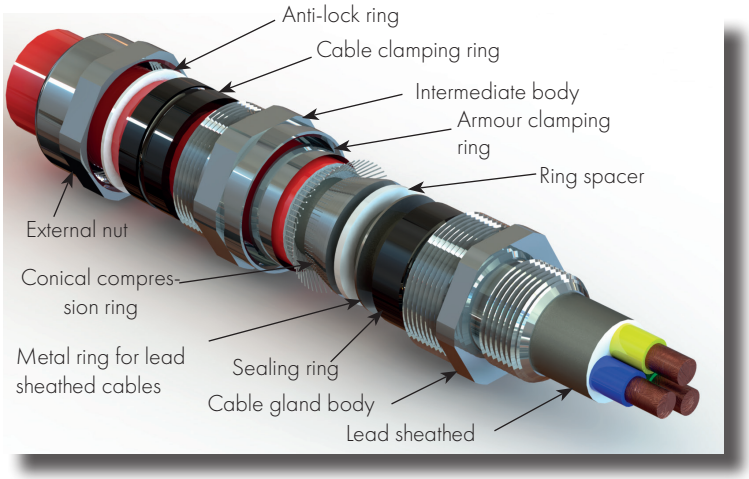
vendite@elfit.com info@elfit.com
www.elfit.com



CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	AC3	L	Range Ød min-max Internal cable sheath	ØD min-max Outer sheath of the cable	Armour thickness	Weight Kg
NEVL02NB	1/4" NPT	**NEVL12IB**	M12x1,5	18	18	18	59	3.0 - 6.0	6 - 10.0	0.2 - 1.3	0,100
NEVL01NB	3/8" NPT	**NEVL16IB**	M16x1,5	24	24	24	59	3.5 - 8.6	6 - 13.2	0.2 - 1.3	0,145
NEVL1SNB	1/2" NPT	**NEVL20SIB**	M20x1,5	24	26	26	59	6.3 - 11.6	9.5 - 16	0.2 - 1.3	0,157
NEVL1NB	1/2" NPT	**NEVL20IB**	M20x1,5	30	32	32	61	6.5 - 14	12.5 - 21	0.2 - 1.4	0,215
NEVL2NB	3/4" NPT	**NEVL25IB**	M25x1,5	36	38	38	61	11 - 20	20 - 27.5	0.2 - 1.6	0,261
NEVL3NB	1" NPT	**NEVL32IB**	M32x1,5	45	47	47	72	17 - 27	23.5 - 34	0.2 - 2.0	0,433
NEVL4NB	1 ¼" NPT	**NEVL40IB**	M40x1,5	50	52	52	73	22 - 32	26 - 40	0.2 - 2.2	0,514
NEVL5SNB	1 ½" NPT	**NEVL50SIB**	M50x1,5	55	57	57	80	29.5 - 38	35 - 46.5	0.2 - 2.5	0,610
NEVL5NB	2" NPT	**NEVL50IB**	M50x1,5	62/60*	62	62	81	35.5 - 44	38 - 53	0.2 - 2.5	0,562
NEVL6SNB	2" NPT	**NEVL63SIB**	M63x1,5	68	75	77	91	40 - 50	45.5 - 59.5	0.2 - 2.5	1,151
NEVL6NB	2 ½" NPT	**NEVL63IB**	M63x1,5	75/73*	80	82	93	47 - 56	54.5 - 66	0.2 - 2.5	1,100
NEVL7SNB	2 ½" NPT	**NEVL75SIB**	M75x1,5	80	85	90	97	53 - 62	57 - 72	0.2 - 2.8	1,308
NEVL7NB	3" NPT	**NEVL75IB**	M75x1,5	90/85*	95	100	99	59 - 68	66.5 - 78.5	0.2 - 2.8	1,538
NEVL8NB	3" NPT	**NEVL90IB**	M90x1,5	100	105	110	104	66 - 79	76.5 - 90	0.2 - 2.8	2,000
NEVL9NB	3 ½" NPT	**NEVL100IB**	M100x1,5	115	120	120	111	76 - 91	86 - 101	0.2 - 3.3	2,381
NEVL10NB	4" NPT	**NEVL115IB**	M115x1,5	120	125	130	112	86 - 98	100 - 110	0.2 - 3.5	2,783

** Dimensions with threaded: NPT / ISO*



Sample order code

NEVL	6	N	B
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NEVL1B)*
- *Also available in stainless steel AISI 316 (sample code NEVL1**S**)*
- *Other materials on request*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NEVL1S**IA**)*
- *Internal ring for armoured cables with larger cross-section*

Cable gland series NEVCF for armoured cables "coldflow"

The NEVCF series cable gland is suitable for inserting only circular armored cables into 'Ex db' enclosures with threaded entries and 'Ex eb' or 'Ex tb' enclosures with threaded or flat entries. The NEVCF series cable gland was designed to prevent the phenomenon called "COLD FLOW" that is the tendency of a solid material to deform under the constant stress of mechanical pressure. A cable is defined as "COLD FLOW" when the sheath under the armor undergoes, over time, deformations that undermine the integrity of the cable and the seal of the cable gland itself. The NEVCF cable gland, unlike traditional cable glands, has a rubber seal that closes the cable sheath, ensuring the perfect use in accordance with IEC/EN60079-14 Standard and therefore suitable for use with "COLD FLOW" cables.
To guarantee the IP 66/68 protection degree, NEVCF type cable glands with cylindrical thread are available for use with a flat gasket, while for all other threads, the IP 66/68 protection degree is obtained with the sealant applied on at least two threads complete.





Classification: 2014/34/EU	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db	
Certification:	ATEX CESI 24 ATEX 016 X	
	IEC Ex IECEx CES 24.0012X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-14: 2014, EN 62444: 2013, EN 60529: 1992+A2: 2013, EN 60079-1:2014, EN 60079-7:2015 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2018, IEC 60079-0:2017, IEC 60079-14:2013, IEC 62444:2010, IEC 60529:2001, IEC 60079-1:2014, IEC 60079-7:2015 RoHS Directive 2011/65/UE	
Operating temperature:	-60°C +80°C	
Protection rating:	IP66/67/68	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

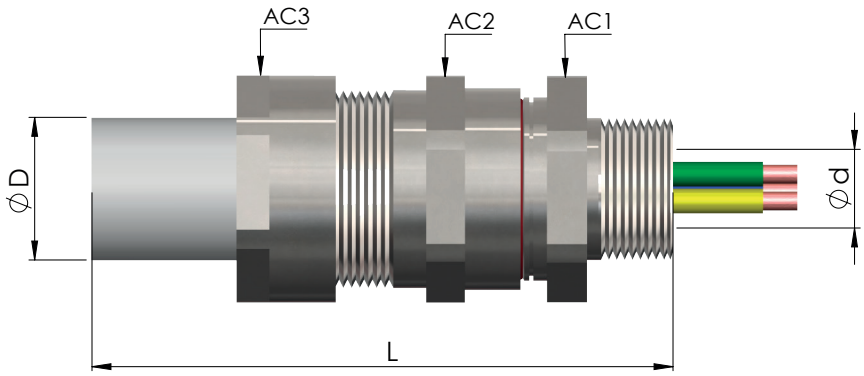
Locknuts	ISO thread	Nickel-plated brass	Stainless steel
	M16x1,5	**DL01IB**	**DL01IS**
	M20x1,5	**DL1IB**	**DL1IS**
	M25x1,5	**DL2IB**	**DL2IS**
	M32x1,5	**DL3IB**	**DL3IS**
	M40x1,5	**DL4IB**	**DL4IS**
	M50x1,5	**DL5IB**	**DL5IS**
	M63x1,5	**DL6IB**	**DL6IS**
	M75x1,5	**DL7IB**	**DL7IS**
	M90x1,5	**DL8IB**	**DL8IS**
	M100x1,5	**DL10IB**	**DL10IS**
	M115x1,5	**DL115IB**	**DL115IS**

Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

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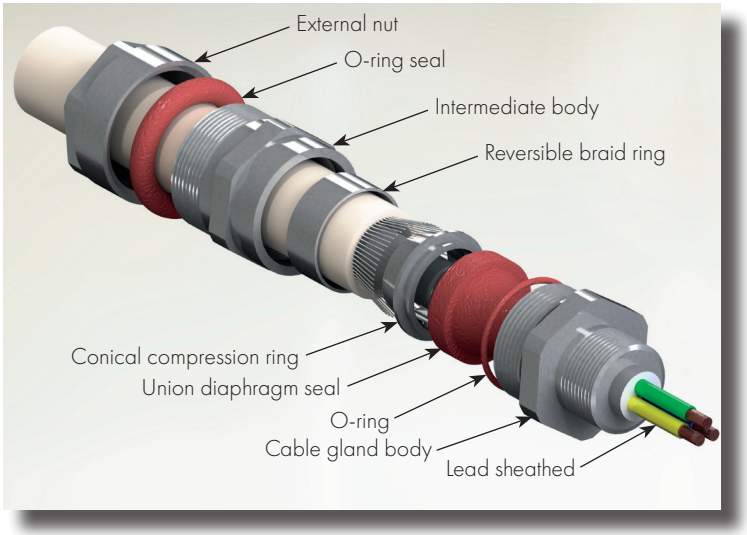


CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	AC3	L (NPT)	L (ISO)	Range Ød min-max Internal cable sheath	ØD min-max Outer sheath of the cable	Armour thickness	Weight Kg
NEVCF01SNB	3/8" NPT	**NEVCF16SIB**	M16x1,5	24	24	22	64	63	3.5 - 8.0	6.5 - 12.0	0.8 - 1.25	
NEVCF01NB	3/8" NPT	**NEVCF16IB**	M16x1,5	24	24	24	61	60	6.0 - 11.0	9.0 - 16.0	0.8 - 1.25	
NEVCF1SNB	1/2" NPT	**NEVCF20SIB**	M20x1,5	24	24	24	66	60	6.0 - 11.0	9.0 - 16.0	0.8 - 1.25	
NEVCF1NB	1/2" NPT	**NEVCF20IB**	M20x1,5	30	30	30	66	60	8.5 - 14.5	12.0 - 20.0	0.8 - 1.25	
NEVCF2NB	3/4" NPT	**NEVCF25IB**	M25x1,5	36	36	36	75	63	12.0 - 20.0	16.0 - 26.0	1.25 - 1.6	
NEVCF3NB	1" NPT	**NEVCF32IB**	M32x1,5	46	46	46	90,5	79,5	17.0 - 26.0	20.0 - 33.0	1.6 - 2.0	
NEVCF4NB	1 ¼" NPT	**NEVCF40IB**	M40x1,5	55	55	55	97	82	23.0 - 32.0	29.0 - 41.0	1.6 - 2.0	
NEVCF5NB	1 ½" NPT	**NEVCF50IB**	M50x1,5	65	65	65	105,7	92,7	29.0 - 41.0	36.0 - 52.0	1.8 - 2.5	
NEVCF6NB	2" NPT	**NEVCF63IB**	M63x1,5	80	80	80	118,7	105,7	40.0 - 56.0	50.0 - 65.0	2.8 - 2.5	
NEVCF7NB	2 ½" NPT	**NEVCF75IB**	M75x1,5	95	95	95	144,7	118,7	54.5 - 68.0	61.0 - 78.0	1.8 - 2.5	
NEVCF8NB	3" NPT	**NEVCF80IB**	M80x1,5	106	106	106	143,2	115,2	67.0 - 73.0	75.0 - 89.0	2.0 - 3.5	
NEVCF9NB	3 ½" NPT	**NEVCF90IB**	M90x1,5	106	106	106	143	115	67.0 - 77.0	75.0 - 89.0	2.0 - 3.5	
NEVCF10NB	4" NPT	**NEVCF100IB**	M100x1,5	127	127	127	158	129	75.0 - 91.0	88.0 - 104.0	2.5 - 4.0	

Sample order code

NEVCF	6	N	B
MODEL	SIZE	THREAD	MATERIAL

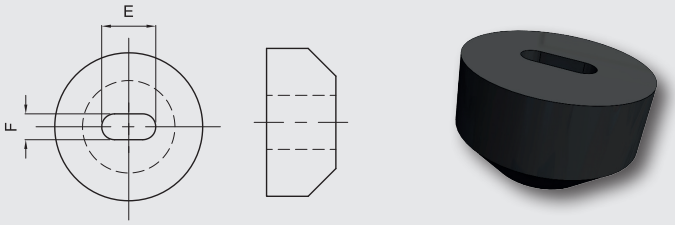


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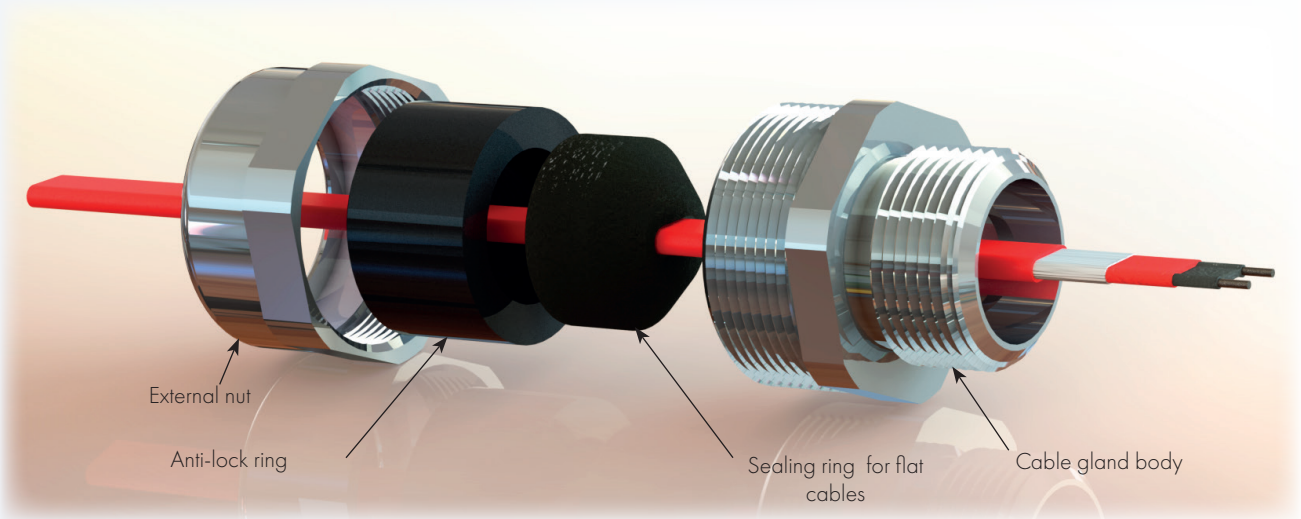
- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland*
- *The ISO7/1 thread version is available upon request (sample code NEVCF1B)*
- *Also available in stainless steel AISI 316 (sample code NEVCF1N**S**)*
- *Internal ring for armoured cables with larger cross-section*

Cable glands for non-armoured cables: Sealing ring for flat / heating cables



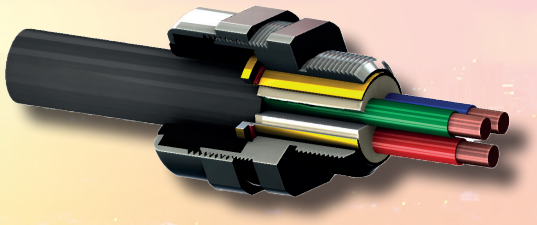
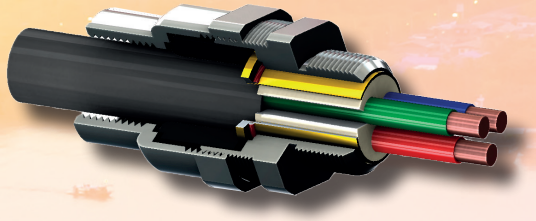
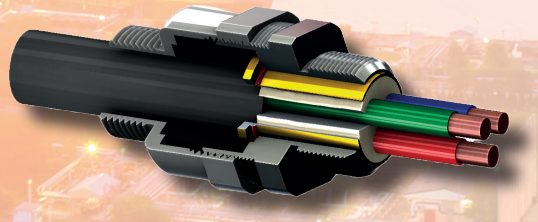
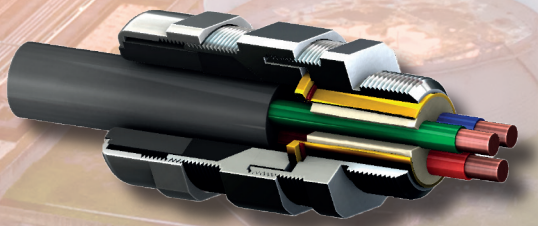
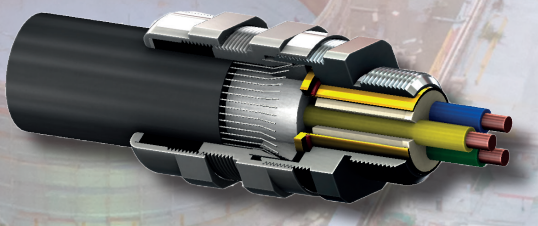


Cable gland type		E	F	Code
NAV..01N..	NAV..16I..	7.7	5.5	**H01-567**
NAV..1SN..	NAV..20SI..	7.7	5.5	**H1S-567/1**
NAV..1SN..	NAV..20SI..	8.7	3.5	**H1S-567/2**
NAV..1SN..	NAV..20SI..	9.7	4.1	**H1S-567/3**
NAV..1SN..	NAV..20SI..	10.2	4.1	**H1S-567/4**
NAV..1SN..	NAV..20SI..	10.7	4.6	**H1S-567/5**
NAV..1SN..	NAV..20SI..	10.7	5.1	**H1S-567/6**
NAV..1SN..	NAV..20SI..	10.7	6.1	**H1S-567/7**
NAV..1N..	NAV..20I..	7.7	5.5	**H1-567/1**
NAV..1N..	NAV..20I..	8.7	3.5	**H1-567/2**
NAV..1N..	NAV..20I..	9.7	4.1	**H1-567/3**
NAV..1N..	NAV..20I..	10.2	4.1	**H1-567/4**
NAV..1N..	NAV..20I..	10.5	5.5	**H1-567/45**
NAV..1N..	NAV..20I..	10.7	4.6	**H1-567/5**
NAV..1N..	NAV..20I..	10.7	5.1	**H1-567/6**
NAV..1N..	NAV..20I..	10.7	6.1	**H1-567/7**
NAV..1N..	NAV..20I..	11.7	5.6	**H1-567/8**
NAV..1N..	NAV..20I..	13.3	7.6	**H1-567/9**
NAV..2N..	NAV..25I..	7.7	5.5	**H2-567/1**
NAV..2N..	NAV..25I..	8.7	3.5	**H2-567/2**
NAV..2N..	NAV..25I..	9.7	4.1	**H2-567/3**
NAV..2N..	NAV..25I..	10.2	4.1	**H2-567/4**
NAV..2N..	NAV..25I..	10.5	5.5	**H2-567/45**
NAV..2N..	NAV..25I..	10.7	4.6	**H2-567/5**
NAV..2N..	NAV..25I..	10.7	5.1	**H2-567/6**
NAV..2N..	NAV..25I..	10.7	6.1	**H2-567/7**
NAV..2N..	NAV..25I..	11.7	5.6	**H2-567/8**
NAV..2N..	NAV..25I..	15.4	5.5	**H2-567/9**



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Types of barrier cable glands

Illustration	Code	Description
	NAVB	Cable gland for non-armoured cables from 3/8" to 4"
	NAVBF	Cable gland for non-armoured cables from 3/8" to 4" with a female threaded outlet fitting
	NAVBN	Cable gland for non-armoured cables from 3/8" to 4" with a male threaded outlet fitting
	NAVGB	Cable gland for non-armoured cables from 3/8" to 4" Provides a cable retention seal onto the cables outer sheath
	NEVB	Cable gland for armoured cables from 3/8" to 4"

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Resin coating methods barrier cable glands

1



SCD system

Cartridge system with resin plus mixer for use with manual dispenser supplied as an option. The best and most comfortable solution for the resin coating of large quantities of cable glands.

Order code cartridge + mixer: BOND-C
Order code dispenser: DISP-C

2



SBR system

Resin bag system. The most economical way of resin coating for small quantities of cable glands.

Order code 25 ml bag: BOND-B-25
Order code 100 ml bag: BOND-B-100

3



SAD system

The system with adapters for the use of normal silicone guns (not included) together with resin cartridges and KC mixers.

Order code adapters: ADAP-C

No resin waste!

Thanks to the exclusive software internally developed, it is possible to receive the exact quantity of resin for the required cable glands supply without incurring the risk of resin waste.

Cable gland series NAVB for non-armoured cables from 3/8" to 4"

The NAVB series barrier cable glands for non-armoured cable are designed to guarantee the IP66/67 protection and the explosion protection 'Ex db IIC; Ex eb IIC 'in applications where installation requirements are needed in accordance with the EN - IEC 60079-14: 2015 standard. The barrier is shaped around the conductors thanks to the particular mixture that flows through them in the special bushing ensuring a complete seal. The liquid resin used prevents the formation of air pockets or voids between the conductors and the bushing (typical problems found with malleable resins). Resin kit available separately.



NAVB assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc	
Certification:	ATEX (category 2): IMQ 19 ATEX 019X ATEX (category 3): IMQ 19 ATEX 020X IEC Ex IECEx IMQ 19.0003X TR CU DISPONIBLE	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2010, EN 60079-31: 2014 ed alla DIRETTIVA EUROPEA 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014, IEC60079-7: 2015, IEC60079-15: 2010, IEC60079-31: 2013 Direttiva RoHS 2011/65/UE	
Operating temperature:	-60°C +100°C	
Protection rating:	IP66/67	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel
	M16x1,5	**DL01IB**	**DL01IG**	**DL01IS**
	M20x1,5	**DL1IB**	**DL1IG**	**DL1IS**
	M25x1,5	**DL2IB**	**DL2IG**	**DL2IS**
	M32x1,5	**DL3IB**	**DL3IG**	**DL3IS**
	M40x1,5	**DL4IB**	**DL4IG**	**DL4IS**
	M50x1,5	**DL5IB**	**DL5IG**	**DL5IS**
	M63x1,5	**DL6IB**	**DL6IG**	**DL6IS**
	M75x1,5	**DL7IB**	**DL7IG**	**DL7IS**
	M90x1,5	**DL8IB**	**DL8IG**	**DL8IS**
	M100x1,5	**DL10IB**	**DL10IG**	**DL10IS**
	M115x1,5	**DL115IB**	**DL115IG**	**DL115IS**

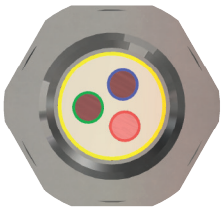
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M16x1,5	**A0131IB**	**A0131IS**		**RDI01IS/A4**	
	M20x1,5	**A131IB**	**A131IS**		**RDI1IS/A4**	
	M25x1,5	**A231IB**	**A231IS**		**RDI2IS/A4**	
	M32x1,5	**A331IB**	**A331IS**		**RDI3IS/A4**	
	M40x1,5	**A431IB**	**A431IS**		**RDI4IS/A4**	
	M50x1,5	**A531IB**	**A531IS**		**RDI5IS/A4**	
	M63x1,5	**A631IB**	**A631IS**		**RDI6IS/A4**	
	M75x1,5	**A731IB**	**A731IS**			
	M90x1,5	**A831IB**	**A831IS**			
	M100x1,5	**A1031IB**	**A1031IS**			
	M115x1,5	**A1031B**	**A1031S**			

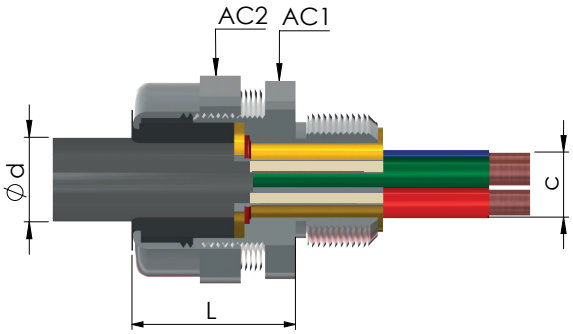
Black TPV protector	Cableglands		Code
	NAVB01NB	NAVB16IB	**PGA1F**
	NAVB1SNB	NAVB20SIB	**PGA1N**
	NAVB1NB	NAVB20IB	**PGA1**
	NAVB2NB	NAVB25IB	**PGA2N**
	NAVB3NB	NAVB32IB	**PGA4**
	NAVB4NB	NAVB40IB	**PGA4**
	NAVB5SNB	NAVB50SIB	**PGA5**
	NAVB5NB	NAVB50IB	**PGA5N**
	NAVB6SNB	NAVB63SIB	**PGA6**
	NAVB6NB	NAVB63IB	**PGA6**
	NAVB7SNB	NAVB75SIB	**PGA7**
	NAVB7NB	NAVB75IB	**GTR7** Heat shrinkable
	NAVB8NB	NAVB90IB	
	NAVB9NB	NAVB100IB	
	NAVB10NB	NAVB115IB	

* For different threads, contact the sales department.

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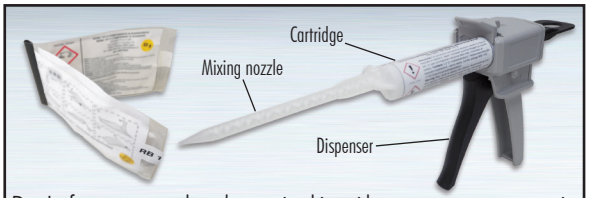
CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm			Range			Weight	Q.ty of resin ml ***
				AC1	AC2	L	Ød cable max	Øc over cores	n. max cable **	Kg	
NAVB01NB	3/8" NPT	NAVB16IB	M16x1,5	24	24	29.5	7.1	5.5	11	0,094	1.3
NAVB1SNB	1/2" NPT	NAVB20SIB	M20x1,5	24	26	30	11.6	10	11	0,093	3.7
NAVB1NB	1/2" NPT	NAVB20IB	M20x1,5	30	32	33	13.2	11	11	0,126	4.2
NAVB2NB	3/4" NPT	NAVB25IB	M25x1,5	36	38	32	18.6	15	21	0,153	8.3
NAVB3NB	1" NPT	NAVB32IB	M32x1,5	45	47	33	25	21	38	0,232	15
NAVB4NB	1 ¼" NPT	NAVB40IB	M40x1,5	50	52	34	31.8	27	59	0,295	24
NAVB5SNB	1 ½" NPT	NAVB50SIB	M50x1,5	55	57	36	38	33	89	0,374	36
NAVB5NB	2" NPT	NAVB50IB	M50x1,5	62/60*	62	36	42	35	89	0,329	41
NAVB6SNB	2" NPT	NAVB63SIB	M63x1,5	68	77	46.5	50	43	115	0,753	65
NAVB6NB	2 ½" NPT	NAVB63IB	M63x1,5	75/73*	77	47.5	54	45	115	0,732	70
NAVB7SNB	2 ½" NPT	NAVB75SIB	M75x1,5	80	82	65/51*	62	53	140	0,714	98
NAVB7NB	3" NPT	NAVB75IB	M75x1,5	90/85*	90	51	65	55	140	0,627	101
NAVB8NB	3" NPT	NAVB90IB	M90x1,5	100	110	53.5	78.1	65	200	1,384	145
NAVB9NB	3 ½" NPT	NAVB100IB	M100x1,5	115	120	58	86	72	200	1,316	188
NAVB10NB	4" NPT	NAVB115IB	M115x1,5	120	130	57.5	98	85	200	1,937	254

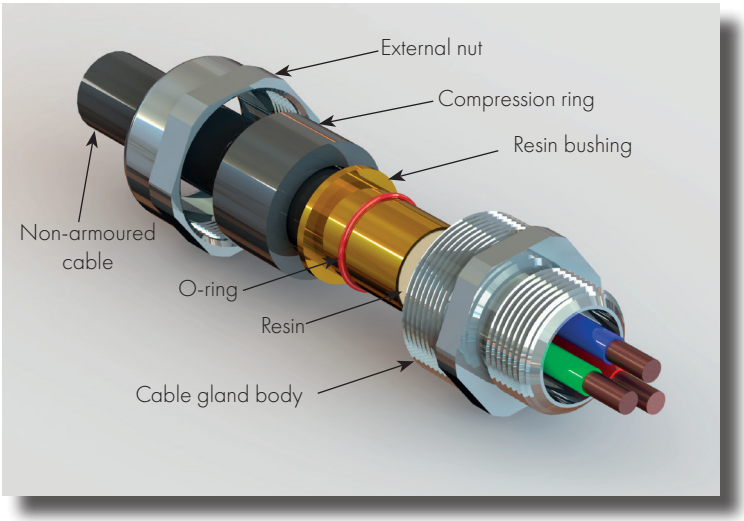
** Dimensions with threaded: NPT / ISO.*
*** At least 20% of the internal section of the bushing must be filled with resin.*
**** Maximum quantity of resin calculated with completely empty bushing.*

Sample order code of the cable gland

NAVB	6S	N	B
MODEL	SIZE	THREAD	MATERIAL



Don't forget to order the resin kit with two-component resin (see p. B.21):
- 25 ml resin bag code BOND-B-25
- 100 ml resin bag code BOND-B-100
- 40 ml cartridge + mixing nozzle code BOND-C (manual dispenser supplied as an option code DISP-C)



TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland.*
- *The ISO7/1 thread version is available upon request (sample code NAVB1B).*
- *Also available in stainless steel AISI 316 (sample code NAVB1**S**).*
- *Other materials on request.*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAVB1**IA**).*

Cable gland series NAVBF for non-armoured cables from 3/8" to 4"

The NAVBF series barrier cable glands for non-armoured cable, with a female threaded outlet fitting, are designed to guarantee the IP66/67 protection and the explosion protection 'Ex db IIC; Ex eb IIC 'in applications where installation requirements are needed in accordance with the EN - IEC 60079-14: 2015 standard. The barrier is shaped around the conductors thanks to the particular mixture that flows through them in the special bushing ensuring a complete seal. The liquid resin used prevents the formation of air pockets or voids between the conductors and the bushing (typical problems found with malleable resins). Resin kit available separately.

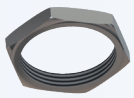


NAVBF assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc	
Certification:	ATEX (category 2): IMQ 19 ATEX 019X ATEX (category 3): IMQ 19 ATEX 020X IEC Ex IECEx IMQ 19.0003X TR CU DISPONIBLE	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2010, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014, IEC60079-7: 2015, IEC60079-15: 2010, IEC60079-31: 2013 RoHS Directive 2002/95/CE	
Operating temperature:	-60°C +100°C	
Protection rating:	IP66/67	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel
	M16x1,5	DL01IB	DL01IG	DL01IS
	M20x1,5	DL1IB	DL1IG	DL1IS
	M25x1,5	DL2IB	DL2IG	DL2IS
	M32x1,5	DL3IB	DL3IG	DL3IS
	M40x1,5	DL4IB	DL4IG	DL4IS
	M50x1,5	DL5IB	DL5IG	DL5IS
	M63x1,5	DL6IB	DL6IG	DL6IS
	M75x1,5	DL7IB	DL7IG	DL7IS
	M90x1,5	DL8IB	DL8IG	DL8IS
	M100x1,5	DL10IB	DL10IG	DL10IS
	M115x1,5	DL115IB	DL115IG	DL115IS

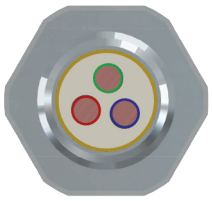
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the RE... series
	M16x1,5	A0131IB	A0131IS		RDI01IS/A4	
	M20x1,5	A131IB	A131IS		RDI1IS/A4	
	M25x1,5	A231IB	A231IS		RDI2IS/A4	
	M32x1,5	A331IB	A331IS		RDI3IS/A4	
	M40x1,5	A431IB	A431IS		RDI4IS/A4	
	M50x1,5	A531IB	A531IS		RDI5IS/A4	
	M63x1,5	A631IB	A631IS		RDI6IS/A4	
	M75x1,5	A731IB	A731IS			
	M90x1,5	A831IB	A831IS			
	M100x1,5	A1031IB	A1031IS			
	M115x1,5	A1031B	A1031S			

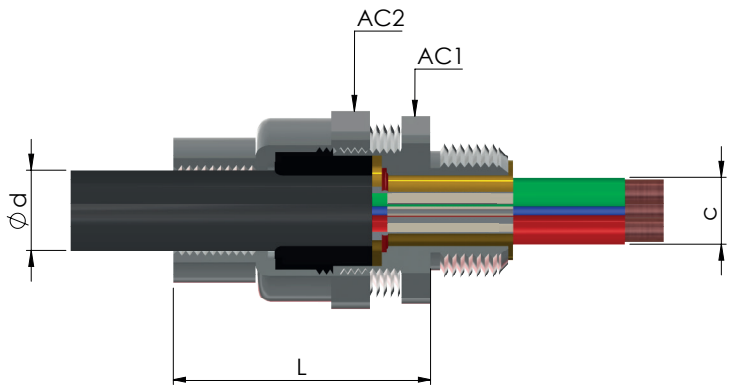
Black TPV protector	Cableglands		Code
	NAVBF01NB	NAVBF16IB	PGA1F
	NAVBF1SNB	NAVBF20SIB	PGA1N
	NAVBF1NB	NAVBF20IB	PGA1
	NAVBF2NB	NAVBF25IB	PGA2N
	NAVBF3NB	NAVBF32IB	PGA4
	NAVBF4NB	NAVBF40IB	PGA4
	NAVBF5SNB	NAVBF50SIB	PGA5
	NAVBF5NB	NAVBF50IB	PGA5N
	NAVBF6SNB	NAVBF63SIB	PGA6
	NAVBF6NB	NAVBF63IB	PGA6
	NAVBF7SNB	NAVBF75SIB	PGA7
	NAVBF7NB	NAVBF75IB	GTR7 Heat shrinkable
	NAVBF8NB	NAVBF90IB	
	NAVBF9NB	NAVBF100IB	
	NAVBF10NB	NAVBF115IB	

* For different threads, contact the sales department.

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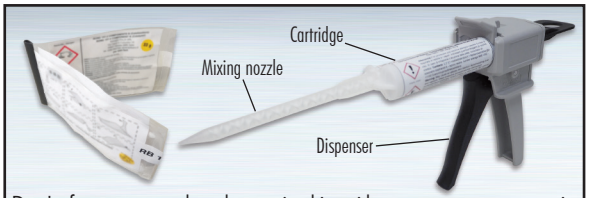
CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	L	Range Ød cable max	Øc over cores	n. max cable **	Weight Kg	Q.ty of resin ml ***
NAVBF01NB	3/8" NPT	NAVBF16IB	M16x1,5	24	24	48.5	8.6	5.5	11	0,117	1.3
NAVBF1SNB	1/2" NPT	NAVBF20SIB	M20x1,5	24	26	49	11.6	10	11	0,130	3.7
NAVBF1NB	1/2" NPT	NAVBF20IB	M20x1,5	30	32	52.5	14	11	11	0,170	4.2
NAVBF2NB	3/4" NPT	NAVBF25IB	M25x1,5	36	38	51.5	20	15	21	0,233	8.3
NAVBF3NB	1" NPT	NAVBF32IB	M32x1,5	45	47	52.5	27	21	38	0,303	15
NAVBF4NB	1 ¼" NPT	NAVBF40IB	M40x1,5	50	52	53.5	32	27	59	0,401	24
NAVBF5SNB	1 ½" NPT	NAVBF50SIB	M50x1,5	55	57	56.5	38	33	89	0,530	36
NAVBF5NB	2" NPT	NAVBF50IB	M50x1,5	62/60*	62	56.5	44	35	89	0,470	41
NAVBF6SNB	2" NPT	NAVBF63SIB	M63x1,5	68	77	69	50	43	115	1,079	65
NAVBF6NB	2 ½" NPT	NAVBF63IB	M63x1,5	75/73*	77	70	56	45	115	0,815	70
NAVBF7SNB	2 ½" NPT	NAVBF75SIB	M75x1,5	80	82	73.5	62	53	140	0,918	98
NAVBF7NB	3" NPT	NAVBF75IB	M75x1,5	90/85*	90	73.5	68	55	140	1,027	101
NAVBF8NB	3" NPT	NAVBF90IB	M90x1,5	100	110	82	79	65	200	2,071	145
NAVBF9NB	3 ½" NPT	NAVBF100IB	M100x1,5	115	120	88	91	72	200	2,192	188
NAVBF10NB	4" NPT	NAVBF115IB	M115x1,5	120	130	87.5	98	85	200	2,565	254

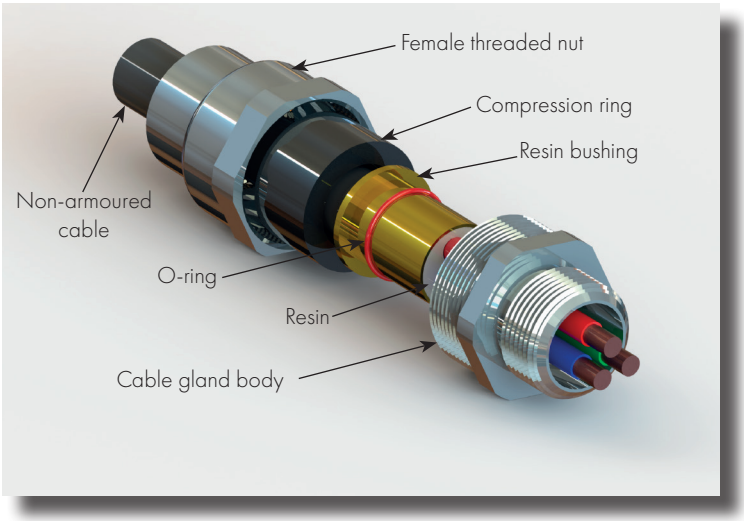
** Dimensions with threaded: NPT / ISO.*
*** At least 20% of the internal section of the bushing must be filled with resin.*
**** Maximum quantity of resin calculated with completely empty bushing.*

Sample order code of the cable gland

NAVBF	6S	N	B
MODEL	SIZE	THREAD	MATERIAL



Don't forget to order the resin kit with two-component resin (see p. B.21):
- 25 ml resin bag code BOND-B-25
- 100 ml resin bag code BOND-B-100
- 40 ml cartridge + mixing nozzle code BOND-C (manual dispenser supplied as an option code DISP-C)



TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland.*
- *The ISO7/1 thread version is available upon request (sample code NAVBF1B).*
- *Also available in stainless steel AISI 316 (sample code NAVBF1**S**).*
- *Other materials on request.*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAVBF1**IA**).*

Cable gland series NAVBN for non-armoured cables from 3/8" to 4"

The NAVBN series barrier cable glands for non-armoured cable, with a male threaded outlet fitting, are designed to guarantee the IP66/67 protection and the explosion protection 'Ex db IIC; Ex eb IIC 'in applications where installation requirements are needed in accordance with the EN - IEC 60079-14: 2015 standard. The barrier is shaped around the conductors thanks to the particular mixture that flows through them in the special bushing ensuring a complete seal. The liquid resin used prevents the formation of air pockets or voids between the conductors and the bushing (typical problems found with malleable resins). Resin kit available separately.

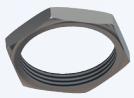


NAVBN assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc	
Certification:	ATEX (category 2): IMQ 19 ATEX 019X ATEX (category 3): IMQ 19 ATEX 020X IEC Ex IECEx IMQ 19.0003X TR CU DISPONIBLE	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2010, EN 60079-31: 2014 ed alla DIRETTIVA EUROPEA 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014, IEC60079-7: 2015, IEC60079-15: 2010, IEC60079-31: 2013 Direttiva RoHS 2011/65/UE	
Operating temperature:	-60°C +100°C	
Protection rating:	IP66/67	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel
	M16x1,5	DL01IB	DL01IG	DL01IS
	M20x1,5	DL1IB	DL1IG	DL1IS
	M25x1,5	DL2IB	DL2IG	DL2IS
	M32x1,5	DL3IB	DL3IG	DL3IS
	M40x1,5	DL4IB	DL4IG	DL4IS
	M50x1,5	DL5IB	DL5IG	DL5IS
	M63x1,5	DL6IB	DL6IG	DL6IS
	M75x1,5	DL7IB	DL7IG	DL7IS
	M90x1,5	DL8IB	DL8IG	DL8IS
	M100x1,5	DL10IB	DL10IG	DL10IS
	M115x1,5	DL115IB	DL115IG	DL115IS

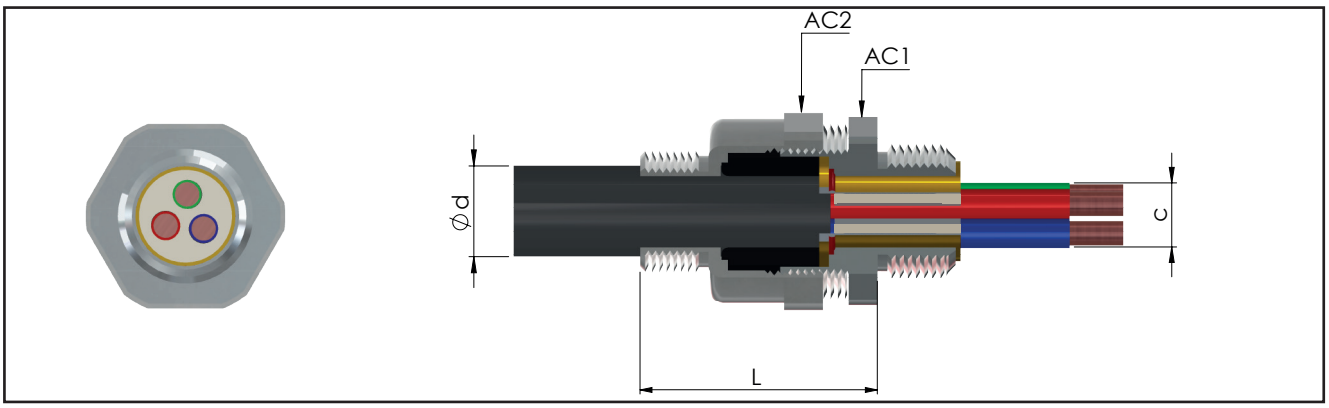
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the RE... series
	M16x1,5	A0131IB	A0131IS		RDI01IS/A4	
	M20x1,5	A131IB	A131IS		RDI1IS/A4	
	M25x1,5	A231IB	A231IS		RDI2IS/A4	
	M32x1,5	A331IB	A331IS		RDI3IS/A4	
	M40x1,5	A431IB	A431IS		RDI4IS/A4	
	M50x1,5	A531IB	A531IS		RDI5IS/A4	
	M63x1,5	A631IB	A631IS		RDI6IS/A4	
	M75x1,5	A731IB	A731IS			
	M90x1,5	A831IB	A831IS			
	M100x1,5	A1031IB	A1031IS			
	M115x1,5	A1031B	A1031S			

Black TPV protector	Cableglands		Code
	NAVBN01NB	NAVBN16IB	PGA1F
	NAVBN1SNB	NAVBN20SIB	PGA1N
	NAVBN1NB	NAVBN20IB	PGA1
	NAVBN2NB	NAVBN25IB	PGA2N
	NAVBN3NB	NAVBN32IB	PGA4
	NAVBN4NB	NAVBN40IB	PGA4
	NAVBN5SNB	NAVBN50SIB	PGA5
	NAVBN5NB	NAVBN50IB	PGA5N
	NAVBN6SNB	NAVBN63SIB	PGA6
	NAVBN6NB	NAVBN63IB	PGA6
	NAVBN7SNB	NAVBN75SIB	PGA7
	NAVBN7NB	NAVBN75IB	GTR7 Heat shrinkable
	NAVBN8NB	NAVBN90IB	
	NAVBN9NB	NAVBN100IB	
	NAVBN10NB	NAVBN115IB	

* For different threads, contact the sales department.

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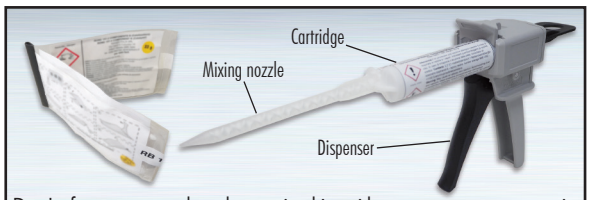
CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm			Range			Weight	Q.ty of resin ml ***
				AC1	AC2	L	Ød cable max	Øc over cores	n. max cable **	Kg	
NAVBN01NB	3/8" NPT	**NAVBN16IB**	M16x1,5	24	24	47.5	8.6	5.5	11	0,115	1.3
NAVBN1SNB	1/2" NPT	**NAVBN20SIB**	M20x1,5	24	26	48	11.6	10	11	0,134	3.7
NAVBN1NB	1/2" NPT	**NAVBN20IB**	M20x1,5	30	32	51.5	14	11	11	0,165	4.2
NAVBN2NB	3/4" NPT	**NAVBN25IB**	M25x1,5	36	38	50.5	20	15	21	0,211	8.3
NAVBN3NB	1" NPT	**NAVBN32IB**	M32x1,5	45	47	51.5	27	21	38	0,290	15
NAVBN4NB	1 ¼" NPT	**NAVBN40IB**	M40x1,5	50	52	52.5	32	27	59	0,396	24
NAVBN5SNB	1 ½" NPT	**NAVBN50SIB**	M50x1,5	55	57	54.5	38	33	89	0,534	36
NAVBN5NB	2" NPT	**NAVBN50IB**	M50x1,5	62/60*	62	54.5	44	35	89	0,431	41
NAVBN6SNB	2" NPT	**NAVBN63SIB**	M63x1,5	68	77	67	50	43	115	1,137	65
NAVBN6NB	2 ½" NPT	**NAVBN63IB**	M63x1,5	75/73*	77	68	56	45	115	0,786	70
NAVBN7SNB	2 ½" NPT	**NAVBN75SIB**	M75x1,5	80	82	71.5	62	53	140	1,082	98
NAVBN7NB	3" NPT	**NAVBN75IB**	M75x1,5	90/85*	90	71.5	68	55	140	1,042	101
NAVBN8NB	3" NPT	**NAVBN90IB**	M90x1,5	100	110	80	79	65	200	1,984	145
NAVBN9NB	3 ½" NPT	**NAVBN100IB**	M100x1,5	115	120	86	91	72	200	2,043	188
NAVBN10NB	4" NPT	**NAVBN115IB**	M115x1,5	120	130	85.5	98	85	200	3,056	254

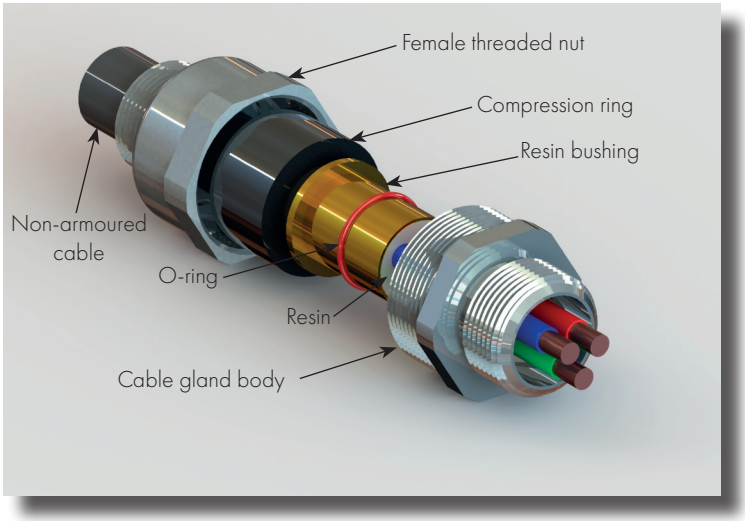
** Dimensions with threaded: NPT / ISO.*
*** At least 20% of the internal section of the bushing must be filled with resin.*
**** Maximum quantity of resin calculated with completely empty bushing.*

Sample order code of the cable gland

NAVBN	6S	N	B
MODEL	SIZE	THREAD	MATERIAL



Don't forget to order the resin kit with two-component resin (see p. B.21):
- 25 ml resin bag code BOND-B-25
- 100 ml resin bag code BOND-B-100
- 40 ml cartridge + mixing nozzle code BOND-C (manual dispenser supplied as an option code DISP-C)



TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland.*
- *The ISO7/1 thread version is available upon request (sample code NAVBN1B).*
- *Also available in stainless steel AISI 316 (sample code NAVBN1**S**).*
- *Other materials on request.*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NAVBN1**IA**).*

Cable gland series NAVGB for non-armoured cables from 3/8" to 4"

The NAVGB series barrier cable glands for non-armoured cable are designed to guarantee the IP66/67 protection and the explosion protection 'Ex db IIC; Ex eb IIC 'in applications where installation requirements are needed in accordance with the EN - IEC 60079-14: 2015 standard. The NAVGB cable glands are equipped with an additional gasket to tighten the cable inside the cable gland.
The barrier is shaped around the conductors thanks to the particular mixture that flows through them in the special bushing ensuring a complete seal. The liquid resin used prevents the formation of air pockets or voids between the conductors and the bushing (typical problems found with malleable resins). Resin kit available separately.

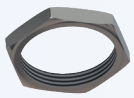


NAVGB assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc	
Certification:	ATEX (category 2): IMQ 19 ATEX 019X ATEX (category 3): IMQ 19 ATEX 020X IEC Ex IECEx IMQ 19.0003X TR CU DISPONIBLE	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2010, EN 60079-31: 2014 ed alla DIRETTIVA EUROPEA 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014, IEC60079-7: 2015, IEC60079-15: 2010, IEC60079-31: 2013 Direttiva RoHS 2011/65/UE	
Operating temperature:	-60°C +100°C	
Protection rating:	IP66/67	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel
	M16x1,5	DL01IB	DL01IG	DL01IS
	M20x1,5	DL1IB	DL1IG	DL1IS
	M25x1,5	DL2IB	DL2IG	DL2IS
	M32x1,5	DL3IB	DL3IG	DL3IS
	M40x1,5	DL4IB	DL4IG	DL4IS
	M50x1,5	DL5IB	DL5IG	DL5IS
	M63x1,5	DL6IB	DL6IG	DL6IS
	M75x1,5	DL7IB	DL7IG	DL7IS
	M90x1,5	DL8IB	DL8IG	DL8IS
	M100x1,5	DL10IB	DL10IG	DL10IS
	M115x1,5	DL115IB	DL115IG	DL115IS

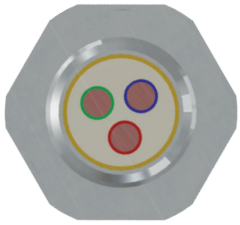
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the RE... series
	M16x1,5	A0131IB	A0131IS		RDI01IS/A4	
	M20x1,5	A131IB	A131IS		RDI1IS/A4	
	M25x1,5	A231IB	A231IS		RDI2IS/A4	
	M32x1,5	A331IB	A331IS		RDI3IS/A4	
	M40x1,5	A431IB	A431IS		RDI4IS/A4	
	M50x1,5	A531IB	A531IS		RDI5IS/A4	
	M63x1,5	A631IB	A631IS		RDI6IS/A4	
	M75x1,5	A731IB	A731IS			
	M90x1,5	A831IB	A831IS			
	M100x1,5	A1031IB	A1031IS			
	M115x1,5	A1031B	A1031S			

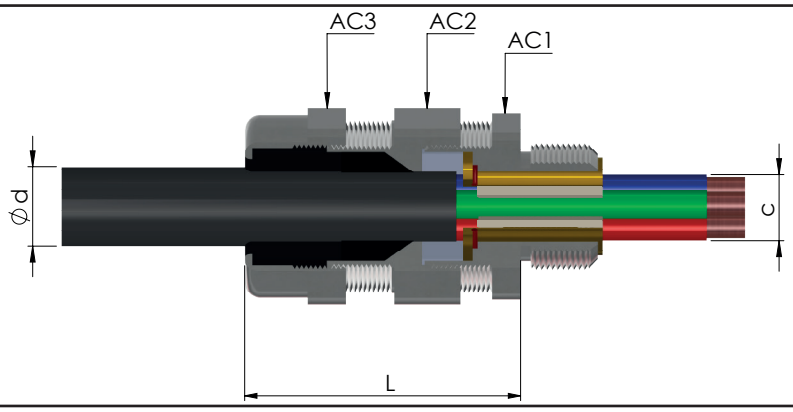
Black TPV protector	Cableglands		Code
	NAVGB01NB	NAVGB16IB	PGA1F
	NAVGB1SNB	NAVGB20SIB	PGA1N
	NAVGB1NB	NAVGB20IB	PGA1
	NAVGB2NB	NAVGB25IB	PGA2N
	NAVGB3NB	NAVGB32IB	PGA4
	NAVGB4NB	NAVGB40IB	PGA4
	NAVGB5SNB	NAVGB50SIB	PGA5
	NAVGB5NB	NAVGB50IB	PGA5N
	NAVGB6SNB	NAVGB63SIB	PGA6
	NAVGB6NB	NAVGB63IB	PGA7
	NAVGB7SNB	NAVGB75SIB	GTR7 Heat shrinkable
	NAVGB7NB	NAVGB75IB	
	NAVGB8NB	NAVGB90IB	
	NAVGB9NB	NAVGB100IB	
	NAVGB10NB	NAVGB115IB	

* For different threads, contact the sales department.

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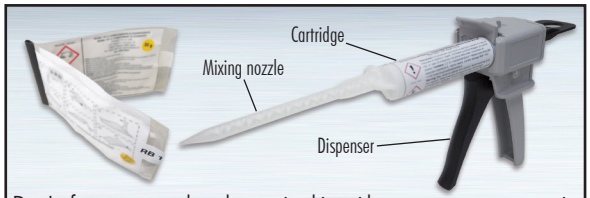
CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	AC3	L	Range Ød cable max	Øc over cores	n. max cable **	Peso Kg	Q.ty of resin ml ***
NAVGB01NB	3/8" NPT	NAVGB16IB	M16x1,5	24	24	24	54	3.5 - 8.6	5.5	11	0,130	1.3
NAVGB1SNB	1/2" NPT	NAVGB20SIB	M20x1,5	24	26	26	54	6.3 - 11.6	10	11	0,141	3.7
NAVGB1NB	1/2" NPT	NAVGB20IB	M20x1,5	30	32	32	57	6.5 - 14	11	11	0,193	4.2
NAVGB2NB	3/4" NPT	NAVGB25IB	M25x1,5	36	38	38	57	11 - 20	15	21	0,234	8.3
NAVGB3NB	1" NPT	NAVGB32IB	M32x1,5	45	47	47	62	17 - 27	21	38	0,389	15
NAVGB4NB	1 ¼" NPT	NAVGB40IB	M40x1,5	50	52	52	62	22 - 32	27	59	0,462	24
NAVGB5SNB	1 ½" NPT	NAVGB50SIB	M50x1,5	55	57	57	65	29.5 - 38	33	89	0,549	36
NAVGB5NB	2" NPT	NAVGB50IB	M50x1,5	62/60*	62	62	65	35.5 - 44	35	89	0,505	41
NAVGB6SNB	2" NPT	NAVGB63SIB	M63x1,5	68	75	77	77.5	40 - 50	43	115	1,035	65
NAVGB6NB	2 ½" NPT	NAVGB63IB	M63x1,5	75/73*	80	82	78.5	47 - 56	45	115	0,990	70
NAVGB7SNB	2 ½" NPT	NAVGB75SIB	M75x1,5	80	85	90	84	53 - 62	53	140	1,177	98
NAVGB7NB	3" NPT	NAVGB75IB	M75x1,5	90/85*	95	100	85	59 - 68	55	140	1,384	101
NAVGB8NB	3" NPT	NAVGB90IB	M90x1,5	100	105	110	91	66 - 79	65	200	1,800	145
NAVGB9NB	3 ½" NPT	NAVGB100IB	M100x1,5	115	120	120	94	76 - 91	72	200	2,142	188
NAVGB10NB	4" NPT	NAVGB115IB	M115x1,5	120	125	130	93.5	86 - 98	85	200	2,504	254

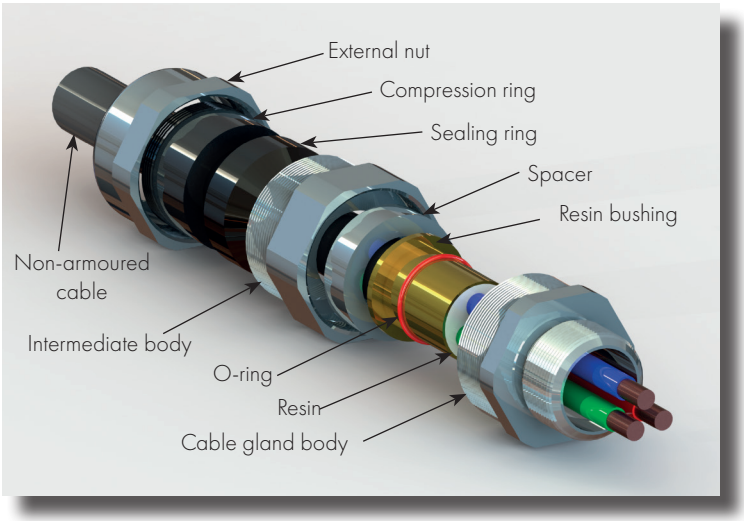
** Dimensions with threaded: NPT / ISO*
*** At least 20% of the internal section of the bushing must be filled with resin.*
**** Maximum quantity of resin calculated with completely empty bushing.*

Sample order code of the cable gland

NAVGB	6S	N	B
MODEL	SIZE	THREAD	MATERIAL



Don't forget to order the resin kit with two-component resin (see p. B.21):
- 25 ml resin bag code BOND-B-25
- 100 ml resin bag code BOND-B-100
- 40 ml cartridge + mixing nozzle code BOND-C (manual dispenser supplied as an option code DISP-C)



TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland.*
- *The ISO7/1 thread version is available upon request (sample code NAVGB1B).*
- *Also available in stainless steel AISI 316 (sample code NAVGB1**S**).*
- *Other materials on request.*

Cable gland series NEVB for armoured cables from 3/8" to 4"

The NEVB series barrier cable glands for armoured cable are designed to guarantee the IP66/67 protection and the explosion protection 'Ex db IIC; Ex eb IIC 'in applications where installation requirements are needed in accordance with the EN - IEC 60079-14: 2015 standard. The barrier is shaped around the conductors thanks to the particular mixture that flows through them in the special bushing ensuring a complete seal. The liquid resin used prevents the formation of air pockets or voids between the conductors and the bushing (typical problems found with malleable resins). Resin kit available separately.

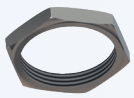


NEVB assembly instructions video

Classification: 2014/34/EU	Group II	Category 2GD/3G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex db IIC Gb - Ex eb IIC Gb II 2 D - Ex tb IIIC Db II 3G Ex nR IIC Gc	
Certification:	ATEX (category 2): IMQ 19 ATEX 019X	
	ATEX (category 3): IMQ 19 ATEX 020X	
	IEC Ex IECEx IMQ 19.0003X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-15: 2010, EN 60079-31: 2014 ed alla DIRETTIVA EUROPEA 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014, IEC60079-7: 2015, IEC60079-15: 2010, IEC60079-31: 2013 Direttiva RoHS 2011/65/UE	
Operating temperature:	-60°C +100°C	
Protection rating:	IP66/67	
Design	BS 6121: Part 1:1989, IEC 62444, EN 62444	

Certificates are available on www.elfit.com

ACCESSORIES UPON REQUEST

Locknuts	ISO thread	Nickel-plated brass	Galvanized steel	Stainless steel
	M16x1,5	DL01IB	DL01IG	DL01IS
	M20x1,5	DL1IB	DL1IG	DL1IS
	M25x1,5	DL2IB	DL2IG	DL2IS
	M32x1,5	DL3IB	DL3IG	DL3IS
	M40x1,5	DL4IB	DL4IG	DL4IS
	M50x1,5	DL5IB	DL5IG	DL5IS
	M63x1,5	DL6IB	DL6IG	DL6IS
	M75x1,5	DL7IB	DL7IG	DL7IS
	M90x1,5	DL8IB	DL8IG	DL8IS
	M100x1,5	DL10IB	DL10IG	DL10IS
	M115x1,5	DL115IB	DL115IG	DL115IS

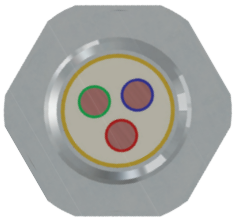
Nickel-plated brass earthing rings	ISO thread	Nickel-plated brass	Stainless steel	Serrated steinless steel lock washers	Code	Adapters and reducers of the **RE...** series
	M16x1,5	A0131IB	A0131IS		RDI01IS/A4	
	M20x1,5	A131IB	A131IS		RDI1IS/A4	
	M25x1,5	A231IB	A231IS		RDI2IS/A4	
	M32x1,5	A331IB	A331IS		RDI3IS/A4	
	M40x1,5	A431IB	A431IS		RDI4IS/A4	
	M50x1,5	A531IB	A531IS		RDI5IS/A4	
	M63x1,5	A631IB	A631IS		RDI6IS/A4	
	M75x1,5	A731IB	A731IS			
	M90x1,5	A831IB	A831IS			
	M100x1,5	A1031IB	A1031IS			
	M115x1,5	A1031B	A1031S			

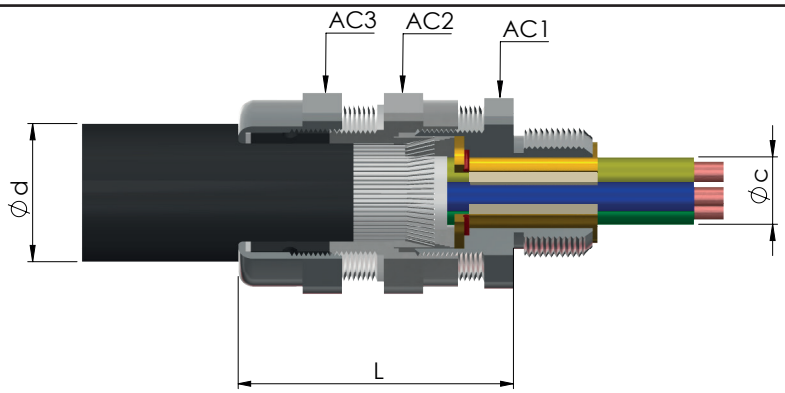
Black TPV protector	Cableglands		Code
	NEVB01NB	NEVB16IB	PGA1F
	NEVB1SNB	NEVB20SIB	PGA1N
	NEVB1NB	NEVB20IB	PGA1
	NEVB2NB	NEVB25IB	PGA2N
	NEVB3NB	NEVB32IB	PGA4
	NEVB4NB	NEVB40IB	PGA4
	NEVB5SNB	NEVB50SIB	PGA5
	NEVB5NB	NEVB50IB	PGA5N
	NEVB6SNB	NEVB63SIB	PGA6
	NEVB6NB	NEVB63IB	PGA7
	NEVB7SNB	NEVB75SIB	GTR7 Heat shrinkable
	NEVB7NB	NEVB75IB	
	NEVB8NB	NEVB90IB	
	NEVB9NB	NEVB100IB	
	NEVB10NB	NEVB115IB	

* For different threads, contact the sales department.

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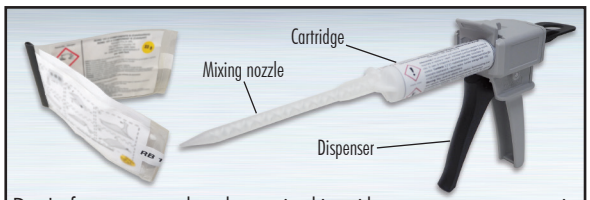
CABLE GLAND SELECTION TABLE

Code Nickel-plated brass	Thread	Code Nickel-plated brass	Thread	Dimensions in mm AC1	AC2	AC3	L	Range Ød cable max	Øc over cores	n. max cable **	Peso Kg	Q.ty of resin ml ***
NEVB01NB	3/8" NPT	**NEVB16IB**	M16x1,5	24	24	24	52	6 - 13.2	5.5	11	0,159	1.3
NEVB1SNB	1/2" NPT	**NEVB20SIB**	M20x1,5	24	26	26	53	9.5 - 16	10	11	0,172	3.7
NEVB1NB	1/2" NPT	**NEVB20IB**	M20x1,5	30	32	32	59	12.5 - 21	11	11	0,236	4.2
NEVB2NB	3/4" NPT	**NEVB25IB**	M25x1,5	36	38	38	55	20 - 27.5	15	21	0,287	8.3
NEVB3NB	1" NPT	**NEVB32IB**	M32x1,5	45	47	47	63	23.5 - 34	21	38	0,476	15
NEVB4NB	1 ¼" NPT	**NEVB40IB**	M40x1,5	50	52	52	65	26 - 40	27	59	0,565	24
NEVB5SNB	1 ½" NPT	**NEVB50SIB**	M50x1,5	55	57	57	69	35 - 46.5	33	89	0,671	36
NEVB5NB	2" NPT	**NEVB50IB**	M50x1,5	60	62	62	69	38 - 53	35	89	0,618	41
NEVB6SNB	2" NPT	**NEVB63SIB**	M63x1,5	68	75	77	81	45.5 - 59.5	43	115	1,266	65
NEVB6NB	2 ½" NPT	**NEVB63IB**	M63x1,5	73	80	82	83	54.5 - 66	45	115	1,210	70
NEVB7SNB	2 ½" NPT	**NEVB75SIB**	M75x1,5	80	85	90	87	57 - 72	53	140	1,438	98
NEVB7NB	3" NPT	**NEVB75IB**	M75x1,5	85	95	100	88	66.5 - 78.5	55	140	1,691	101
NEVB8NB	3" NPT	**NEVB90IB**	M90x1,5	100	105	110	92	76.5 - 90	65	200	2,200	145
NEVB9NB	3 ½" NPT	**NEVB100IB**	M100x1,5	115	120	120	100	86 - 101	72	200	2,619	188
NEVB10NB	4" NPT	**NEVB115IB**	M115x1,5	120	125	130	100	100 - 110	85	200	3,061	254

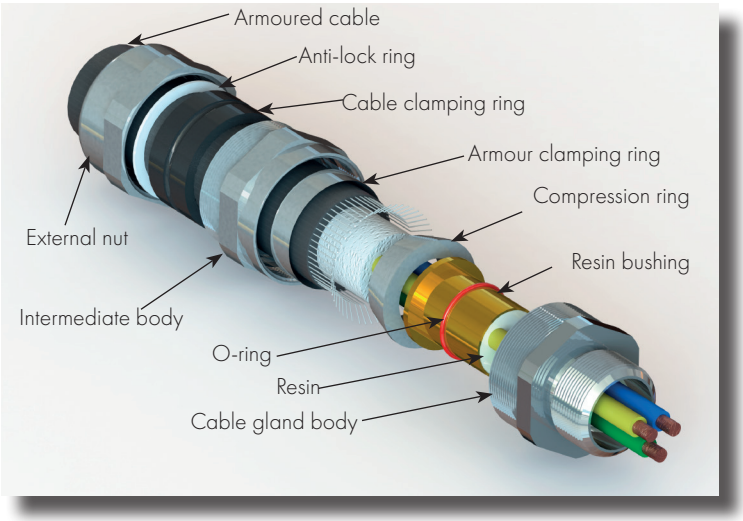
** Dimensions with threaded: NPT / ISO.*
*** At least 20% of the internal section of the bushing must be filled with resin.*
**** Maximum quantity of resin calculated with completely empty bushing.*

Sample order code of the cable gland

NEVB	6S	N	B
MODEL	SIZE	THREAD	MATERIAL



Don't forget to order the resin kit with two-component resin (see p. B.21):
- 25 ml resin bag code BOND-B-25
- 100 ml resin bag code BOND-B-100
- 40 ml cartridge + mixing nozzle code BOND-C (manual dispenser supplied as an option code DISP-C)



TECHNICAL NOTES:

- *Silicone o-rings are supplied for cylindrical threads (ISO metric) for the pre-assembled IP seal on the cable gland.*
- *The ISO7/1 thread version is available upon request (sample code NEVB1B).*
- *Also available in stainless steel AISI 316 (sample code NEVB1**S**).*
- *Other materials on request.*
- *For "Ex i" intrinsic safety version, RAL 5015 blue nut (sample code NEVB1**IA**).*

Cable glands series NAVP in polyamide for non-armoured cable

NAVP series cable glands in polyamide with ISO thread are used in hazardous areas to allow direct insertions of non-armoured cables into Ex e (NAVP..IXE) or Ex i (NAVP..IXI) equipment or junction boxes.
They can be installed easily, they are strikes resistant until 7J and they ensure Ex e and IP protection on the cable external sheath.



NAVP assembly instructions video

Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex eb IIC Gb Ex tb IIIC Db IP66/68*	
Certification:	ATEX IMQ 16 ATEX 005X	
	IECEx IECEx IMQ 15.0009X	
Standards:	CENELEC EN 60079-0: 2012/13, EN 60079-7: 2015, EN 60079-11: 2012, EN 60079-31: 2014 ed alla DIRETTIVA EUROPEA 2014/34/UE IEC 60079-0: 2011, IEC 60079-7: 2015, IEC 60079-11: 2011, IEC 60079-31: 2013 Direttiva RoHS 2011/65/UE	
Operating temperature:	-60°C +70°C	
Degree of protection:	IP66/68 (*50 meters - 30 minutes*)	

Certificates are available on www.elfit.com

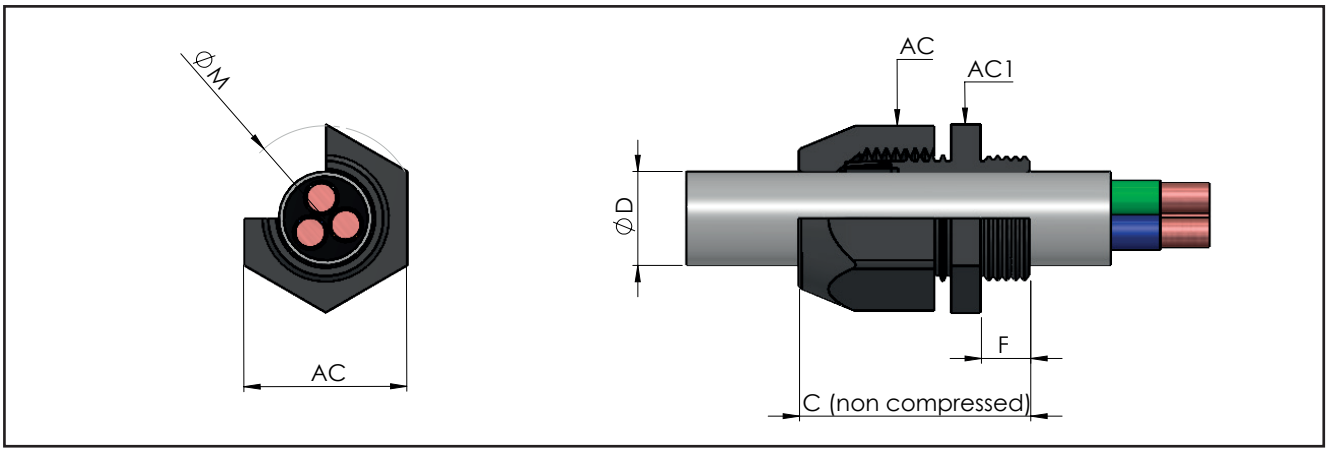
* Ex e IIC cable glands can be used with Ex i circuits. The nut of these cable gland shall be painted blue and marking will not be changed. The nut of these cable gland shall be painted blue and marking will not be changed.

Accessories upon request

Locknut	ISO thread	Code	Material	Plugs for IP protection	ISO thread	Code
	M12x1,5	**DL02IXEP**	Polyamide		M12x1,5	**PT02N**
	M16x1,5	**DL01IXEP**			M16x1,5	**PT01N**
	M20x1,5	**DL1IXEP**			M20x1,5	**PT1N**
	M25x1,5	**DL2IXEP**			M25x1,5	**PT2N**
	M32x1,5	**DL3IXEP**			M32x1,5	**PT3N**
	M40x1,5	**DL4IXEP**			M40x1,5	**PT4N**
	M50x1,5	**DL5IXEP**			M50x1,5	**PT5N**
	M63x1,5	**DL6IXEP**			M63x1,5	**PT6N**

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CABLE GLANDS SELECTION TABLE

Code Polyamide	Method of protection	Thread	Dimensions in mm					Range	Weight
			AC	AC1	ØM	F	C	ØD min-max	Kg
NAVP12IXE	Ex e	M12x1,5	15	15	17	10	32	4 - 6,5	0,004
NAVP16IXE		M16x1,5	22	22	25	15	44,5	6 - 10	0,006
NAVP20IXE		M20x1,5	24	24	28	15	45	7 - 12	0,010
NAVP25IXE-X6DS		M25x1,5	33	33	38	15	50	10 - 18	0,016
NAVP25IXE		M25x1,5	33	33	38	15	50	14 - 18	0,016
NAVP32IXE		M32x1,5	42	42	48	15	55,5	19 - 25	0,042
NAVP40IXE		M40x1,5	53	53	60	18	68	23 - 32	0,074
NAVP50IXE		M50x1,5	60	60	69	18	72	31 - 38	-
NAVP63IXE		M63x1,5	65	65	75	18	72	35 - 44	-
NAVP12IXI	Ex i	M12x1,5	15	15	17	10	32	4 - 6,5	0,004
NAVP16IXI		M16x1,5	22	22	25	15	44,5	6 - 10	0,006
NAVP20IXI		M20x1,5	24	24	28	15	45	7 - 12	0,010
NAVP25IXI		M25x1,5	33	33	38	15	50	14 - 18	0,016
NAVP32IXI		M32x1,5	42	42	48	15	55,5	19 - 25	0,042
NAVP40IXI		M40x1,5	53	53	60	18	68	23 - 32	0,074
NAVP50IXI		M50x1,5	60	60	69	18	72	31 - 38	-
NAVP63IXI		M63x1,5	65	65	75	18	72	35 - 44	-

Example of Order Code

NAVP	16	I	XE
MODEL	SIZE	ISO THREADING	METHOD OF PROTECTION Ex e

TECHNICAL NOTES:

- *Silicone gaskets*
- *Color of cable gland black RAL 9005 (Ex e) or blue RAL 5015 (Ex i)*
- *Strikes resistant 7J*



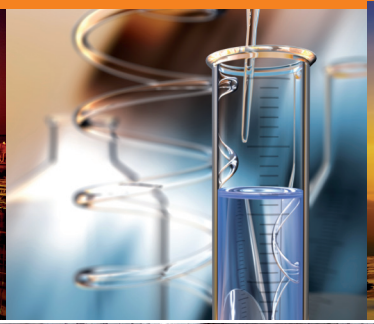
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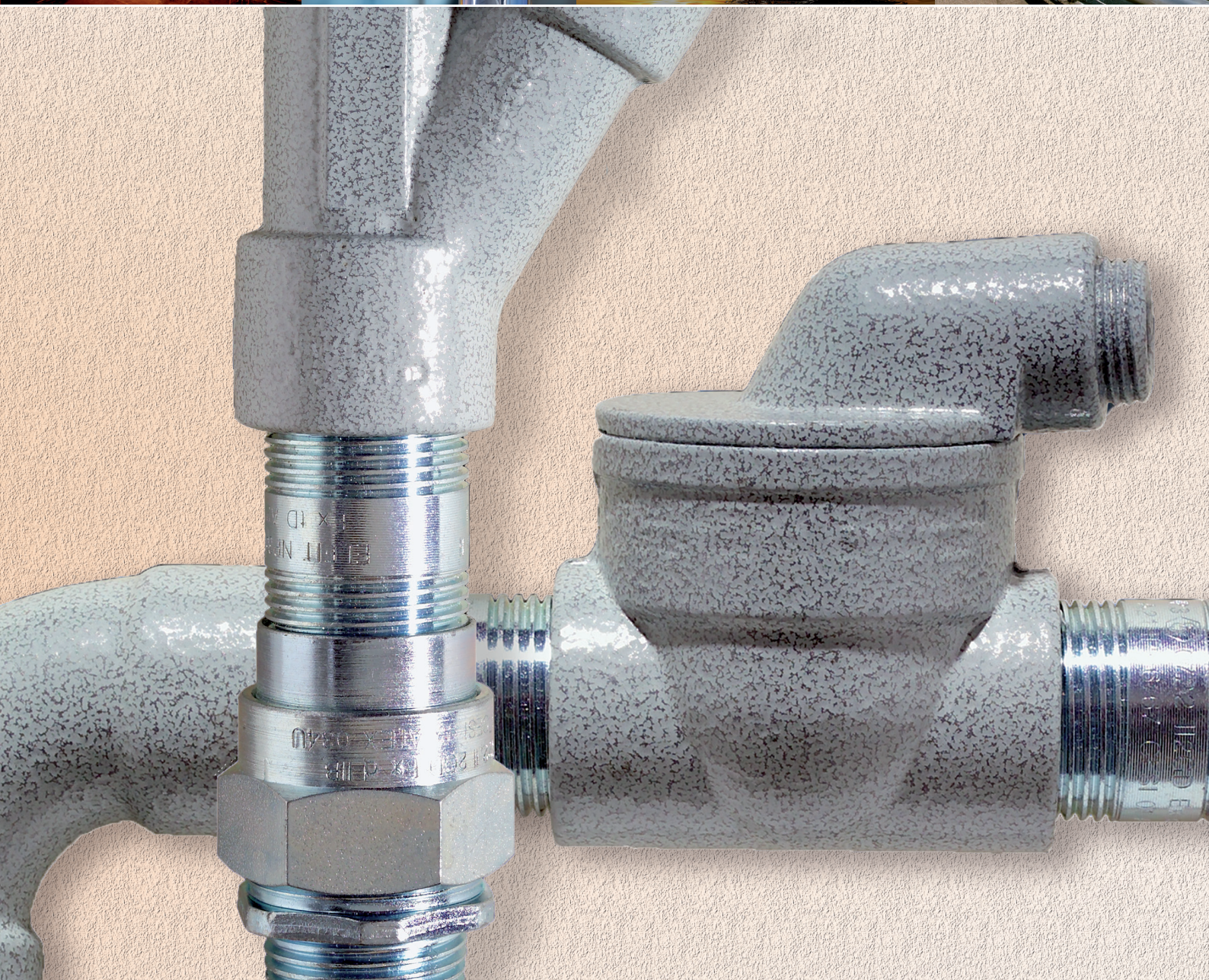
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ELectrical FITtings

Electrical fittings for electrical plants





BMF series three pieces unions for IIB gas group enable an independent rotation and the connection between pipes, enclosures or different equipment.



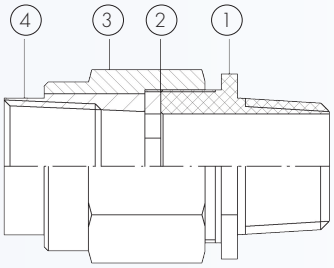
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIB Gb Ex tb IIIC Db IP66/67 (B..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
BMF...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +60°C
BMF...S	Stainless steel **(S)**	Silicone	-60°C +60°C

Certificates are available on www.elfit.com

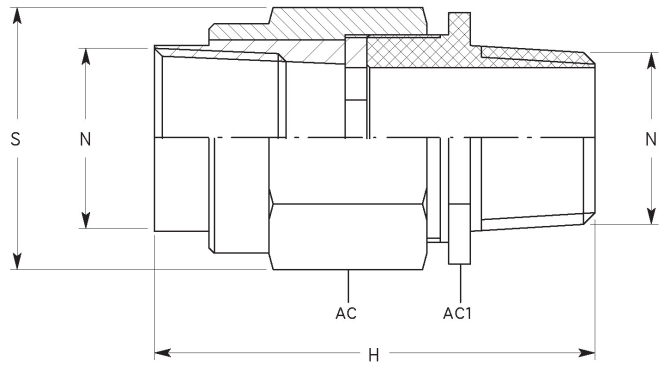
COMPOSITION OF STANDARD UNION



1. Male body
2. Gasket
3. Nut
4. Female threaded bushing

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www.elfit.com



UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
BMF1G	1/2" ISO7/1	60	35	30	27	0,150
BMF2G	3/4" ISO7/1	61	40	35	32	0,185
BMF3G	1" ISO7/1	71,5	48	42	40	0,300
BMF4G	1 ¼" ISO7/1	86	60	55	59	0,760
BMF5G	1 ½" ISO7/1	86,5	75	70	67	1,000
BMF6G	2" ISO7/1	88	90	84	77	1,400
BMF7G	2 ½" ISO7/1	107	117	108	99	2,350
BMF8G	3" ISO7/1	109	132	121	108	2,800
BMF10G	4" ISO7/1	116,5	152	145	135	4,160
BMF1NG	1/2" NPT	60	35	30	27	0,150
BMF2NG	3/4" NPT	61	40	35	32	0,185
BMF3NG	1" NPT	71,5	48	42	40	0,300
BMF4NG	1 ¼" NPT	86	60	55	59	0,760
BMF5NG	1 ½" NPT	86,5	75	70	67	1,000
BMF6NG	2" NPT	88	90	84	77	1,400
BMF7NG	2 ½" NPT	107	117	108	99	2,350
BMF8NG	3" NPT	109	132	121	108	2,800
BMF10NG	4" NPT	116,5	152	145	135	4,160
BMF1IG	M20x1,5	60	35	30	27	0,150
BMF2IG	M25x1,5	61	40	35	32	0,185
BMF3IG	M32x1,5	71,5	48	42	40	0,300
BMF4IG	M40x1,5	86	60	55	59	0,760
BMF5IG	M50x1,5	86,5	75	70	67	1,000
BMF6IG	M63x1,5	88	90	84	77	1,400
BMF7IG	M75x1,5	107	117	108	99	2,350
BMF8IG	M90x1,5	109	132	121	108	2,800
BMF10IG	M100x1,5	116,5	152	145	135	4,160

Order code example

BMF	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code BMF1**S**)*
- *Available also upon request in nickel-plated brass (example code BMF1**B**)*
- *It is possible supply mixed thread, of the same equivalence, adding code for female thread (sample code for fitting in galvanised steel Male 1"NPT - Female M32x1,5: BMF3NIG)*

BFF series three pieces unions for IIB gas group enable an independent rotation and connection between pipes, enclosures or different equipment.



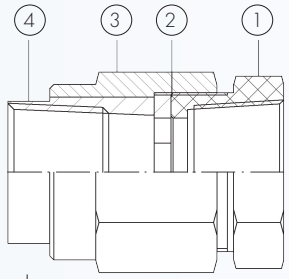
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIB Gb Ex tb IIIC Db IP66/67 (B..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
BFF...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +60°C
BFF...S	Stainless steel **(S)**	Silicone	-60°C +60°C

Certificates are available on www.elfit.com

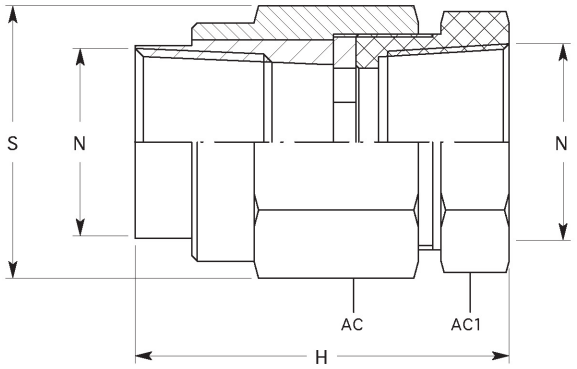
COMPOSITION OF STANDARD UNION



1. Female body
2. Gasket
3. Nut
4. Female threaded bushing

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UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
BFF1G	1/2" ISO7/1	47	35	30	27	0,125
BFF2G	3/4" ISO7/1	47	40	35	32	0,150
BFF3G	1" ISO7/1	57	48	42	40	0,235
BFF4G	1 ¼" ISO7/1	63	60	55	59	0,640
BFF5G	1 ½" ISO7/1	63	75	70	67	0,960
BFF6G	2" ISO7/1	64	90	84	77	1,220
BFF7G	2 ½" ISO7/1	71	117	108	99	2,240
BFF8G	3" ISO7/1	71	132	121	108	2,600
BFF10G	4" ISO7/1	77	152	145	135	3,700
BFF1NG	1/2" NPT	57	35	30	27	0,125
BFF2NG	3/4" NPT	57	40	35	32	0,150
BFF3NG	1" NPT	67	48	42	40	0,235
BFF4NG	1 ¼" NPT	63	60	55	59	0,640
BFF5NG	1 ½" NPT	63	75	70	67	0,960
BFF6NG	2" NPT	64	90	84	77	1,220
BFF7NG	2 ½" NPT	71	117	108	99	2,240
BFF8NG	3" NPT	71	132	121	108	2,600
BFF10NG	4" NPT	77	152	145	135	3,700
BFF1IG	M20x1,5	47	35	30	27	0,125
BFF2IG	M25x1,5	47	40	35	32	0,150
BFF3IG	M32x1,5	52	48	42	40	0,235
BFF4IG	M40x1,5	63	60	55	59	0,640
BFF5IG	M50x1,5	63	75	70	67	0,960
BFF6IG	M63x1,5	64	90	84	77	1,220
BFF7IG	M75x1,5	71	117	108	99	2,240
BFF8IG	M90x1,5	71	132	121	108	2,600
BFF10IG	M100x1,5	77	152	145	135	3,700

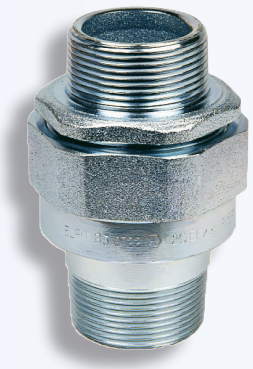
Order code example

BFF	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code BFF1**S**)*
- *Available also upon request in nickel-plated brass (example code BFF1**B**)*

BMM series three pieces unions for IIB gas group enable an independent rotation and connection between pipes, enclosures or different equipment.



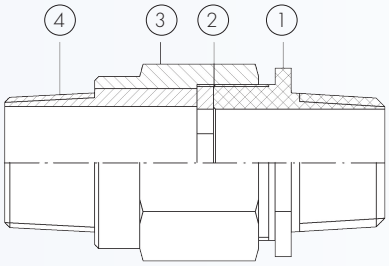
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIB Gb Ex tb IIIC Db IP66/67 (B..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
BMM...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +60°C
BMM...S	Stainless steel **(S)**	Silicone	-60°C +60°C

Certificates are available on www.elfit.com

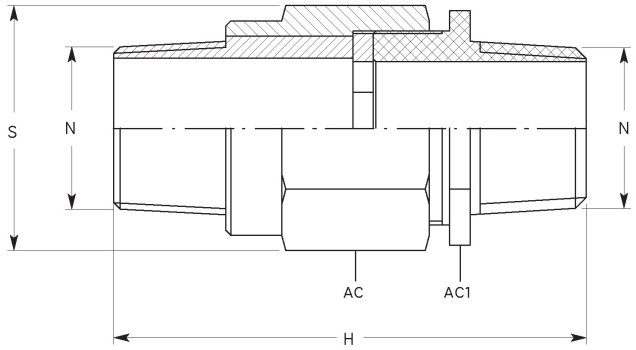
COMPOSITION OF STANDARD UNION



1. Male body
2. Gasket
3. Nut
4. Male threaded bushing

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UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
BMM1G	1/2" ISO7/1	89	35	30	27	0,125
BMM2G	3/4" ISO7/1	87,5	40	35	32	0,150
BMM3G	1" ISO7/1	100,5	48	42	40	0,235
BMM4G	1 ¼" ISO7/1	111	60	55	59	0,640
BMM5G	1 ½" ISO7/1	115	75	70	67	0,960
BMM6G	2" ISO7/1	113	90	84	77	1,220
BMM7G	2 ½" ISO7/1	128	117	108	99	2,240
BMM8G	3" ISO7/1	130	132	121	108	2,600
BMM10G	4" ISO7/1	144	152	145	135	3,700
BMM1NG	1/2" NPT	89	35	30	27	0,125
BMM2NG	3/4" NPT	87,5	40	35	32	0,150
BMM3NG	1" NPT	100,5	48	42	40	0,235
BMM4NG	1 ¼" NPT	111	60	55	59	0,640
BMM5NG	1 ½" NPT	115	75	70	67	0,960
BMM6NG	2" NPT	113	90	84	77	1,220
BMM7NG	2 ½" NPT	128	117	108	99	2,240
BMM8NG	3" NPT	130	132	121	108	2,600
BMM10NG	4" NPT	144	152	145	135	3,700
BMM1IG	M20x1,5	89	35	30	27	0,125
BMM2IG	M25x1,5	87,5	40	35	32	0,150
BMM3IG	M32x1,5	100,5	48	42	40	0,235
BMM4IG	M40x1,5	111	60	55	59	0,640
BMM5IG	M50x1,5	115	75	70	67	0,960
BMM6IG	M63x1,5	113	90	84	77	1,220
BMM7IG	M75x1,5	128	117	108	99	2,240
BMM8IG	M90x1,5	130	132	121	108	2,600
BMM10IG	M100x1,5	144	152	145	135	3,700

Order code example

BMM	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code BMM1**S**)*
- *Available also upon request in nickel-plated brass (example code BMM1**B**)*

RBMF three pieces unions Fixed male / Turning Female - IIB high temperatures

RBMF series three pieces unions suitable for IIB gas group and extreme temperatures enable an independent rotation and connection between pipes, enclosures or different equipment.



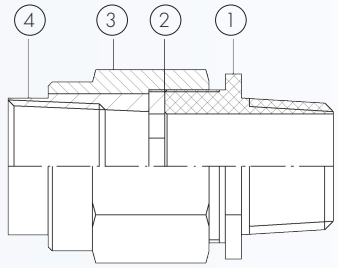
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIB Gb Ex tb IIIC Db IP66/67 (RB..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
RBMF...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +150°C
RBMF...S	Stainless steel **(S)**	Silicone	-60°C +150°C

Certificates are available on www.elfit.com

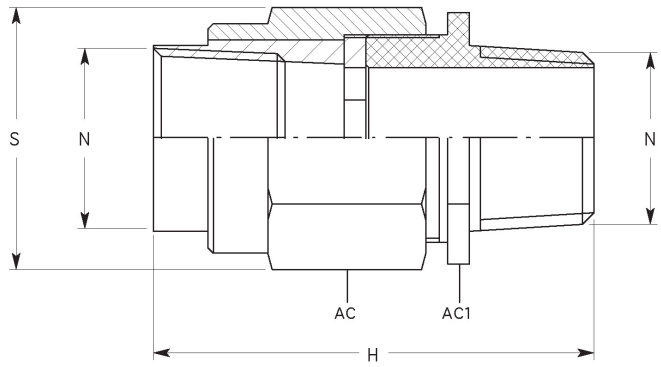
COMPOSITION OF STANDARD UNION



1. Male body
2. Gasket
3. Nut
4. Female threaded bushing

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www.elfit.com



UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
RBMF1G	1/2" ISO7/1	71	35	30	27	0,150
RBMF2G	3/4" ISO7/1	72	40	35	32	0,185
RBMF3G	1" ISO7/1	82,5	48	42	40	0,300
RBMF4G	1 ¼" ISO7/1	86	60	55	59	0,760
RBMF5G	1 ½" ISO7/1	86,5	75	70	67	1,000
RBMF6G	2" ISO7/1	88	90	84	77	1,400
RBMF7G	2 ½" ISO7/1	107	117	108	99	2,350
RBMF8G	3" ISO7/1	109	132	121	108	2,800
RBMF10G	4" ISO7/1	116,5	152	145	135	4,160
RBMF1NG	1/2" NPT	71	35	30	27	0,150
RBMF2NG	3/4" NPT	72	40	35	32	0,185
RBMF3NG	1" NPT	82,5	48	42	40	0,300
RBMF4NG	1 ¼" NPT	86	60	55	59	0,760
RBMF5NG	1 ½" NPT	86,5	75	70	67	1,000
RBMF6NG	2" NPT	88	90	84	77	1,400
RBMF7NG	2 ½" NPT	107	117	108	99	2,350
RBMF8NG	3" NPT	109	132	121	108	2,800
RBMF10NG	4" NPT	116,5	152	145	135	4,160
RBMF1IG	M20x1,5	71	35	30	27	0,150
RBMF2IG	M25x1,5	72	40	35	32	0,185
RBMF3IG	M32x1,5	82,5	48	42	40	0,300
RBMF4IG	M40x1,5	86	60	55	59	0,760
RBMF5IG	M50x1,5	86,5	75	70	67	1,000
RBMF6IG	M63x1,5	88	90	84	77	1,400
RBMF7IG	M75x1,5	107	117	108	99	2,350
RBMF8IG	M90x1,5	109	132	121	108	2,800
RBMF10IG	M100x1,5	116,5	152	145	135	4,160

Order code example

RBMF	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code RBMF1**S**)*
- *Available also in nickel-plated brass (example code RBMF1**B**)*
- *It is possible supply mixed thread, of the same equivalence (sample code for fitting in galvanised steel Male 1"NPT - Female M32x1,5: RBMF3NG)*

RBFF series three pieces unions suitable for IIB gas group and extreme temperatures enable an independent rotation and connection between pipes, enclosures or different instruments.



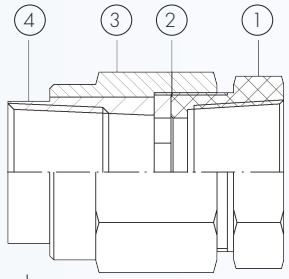
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIB Gb Ex tb IIIC Db IP66/67 (RB..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
RBFF...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +150°C
RBFF...S	Stainless steel **(S)**	Silicone	-60°C +150°C

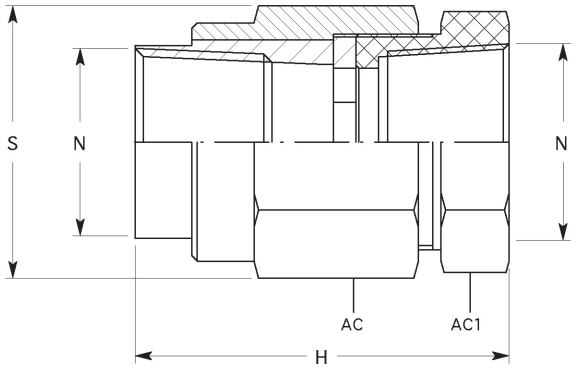
Certificates are available on www.elfit.com

COMPOSITION OF STANDARD UNION



1. Female body
2. Gasket
3. Nut
4. Female threaded bushing

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www.elfit.com



UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
RBFF1G	1/2" ISO7/1	57	35	30	27	0,125
RBFF2G	3/4" ISO7/1	57	40	35	32	0,150
RBFF3G	1" ISO7/1	67	48	42	40	0,235
RBFF4G	1 ¼" ISO7/1	63	60	55	59	0,640
RBFF5G	1 ½" ISO7/1	63	75	70	67	0,960
RBFF6G	2" ISO7/1	64	90	84	77	1,220
RBFF7G	2 ½" ISO7/1	71	117	108	99	2,240
RBFF8G	3" ISO7/1	71	132	121	108	2,600
RBFF10G	4" ISO7/1	77	152	145	135	3,700
RBFF1NG	1/2" NPT	57	35	30	27	0,125
RBFF2NG	3/4" NPT	57	40	35	32	0,150
RBFF3NG	1" NPT	67	48	42	40	0,235
RBFF4NG	1 ¼" NPT	63	60	55	59	0,640
RBFF5NG	1 ½" NPT	63	75	70	67	0,960
RBFF6NG	2" NPT	64	90	84	77	1,220
RBFF7NG	2 ½" NPT	71	117	108	99	2,240
RBFF8NG	3" NPT	71	132	121	108	2,600
RBFF10NG	4" NPT	77	152	145	135	3,700
RBFF1IG	M20x1,5	57	35	30	27	0,125
RBFF2IG	M25x1,5	57	40	35	32	0,150
RBFF3IG	M32x1,5	67	48	42	40	0,235
RBFF4IG	M40x1,5	63	60	55	59	0,640
RBFF5IG	M50x1,5	63	75	70	67	0,960
RBFF6IG	M63x1,5	64	90	84	77	1,220
RBFF7IG	M75x1,5	71	117	108	99	2,240
RBFF8IG	M90x1,5	71	132	121	108	2,600
RBFF10IG	M100x1,5	77	152	145	135	3,700

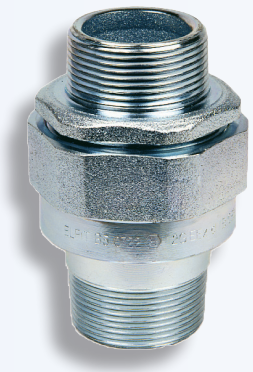
Order code example

RBFF	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code RBFF1**S**)*
- *Available also in nickel-plated brass (example code RBFF1**B**)*

RBMM series three pieces unions suitable for IIB gas group and extreme temperatures enable an independent rotation and connection between pipes, enclosures or different instruments.



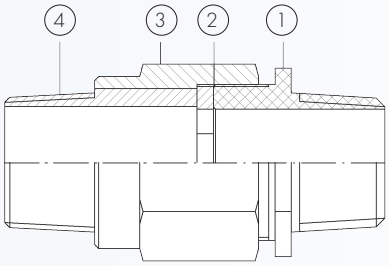
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIB Gb Ex tb IIIC Db IP66/67 (RB..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
RBMM...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +150°C
RBMM...S	Stainless steel **(S)**	Silicone	-60°C +150°C

Certificates are available on www.elfit.com

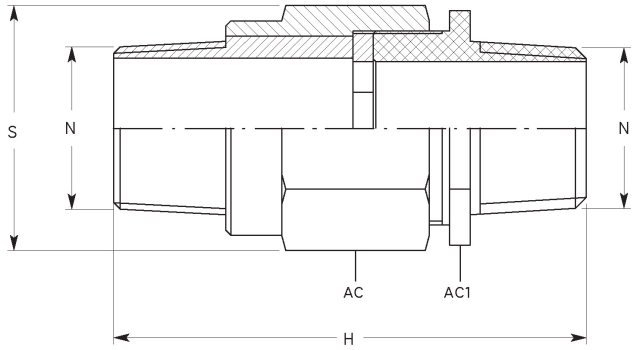
COMPOSITION OF STANDARD UNION



1. Male body
2. Gasket
3. Nut
4. Male threaded bushing

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www.elfit.com



UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
RBMM1G	1/2" ISO7/1	99	35	30	27	0,125
RBMM2G	3/4" ISO7/1	97,5	40	35	32	0,150
RBMM3G	1" ISO7/1	110,5	48	42	40	0,235
RBMM4G	1 ¼" ISO7/1	121	60	55	59	0,640
RBMM5G	1 ½" ISO7/1	125	75	70	67	0,960
RBMM6G	2" ISO7/1	123	90	84	77	1,220
RBMM7G	2 ½" ISO7/1	143	117	108	99	2,240
RBMM8G	3" ISO7/1	145	132	121	108	2,600
RBMM10G	4" ISO7/1	144	152	145	135	3,700
RBMM1NG	1/2" NPT	99	35	30	27	0,125
RBMM2NG	3/4" NPT	97,5	40	35	32	0,150
RBMM3NG	1" NPT	110,5	48	42	40	0,235
RBMM4NG	1 ¼" NPT	121	60	55	59	0,640
RBMM5NG	1 ½" NPT	125	75	70	67	0,960
RBMM6NG	2" NPT	123	90	84	77	1,220
RBMM7NG	2 ½" NPT	143	117	108	99	2,240
RBMM8NG	3" NPT	145	132	121	108	2,600
RBMM10NG	4" NPT	144	152	145	135	3,700
RBMM1IG	M20x1,5	99	35	30	27	0,125
RBMM2IG	M25x1,5	97,5	40	35	32	0,150
RBMM3IG	M32x1,5	110,5	48	42	40	0,235
RBMM4IG	M40x1,5	121	60	55	59	0,640
RBMM5IG	M50x1,5	125	75	70	67	0,960
RBMM6IG	M63x1,5	123	90	84	77	1,220
RBMM7IG	M75x1,5	143	117	108	99	2,240
RBMM8IG	M90x1,5	145	132	121	108	2,600
RBMM10IG	M100x1,5	144	152	145	135	3,700

Order code example

RBMM	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code RBMM1**S**)*
- *Available also in nickel-plated brass (example code RBMM1**B**)*

RMF series three pieces unions for IIC gas group enable an independent rotation and connection between pipes, enclosures or different instruments.



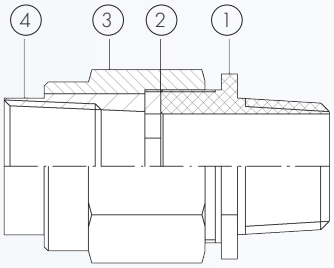
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67 (R..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
RMF...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +60°C
RMF...S	Stainless steel **(S)**	Silicone	-60°C +60°C

Certificates are available on www.elfit.com

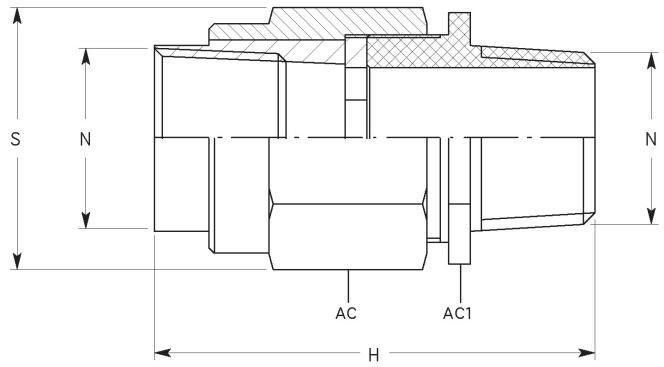
COMPOSITION OF STANDARD UNION



1. Male body
2. Gasket
3. Nut
4. Female threaded bushing

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www.elfit.com



UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
RMF1G	1/2" ISO7/1	71	35	30	27	0,200
RMF2G	3/4" ISO7/1	71	40	35	32	0,230
RMF3G	1" ISO7/1	82	48	42	40	0,380
RMF4G	1 ¼" ISO7/1	87	60	55	59	0,940
RMF5G	1 ½" ISO7/1	87	75	70	67	1,125
RMF6G	2" ISO7/1	87	90	84	77	1,540
RMF7G	2 ½" ISO7/1	98	117	108	99	3,125
RMF8G	3" ISO7/1	98	132	121	108	3,990
RMF10G	4" ISO7/1	112	152	145	135	4,160
RMF1NG	1/2" NPT	71	35	30	27	0,200
RMF2NG	3/4" NPT	71	40	35	32	0,230
RMF3NG	1" NPT	82	48	42	40	0,380
RMF4NG	1 ¼" NPT	87	60	55	59	0,940
RMF5NG	1 ½" NPT	87	75	70	67	1,125
RMF6NG	2" NPT	87	90	84	77	1,540
RMF7NG	2 ½" NPT	98	117	108	99	3,125
RMF8NG	3" NPT	98	132	121	108	3,990
RMF10NG	4" NPT	112	152	145	135	4,160
RMF1IG	M20x1,5	71	35	30	27	0,200
RMF2IG	M25x1,5	71	40	35	32	0,230
RMF3IG	M32x1,5	82	48	42	40	0,380
RMF4IG	M40x1,5	87	60	55	59	0,940
RMF5IG	M50x1,5	87	75	70	67	1,125
RMF6IG	M63x1,5	87	90	84	77	1,540
RMF7IG	M75x1,5	98	117	108	99	3,125
RMF8IG	M90x1,5	98	132	121	108	3,990
RMF10IG	M100x1,5	112	152	145	135	4,160

Order code example

RMF	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code RMF1**S**)*
- *Available also in nickel-plated brass (example code RMF1**B**)*
- *It is possible supply mixed thread, of the same equivalence (sample code for fitting in galvanised steel Male 1"NPT - Female M32x1,5: RMF3NIG)*

RFF series three pieces unions for IIC gas group enable an independent rotation and connection between pipes, enclosures or different equipment.



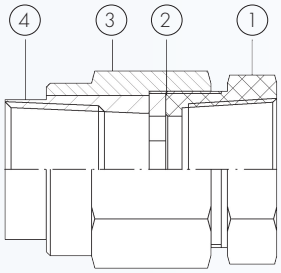
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67 (R..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
RFF...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +60°C
RFF...S	Stainless steel **(S)**	Silicone	-60°C +60°C

Certificates are available on www.elfit.com

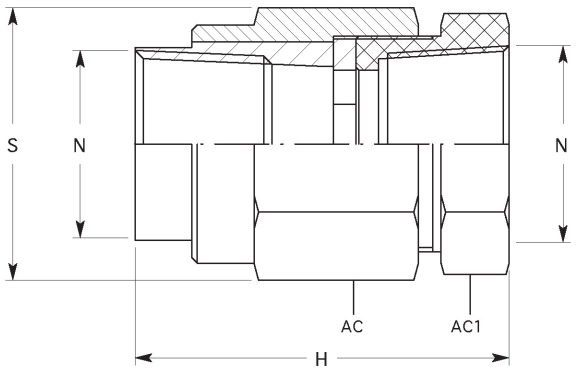
COMPOSITION OF STANDARD UNION



1. Female body
2. Gasket
3. Nut
4. Female threaded bushing

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www.elfit.com



UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
RFF1G	1/2" ISO7/1	58	35	30	27	0,170
RFF2G	3/4" ISO7/1	58	40	35	32	0,200
RFF3G	1" ISO7/1	68	48	42	40	0,315
RFF4G	1 ¼" ISO7/1	63	60	55	59	0,820
RFF5G	1 ½" ISO7/1	66	75	70	67	1,020
RFF6G	2" ISO7/1	66	90	84	77	1,390
RFF7G	2 ½" ISO7/1	71	117	108	99	2,520
RFF8G	3" ISO7/1	71	132	121	108	2,900
RFF10G	4" ISO7/1	86	152	145	135	3,700
RFF1NG	1/2" NPT	58	35	30	27	0,170
RFF2NG	3/4" NPT	58	40	35	32	0,200
RFF3NG	1" NPT	68	48	42	40	0,315
RFF4NG	1 ¼" NPT	63	60	55	59	0,820
RFF5NG	1 ½" NPT	66	75	70	67	1,020
RFF6NG	2" NPT	66	90	84	77	1,390
RFF7NG	2 ½" NPT	71	117	108	99	2,520
RFF8NG	3" NPT	71	132	121	108	2,900
RFF10NG	4" NPT	86	152	145	135	3,700
RFF1IG	M20x1,5	58	35	30	27	0,170
RFF2IG	M25x1,5	58	40	35	32	0,200
RFF3IG	M32x1,5	68	48	42	40	0,315
RFF4IG	M40x1,5	63	60	55	59	0,820
RFF5IG	M50x1,5	66	75	70	67	1,020
RFF6IG	M63x1,5	66	90	84	77	1,390
RFF7IG	M75x1,5	71	117	108	99	2,520
RFF8IG	M90x1,5	71	132	121	108	2,900
RFF10IG	M100x1,5	86	152	145	135	3,700

Order code example

RFF	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code RFF1**S**)*
- *Available also in nickel-plated brass (example code RFF1**B**)*

RMM series three pieces unions for IIC gas group enable an independent rotation and connection between pipes, enclosures or different equipment.



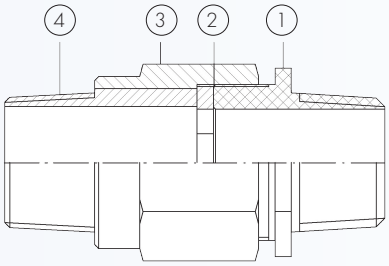
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67 (R..)	
Certification:	ATEX CESI 99 ATEX 034U	
	IECEx IECEx CES 10.0002U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Three pieces unions series	Materials	Gaskets	Ambient temperature
RMM...	Galvanised steel **(G)**, Nickel-plated brass **(B)**	Silicone	-20°C +60°C
RMM...S	Stainless steel **(S)**	Silicone	-60°C +60°C

Certificates are available on www.elfit.com

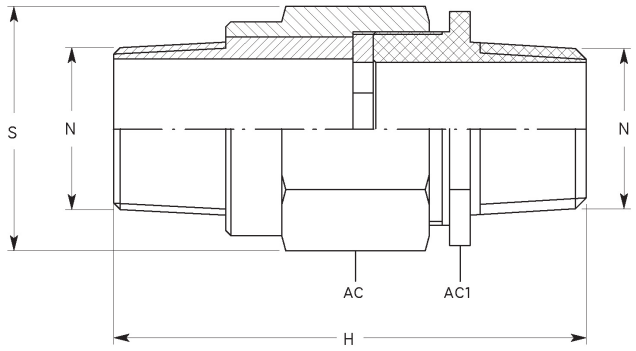
COMPOSITION OF STANDARD UNION



1. Male body
2. Gasket
3. Nut
4. Male threaded bushing

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www.elfit.com



UNIONS SELECTION TABLE

Code In galvanised steel	Thread N	Dimensions in mm				Weight
		H	S	AC	AC1	Kg
RMM1G	1/2" ISO7/1	97	35	30	27	0,220
RMM2G	3/4" ISO7/1	97	40	35	32	0,290
RMM3G	1" ISO7/1	110	48	42	40	0,425
RMM4G	1 ¼" ISO7/1	125	60	55	59	1,200
RMM5G	1 ½" ISO7/1	125	75	70	67	1,500
RMM6G	2" ISO7/1	125	90	84	77	1,900
RMM7G	2 ½" ISO7/1	142	117	108	99	4,000
RMM8G	3" ISO7/1	142	132	121	108	4,000
RMM10G	4" ISO7/1	150	152	145	135	5,160
RMM1NG	1/2" NPT	97	35	30	27	0,220
RMM2NG	3/4" NPT	97	40	35	32	0,290
RMM3NG	1" NPT	110	48	42	40	0,425
RMM4NG	1 ¼" NPT	125	60	55	59	1,200
RMM5NG	1 ½" NPT	125	75	70	67	1,500
RMM6NG	2" NPT	125	90	84	77	1,900
RMM7NG	2 ½" NPT	142	117	108	99	4,000
RMM8NG	3" NPT	142	132	121	108	4,000
RMM10NG	4" NPT	150	152	145	135	5,160
RMM1IG	M20x1,5	97	35	30	27	0,220
RMM2IG	M25x1,5	97	40	35	32	0,290
RMM3IG	M32x1,5	110	48	42	40	0,425
RMM4IG	M40x1,5	125	60	55	59	1,200
RMM5IG	M50x1,5	125	75	70	67	1,500
RMM6IG	M63x1,5	125	90	84	77	1,900
RMM7IG	M75x1,5	142	117	108	99	4,000
RMM8IG	M90x1,5	142	132	121	108	4,000
RMM10IG	M100x1,5	150	152	145	135	5,160

Order code example

RMM	6	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled on the union*
- *Available also in stainless steel (example code RMM1**S**)*
- *Available also in nickel-plated brass (example code RMM1**B**)*

ELFiT® ELectrical FITtings

Reducers and adaptors are used to join instruments, enclosures, pipes and hubs of different diameter and threads.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification	ATEX CESI 02 ATEX 049X	
	IECEx IECEx CES 10.0001X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-7: 2006-07, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

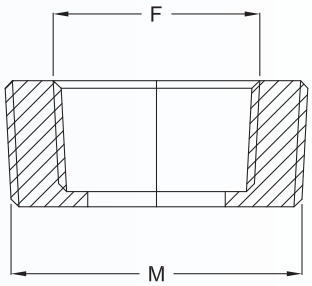
Operating temperature:

Adaptors	Material	Ambient temperature
RE...	Galvanised steel **(G)**	-20°C +80°C
RE...	Nickel-plated brass **(B)**, Aluminium alloy **(A)**	-40°C +150°C
RE...	Stainless steel **(S)**	-60°C +150°C

Certificates are available on www.elfit.com

SELECTION TABLE OF STANDARD ADAPTORS

Thread ISO7/1		Ø FEMALE F								
		1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2"	2 ½"
Ø MALE M	3/8"	RE3814								
	1/2"	RE114	RE138							
	3/4"	RE214	RE238	RE21						
	1"	RE314	RE338	RE31	RE32					
	1 ¼"	RE414	RE438	RE41	RE42	RE43				
	1 ½"	RE514	RE538	RE51	RE52	RE53	RE54			
	2"	RE614	RE638	RE61	RE62	RE63	RE64	RE65		
	2 ½"			RE71	RE72	RE73	RE74	RE75	RE76	
	3"			RE81	RE82	RE83	RE84	RE85	RE86	RE87



Order code example of standard adaptors

RE	31	G
MODEL	SIZE	MATERIAL

TECHNICAL NOTES:

- *Available with other threads (example code RE31**N**G)*
- *Available in different materials (example code RE31**A**)*
- *Size over 3" upon request*

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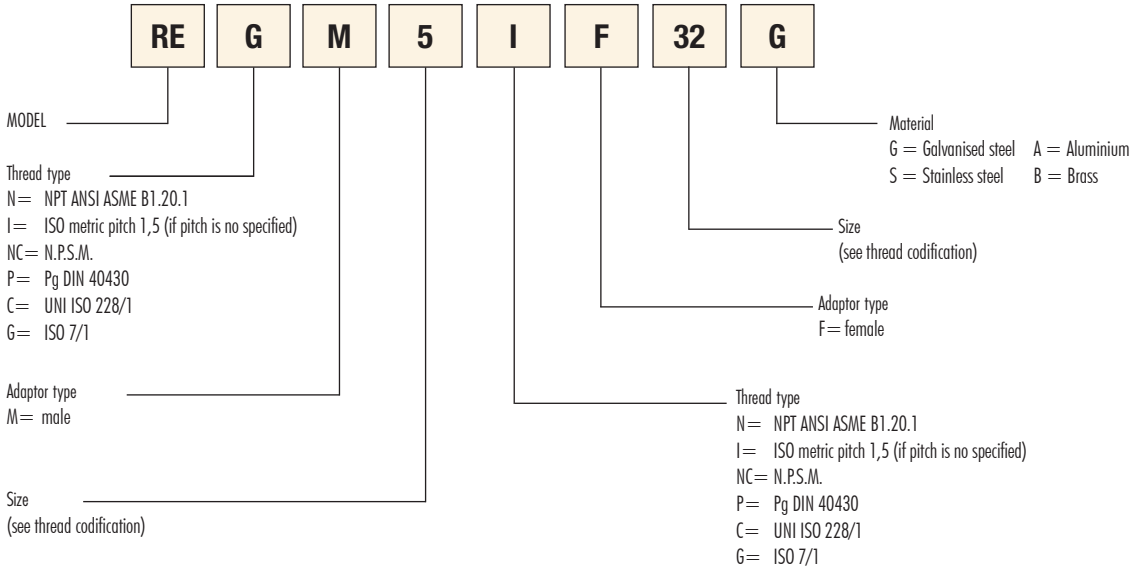
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SPECIAL ADAPTORS (MIXED THREADS)

Order code example

(Adaptor type RE, male 1 ½" Gk, female M32x1,5, galvanised steel)



THREAD CODIFICATION

NPT, N.P.S.M., UNI ISO 228/1, ISO7/1

02	01	1	2	3	4	5	6	7	8	9	10	12	14
1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2	2 ½"	3"	3 ½"	4"	5"	6"

ISO Metric

12	16	20	25	32	40	50	63	75	90	100	63X2	75X2	90X2
M12x1,5	M16x1,5	M20x1,5	M25x1,5	M32x1,5	M40x1,5	M50x1,5	M63x1,5	M75x1,5	M90x1,5	M100x1,5	M63x2	M75x2	M90x2

Pg DIN 40430

2	3	4	5	6	7	8	9	10
PG9	PG11	PG13,5	PG16	PG21	PG29	PG36	PG42	PG48

ELFiT® ELectrical FITtings

Reducers and adaptors are used to join instruments, enclosures, pipes and hubs of different diameter and threads.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification	ATEX CESI 02 ATEX 049X	
	IECEx IECEx CES 10.0001X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-7: 2006-07, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

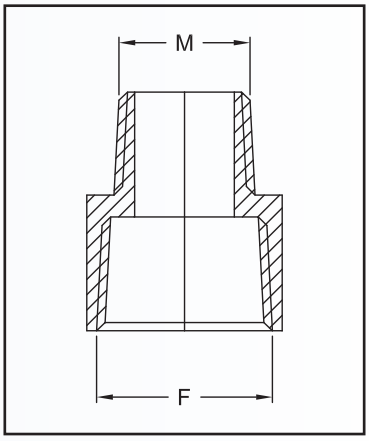
Operating temperature:

Adaptors	Material	Ambient temperature
REB...	Galvanised steel **(G)**	-20°C +80°C
REB...	Nickel-plated brass **(B)**, Aluminium alloy **(A)**	-40°C +150°C
REB...	Stainless steel **(S)**	-60°C +150°C

Certificates are available on www.elfit.com

SELECTION TABLE OF STANDARD ADAPTORS

Thread ISO7/1		Ø MALE M								
		1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2"	2 ½"
Ø FEMALE F	3/8"	REB3814								
	1/2"	REB114	REB138							
	3/4"	REB214	REB238	REB21						
	1"	REB314	REB338	REB31	REB32					
	1 ¼"	REB414	REB438	REB41	REB42	REB43				
	1 ½"	REB514	REB538	REB51	REB52	REB53	REB54			
	2"	REB614	REB638	REB61	REB62	REB63	REB64	REB65		
	2 ½"			REB71	REB72	REB73	REB74	REB75	REB76	
	3"			REB81	REB82	REB83	REB84	REB85	REB86	REB87



Order code example of standard adaptors

REB 31 G

MODEL SIZE MATERIAL

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled*
- *Available with other threads (example code REB31**N**G)*
- *Available in different materials (example code REB31**A**)*

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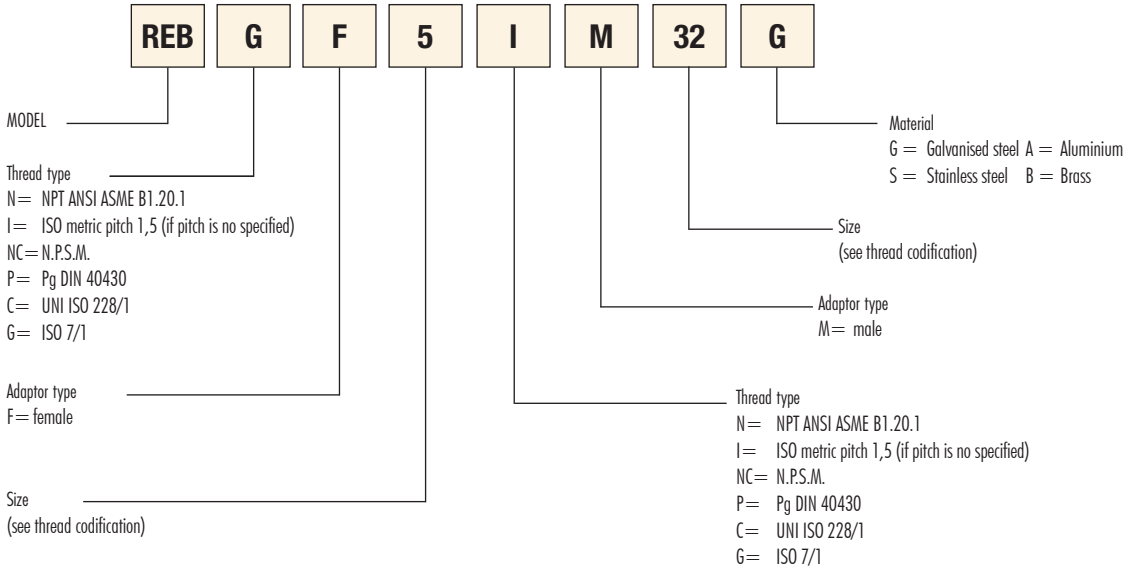
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SPECIAL ADAPTORS (MIXED THREADS)

Order code example

(Adaptor type REB, female 1 ½" Gk, male M32x1,5, galvanised steel)



THREAD CODIFICATION

NPT, N.P.S.M., UNI ISO 228/1, ISO7/1

02	01	1	2	3	4	5	6	7	8	9	10	12	14
1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2	2 ½"	3"	3 ½"	4"	5"	6"

ISO Metric

12	16	20	25	32	40	50	63	75	90	100	63X2	75X2	90X2
M12x1,5	M16x1,5	M20x1,5	M25x1,5	M32x1,5	M40x1,5	M50x1,5	M63x1,5	M75x1,5	M90x1,5	M100x1,5	M63x2	M75x2	M90x2

Pg DIN 40430

2	3	4	5	6	7	8	9	10
PG9	PG11	PG13,5	PG16	PG21	PG29	PG36	PG42	PG48

Adaptors REM female - female

Reducers and adaptors are used to join instruments, enclosures, pipes and hubs of different diameter and threads.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification	ATEX CESI 02 ATEX 049X	
	IECEx IECEx CES 10.0001X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-7: 2006-07, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

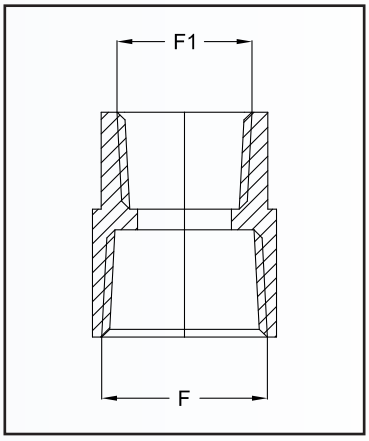
Operating temperature:

Adaptors	Material	Ambient temperature
REM...	Galvanised steel **(G)**	-20°C +80°C
REM...	Nickel-plated brass **(B)**, Aluminium alloy **(A)**	-40°C +150°C
REM...	Stainless steel **(S)**	-60°C +150°C

Certificates are available on www.elfit.com

SELECTION TABLE OF STANDARD ADAPTORS

Thread ISO7/1		Ø FEMALE F1								
		1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2"	2 ½"
Ø FEMALE F	3/8"	REM3814								
	1/2"	REM114	REM138							
	3/4"	REM214	REM238	REM21						
	1"	REM314	REM338	REM31	REM32					
	1 ¼"	REM414	REM438	REM41	REM42	REM43				
	1 ½"	REM514	REM538	REM51	REM52	REM53	REM54			
	2"	REM614	REM638	REM61	REM62	REM63	REM64	REM65		
	2 ½"			REM71	REM72	REM73	REM74	REM75	REM76	
	3"			REM81	REM82	REM83	REM84	REM85	REM86	REM87



Order code example of standard adaptors

REM (MODEL) 31 (SIZE) G (MATERIAL)

TECHNICAL NOTES:

- *Available with other threads (example code REM31**N**G)*
- *Available in different materials (example code REM31**A**)*

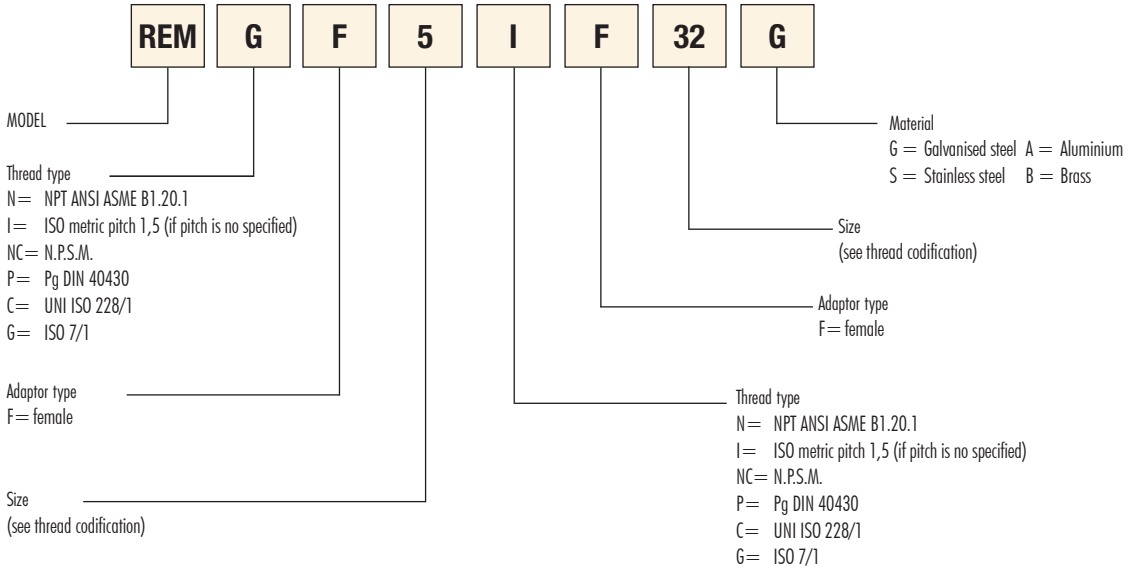
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SPECIAL ADAPTORS (MIXED THREADS)

Order code example

(Adaptor type REM, female 1 ½" Gk, female M32x1,5, galvanised steel)



THREAD CODIFICATION

NPT, N.P.S.M., UNI ISO 228/1, ISO7/1

02	01	1	2	3	4	5	6	7	8	9	10	12	14
1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2	2 ½"	3"	3 ½"	4"	5"	6"

ISO Metric

12	16	20	25	32	40	50	63	75	90	100	63X2	75X2	90X2
M12x1,5	M16x1,5	M20x1,5	M25x1,5	M32x1,5	M40x1,5	M50x1,5	M63x1,5	M75x1,5	M90x1,5	M100x1,5	M63x2	M75x2	M90x2

Pg DIN 40430

2	3	4	5	6	7	8	9	10
PG9	PG11	PG13,5	PG16	PG21	PG29	PG36	PG42	PG48

Adaptors REN male - male

Reducers and adaptors are used to join instruments, enclosures, pipes and hubs of different diameter and threads.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification	ATEX CESI 02 ATEX 049X	
	IECEx IECEx CES 10.0001X	For IEC Ex and others certifications data can be downloaded at www.elfit.com

Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-7: 2006-07, IEC60079-31: 2008 Directive RoHS 2011/65/UE
Degree of protection:	IP66/67

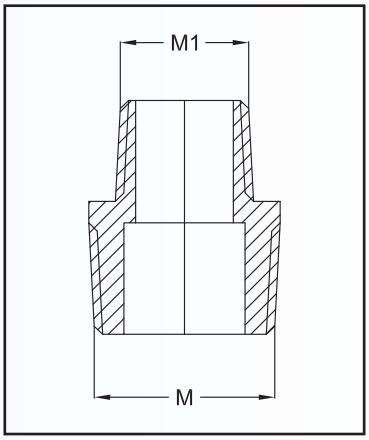
Operating temperature:

Adaptors	Material	Ambient temperature
REN...	Galvanised steel **(G)**	-20°C +80°C
REN...	Nickel-plated brass **(B)**, Aluminium alloy **(A)**	-40°C +150°C
REN...	Stainless steel **(S)**	-60°C +150°C

Certificates are available on www.elfit.com

SELECTION TABLE OF STANDARD ADAPTORS

Thread ISO7/1		Ø MALE M1								
		1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2"	2 ½"
Ø MALE M	3/8"	REN3814								
	1/2"	REN114	REN138							
	3/4"	REN214	REN238	REN21						
	1"	REN314	REN338	REN31	REN32					
	1 ¼"	REN414	REN438	REN41	REN42	REN43				
	1 ½"	REN514	REN538	REN51	REN52	REN53	REN54			
	2"	REN614	REN638	REN61	REN62	REN63	REN64	REN65		
	2 ½"			REN71	REN72	REN73	REN74	REN75	REN76	
	3"			REN81	REN82	REN83	REN84	REN85	REN86	REN87



Order code example of standard adaptors

REN (MODEL) 31 (SIZE) G (MATERIAL)

TECHNICAL NOTES:

- *The silicone O-ring for the IP protection for cylindrical threads (ISO metric) is supplied already assembled*
- *Available with other threads (example code REN31**N**G)*
- *Available in different materials (example code REN31**A**)*

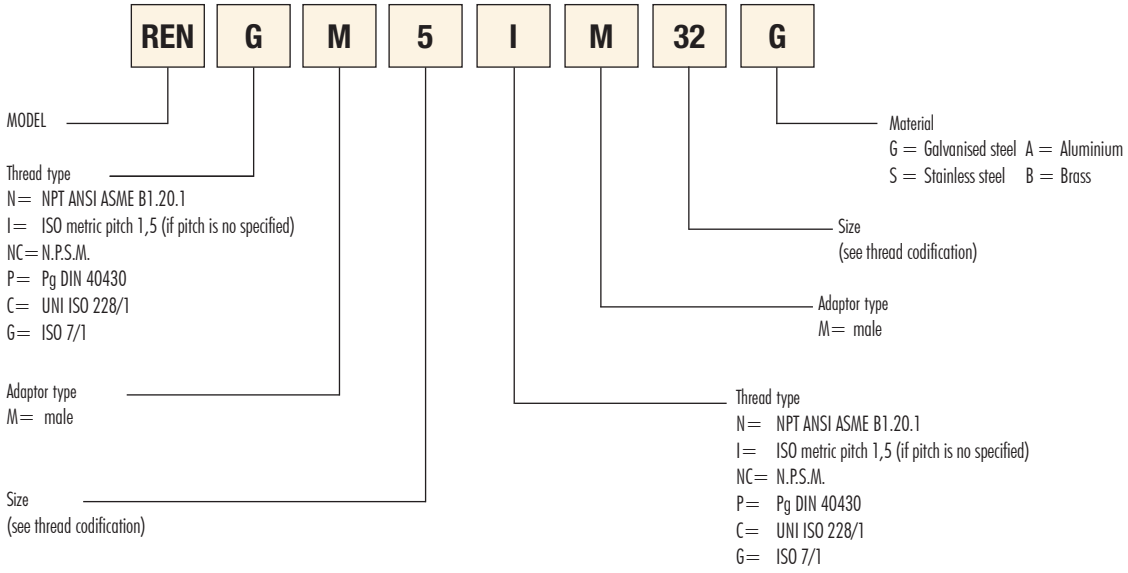
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SPECIAL ADAPTORS (MIXED THREADS)

Order code example

(Adaptor type REN, male 1 ½" Gk, male M32x1,5, galvanised steel)



THREAD CODIFICATION

NPT, N.P.S.M., UNI ISO 228/1, ISO7/1

02	01	1	2	3	4	5	6	7	8	9	10	12	14
1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2	2 ½"	3"	3 ½"	4"	5"	6"

ISO Metric

12	16	20	25	32	40	50	63	75	90	100	63X2	75X2	90X2
M12x1,5	M16x1,5	M20x1,5	M25x1,5	M32x1,5	M40x1,5	M50x1,5	M63x1,5	M75x1,5	M90x1,5	M100x1,5	M63x2	M75x2	M90x2

Pg DIN 40430

2	3	4	5	6	7	8	9	10
PG9	PG11	PG13,5	PG16	PG21	PG29	PG36	PG42	PG48

PLG series plugs are used for close-up unused entries. They feature a hexagonal recessed-type head to ensure the opening with proper tools only.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 02 ATEX 049X	
	IECEx IECEx CES 10.0001X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11: 2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-7: 2006-07, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

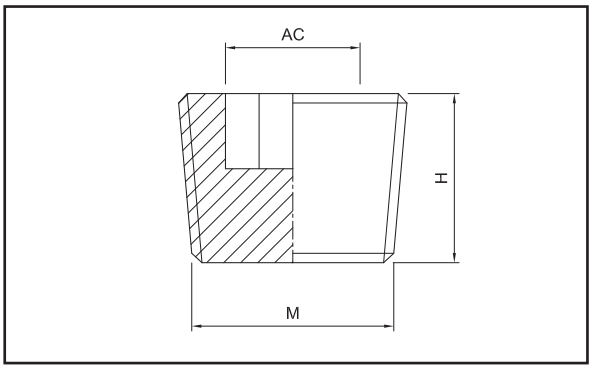
Operating temperature:

Close-up plugs	Material	Ambient temperature
PLG...	Galvanised steel **(G)**	-20°C +80°C
PLG...	Nickel-plated brass **(B)**, Aluminium alloy **(A)**	-40°C +150°C
PLG...	Stainless steel **(S)**	-60°C +150°C

Certificates are available on www.elfit.com

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SELECTION TABLE FOR PLUGS WITH STANDARD CONICAL THREAD

Code	Thread M	Dimensions in mm		Material	Weight
		AC	H		Kg
PLG02NG	1/4" NPT	8	23	Galvanised steel	0,014
PLG01NG	3/8" NPT	8	14	Galvanised steel	0,024
PLG1NG	1/2" NPT	13	18	Galvanised steel	0,034
PLG2NG	3/4" NPT	17	18	Galvanised steel	0,054
PLG3NG	1" NPT	19	24	Galvanised steel	0,124
PLG4NA	1 ¼" NPT	24	24	Aluminium	0,061
PLG5NA	1 ½" NPT	35	24	Aluminium	0,063
PLG6NA	2" NPT	36	24	Aluminium	0,109
PLG7NA	2 ½" NPT	50	30	Aluminium	0,169
PLG8NA	3" NPT	50	30	Aluminium	0,242
PLG10NA	4" NPT	85	30	Aluminium	0,489
PLG12NA	5" NPT	102	32	Aluminium	0,735
PLG14NA	6" NPT	119	32	Aluminium	1,00
PLG02G	1/4" ISO 7/1	8	23	Galvanised steel	0,014
PLG01G	3/8" ISO 7/1	8	14	Galvanised steel	0,024
PLG1G	1/2" ISO 7/1	13	18	Galvanised steel	0,034
PLG2G	3/4" ISO 7/1	17	18	Galvanised steel	0,054
PLG3G	1" ISO 7/1	19	24	Galvanised steel	0,124
PLG4A	1 ¼" ISO 7/1	24	24	Aluminium	0,061
PLG5A	1 ½" ISO 7/1	35	24	Aluminium	0,063
PLG6A	2" ISO 7/1	36	24	Aluminium	0,109
PLG7A	2 ½" ISO 7/1	50	30	Aluminium	0,169
PLG8A	3" ISO 7/1	50	30	Aluminium	0,242
PLG10A	4" ISO 7/1	85	30	Aluminium	0,489
PLG12A	5" ISO 7/1	102	32	Aluminium	0,735
PLG14A	6" ISO 7/1	119	32	Aluminium	1,00

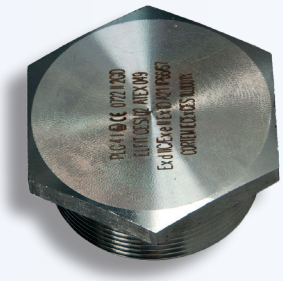
Order code example

PLG	10	N	B
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *Available also in stainless steel (example code PLG3**S**)*
- *Available also in nickel plated brass (example code PLG1**B**)*
- *Available also in aluminium (example code PLG2**A**)*
- *Available also in galvanized steel (example code PLG6**G**)*

PLG series plugs are used for close-up unused entries. They feature a hexagonal external head to ensure the opening with proper tools only.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 02 ATEX 049X	
	IECEx IECEx CES 10.0001X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-31: 2009 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-7: 2006-07, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

Operating temperature:

Close-up plugs	Material	Gaskets	Ambient temperature
PLG...	Galvanised steel **(G)**	Silicone	-20°C +80°C
PLG...	Nickel-plated brass **(B)**, Aluminium alloy **(A)**	Silicone	-40°C +150°C
PLG...	Stainless steel **(S)**	Silicone	-60°C +150°C

Certificates are available on www.elfit.com

ACCESSORIES OPON REQUEST

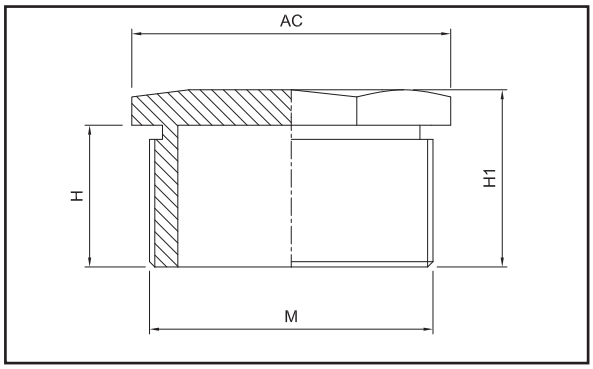
Lock nuts *	Thread ISO228	Code	Material	ISO metric thread	Code	Material
	1/4"	**DL02G**	Galvanised steel	M12x1,5	DL02IB	Nickel-plated brass
	3/8"	**DL01G**	Galvanised steel	M16x1,5	DL01IB	Nickel-plated brass
	1/2"	**DL1G**	Galvanised steel	M20x1,5	DL1IB	Nickel-plated brass
	3/4"	**DL2G**	Galvanised steel	M25x1,5	DL2IB	Nickel-plated brass
	1"	**DL3G**	Galvanised steel	M32x1,5	DL3IB	Nickel-plated brass
	1 ¼"	**DL4G**	Galvanised steel	M40x1,5	DL4IB	Nickel-plated brass
	1 ½"	**DL5A**	Aluminium	M50x1,5	DL5IB	Nickel-plated brass
	2"	**DL6A**	Aluminium	M63x1,5	DL6IB	Nickel-plated brass
	2 ½"	**DL7A**	Aluminium	M75x1,5	DL7IB	Nickel-plated brass
	3"	**DL8A**	Aluminium	M90x1,5	DL8IB	Nickel-plated brass
	3 ½"	**DL9A**	Aluminium	-	-	-
	4"	**DL10A**	Aluminium	M100x1,5	DL10IB	Nickel-plated brass

* For different material contact the sales office.

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SELECTION TABLE FOR PLUGS WITH CYLINDRICAL THREAD

Code	Thread M	Dimensions in mm			Material	Weight
		AC	H	H1		Kg
PLG02C...	1/4" UNI ISO 228/1	17	16	21	On request	0,014
PLG01C...	3/8" UNI ISO 228/1	22	16	21		0,024
PLG1C...	1/2" UNI ISO 228/1	25	20	25		0,034
PLG2C...	3/4" UNI ISO 228/1	32	20	25		0,054
PLG3C...	1" UNI ISO 228/1	38	24	29		0,124
PLG4C...	1 ¼" UNI ISO 228/1	45	24	29		0,061
PLG5C...	1 ½" UNI ISO 228/1	55	24	29		0,063
PLG6C...	2" UNI ISO 228/1	65	24	29		0,109
PLG7C...	2 ½" UNI ISO 228/1	85	24	29		0,169
PLG8C...	3" UNI ISO 228/1	100	24	29		0,242
PLG10C...	4" UNI ISO 228/1	120	24	29		0,489
PLG01I...	M16x1,5	20	16	21	On request	0,014
PLG1I...	M20x1,5	24	16	21		0,024
PLG2I...	M25x1,5	30	16	21		0,034
PLG3I...	M32x1,5	36	16	21		0,054
PLG4I...	M40x1,5	46	16	21		0,124
PLG5I...	M50x1,5	55	16	21		0,061
PLG6I...	M63x1,5	70	18	23		0,063
PLG7I...	M75x1,5	85	18	23		0,109
PLG8I...	M90x1,5	95	18	23		0,169
PLG10I...	M100x1,5	105	18	23		0,242

Order code example

PLG	8	I	G
MODEL	SIZE	THREAD	MATERIAL

TECHNICAL NOTES:

- *Available also in stainless steel (example code PLG3I**S**)*
- *Available also in nickel plated brass (example code PLG1I**B**)*
- *Available also in aluminium (example code PLG2I**A**)*
- *Available also in galvanized steel (example code PLG2I**G**)*
- *Available also with PG thread (example code PLG5**P**A)*

THREAD CODIFICATION

Pg DIN 40430

2	3	4	5	6	7	8	9	10
PG9	PG11	PG13,5	PG16	PG21	PG29	PG36	PG42	PG48

PLG series plugs are used for close-up unused entries. They feature a hexagonal external head to ensure the opening with proper tools only.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD - Ex e IIC Gb Ex tb IIIC Db IP66/68	
Certification:	ATEX IMQ 16 ATEX 005X	
	IECEx IECEx IMQ 15.0009X	

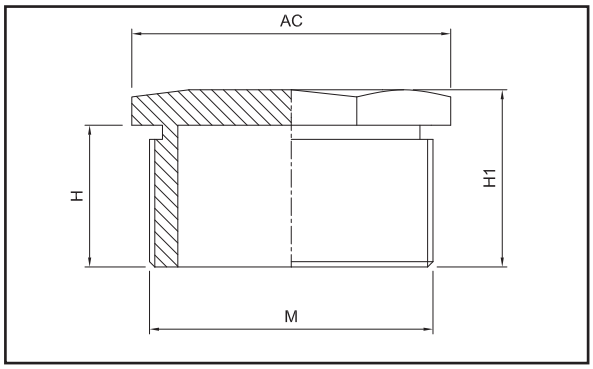
Standards:	CENELEC EN 60079-0: 2012, EN 60079-7: 2007, EN 60079-11: 2012, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2011, IEC 60079-7: 2006, IEC 60079-11: 2012, IEC 60079-31: 2014 Directive RoHS 2011/65/UE
Ambient Temp.:	-60°C +70°C
Degree of protection:	IP66/68

Certificates are available on www.elfit.com

ACCESSORIES OPON REQUEST			
Lock nuts	ISO metric thread	Code	Material
	M12x1,5	**DL02IXEP**	polyamide
	M16x1,5	**DL01IXEP**	
	M20x1,5	**DL1IXEP**	
	M25x1,5	**DL2IXEP**	
	M32x1,5	**DL3IXEP**	
	M40x1,5	**DL4IXEP**	
	M50x1,5	**DL5IXEP**	
	M63x1,5	**DL6IXEP**	

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SELECTION TABLE FOR PLUGS WITH CYLINDRICAL THREAD					
Code polyamide	Thread M	Dimensions in mm			Weight
		AC	H	H1	Kg
PLG02IXE7	M12x1,5	15	10	15	0,002
PLG01ILXE7	M16x1,5	19	15*	19,3	0,003
PLG1ILXE7	M20x1,5	23	15*	21	0,005
PLG2ILXE7	M25x1,5	28	15*	20,8	0,007
PLG3IXE7	M32x1,5	36	15	22,8	0,012
PLG4IXE7	M40x1,5	46	18	26,5	0,024
PLG5IXE7	M50x1,5	55	18	27,5	0,035
PLG6IXE7	M63x1,5	69	18	27,5	0,051

* reduced lenght thread (10mm) upon request.

Order code example

PLG	2	I	L	XE	7
MODEL	SIZE	THREAD	INCREASED LENGHT THREAD	Marking Ex e	SERIE 7J

TECHNICAL NOTES:

- *Silicone gaskets*
- *Black color plug RAL 9005 (Ex e)*
- *Impact resistance 7J*

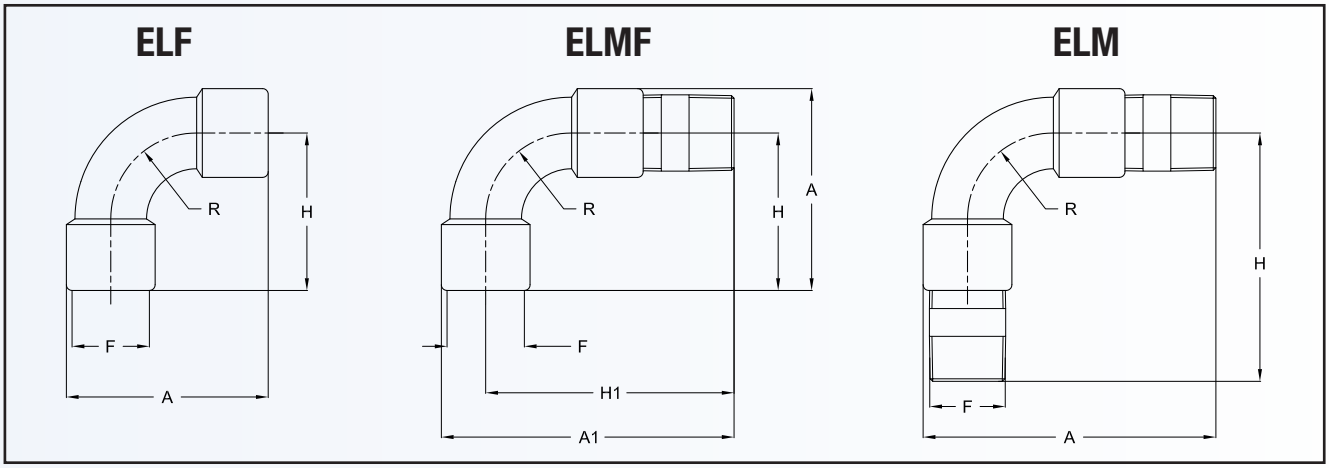
Elbows with ELF series female-female hubs, ELMF series male-female hubs and ELM series male-male hubs enable the 90° deviations of pipes.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 01 ATEX 104U	
	IECEx IECEx CES 15.0005U	For IEC Ex and others certifications data can be downloaded at www.elfit.com

Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2013, IEC60079-1: 2009, IEC60079-7: 2008, IEC60079-31: 2011 Directive RoHS 2011/65/UE
Operating temp.:	-60°C +150°C
Degree of protection:	IP66/67

Certificates are available on www.elfit.com



THREAD CODIFICATION

NPT, N.P.S.M., UNI ISO 228/1

02	01	1	2	3	4	5	6	7	8	9	10	12	14
1/4"	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2	2 ½"	3"	3 ½"	4"	5"	6"

ISO Metric

12	16	20	25	32	40	50	63	75	90	100	63X2	75X2	90X2
M12x1,5	M16x1,5	M20x1,5	M25x1,5	M32x1,5	M40x1,5	M50x1,5	M63x1,5	M75x1,5	M90x1,5	M100x1,5	M63x2	M75x2	M90x2

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SELECTION TABLE OF ELF 90° ELBOWS

Code In aluminium	Thread F	Dimensions in mm			Weight
		A	H	R	Kg
ELF02	1/4" ISO 7/1	41	55	30	0,09
ELF01	3/8" ISO 7/1	41	55	30	0,08
ELF1	1/2" ISO 7/1	60	45	30	0,12
ELF2	3/4" ISO 7/1	75	55	30	0,10
ELF3	1" ISO 7/1	85	65	35	0,20
ELF4	1 ¼" ISO 7/1	100	75	50	0,39
ELF5	1 ½" ISO 7/1	110	87	50	0,37
ELF6	2" ISO 7/1	120	90	60	0,62
ELF7	2 ½" ISO 7/1	175	135	65	0,88
ELF8	3" ISO 7/1	210	160	85	1,48
ELF10	4" ISO 7/1	270	200	150	3,00

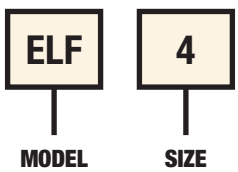
SELECTION TABLE OF ELMF 90° ELBOWS

Code In aluminium	Thread F	Dimensions in mm					Weight
		A	A1	H	H1	R	Kg
ELMF02	1/4" ISO 7/1	41	51	55	65	30	0,09
ELMF01	3/8" ISO 7/1	41	51	55	65	30	0,08
ELMF1	1/2" ISO 7/1	60	97	45	85	30	0,17
ELMF2	3/4" ISO 7/1	75	107	55	95	30	0,17
ELMF3	1" ISO 7/1	85	130	65	110	35	0,29
ELMF4	1 ¼" ISO 7/1	100	145	75	125	50	0,52
ELMF5	1 ½" ISO 7/1	110	153	87	125	50	0,50
ELMF6	2" ISO 7/1	120	180	98	143	60	0,79
ELMF7	2 ½" ISO 7/1	175	220	135	185	65	1,43
ELMF8	3" ISO 7/1	210	255	160	205	85	2,20
ELMF10	4" ISO 7/1	270	300	200	245	150	3,93

SELECTION TABLE OF ELM 90° ELBOWS

Code In aluminium	Thread F	Dimensions in mm			Weight
		A	H	R	Kg
ELM02	1/4" ISO 7/1	51	65	25	0,09
ELM01	3/8" ISO 7/1	51	65	25	0,08
ELM1	1/2" ISO 7/1	97	56	30	0,21
ELM2	3/4" ISO 7/1	107	56	30	0,22
ELM3	1" ISO 7/1	130	70	35	0,38
ELM4	1 ¼" ISO 7/1	145	85	50	0,64
ELM5	1 ½" ISO 7/1	153	85	50	0,64
ELM6	2" ISO 7/1	180	143	60	0,96
ELM7	2 ½" ISO 7/1	220	185	65	1,99
ELM8	3" ISO 7/1	255	205	85	2,92
ELM10	4" ISO 7/1	300	245	150	4,86

Order code example



TECHNICAL NOTES:

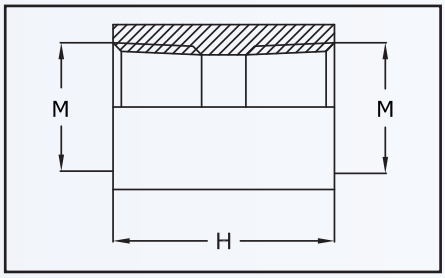
- *Available also with NPT thread (example code ELF3**N**)*
- *Available upon request with ISO metric thread (example code ELF4**I**)*

EM series couplings with female-female hubs, enable the connection between male hubs.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 01 ATEX 104U	
	IECEx IECEx CES 15.0005U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2013, IEC60079-1: 2009, IEC60079-7: 2008, IEC60079-31: 2011 Directive RoHS 2011/65/UE	
Operating temp.:	-20°C +80°C (-60°C +150°C only in stainless steel)	
Degree of protection:	IP66/67	

Certificates are available on www.elfit.com



SELECTION TABLE OF EM COUPLINGS

Code In galvanised steel	Thread F	Dimensions in mm H	Weight Kg
EM1G	1/2" ISO 7/1	39	0,090
EM2G	3/4" ISO 7/1	39	0,080
EM3G	1" ISO 7/1	51	0,150
EM4G	1 ¼" ISO 7/1	51	0,270
EM5G	1 ½" ISO 7/1	51	0,270
EM6G	2" ISO 7/1	51	0,450
EM7G	2 ½" ISO 7/1	65	0,650
EM8G	3" ISO 7/1	65	0,800
EM10G	4" ISO 7/1	65	1,000
EM12G	5" ISO 7/1	65	2,300
EM14G	6" ISO 7/1	65	2,800

Order code example

EM	4	G
MODEL	SIZE	MATERIAL

TECHNICAL NOTES:

- *Available also with NPT thread (example code EM3**N**G)*
- *Available also with UNI ISO228/1 thread (example code EM2**C**G)*
- *Available also with ISO METRIC thread (example code EM4**I**G)*
- *Available also in stainless steel (example code EM2**S**)*
- *Available also in aluminium (example code EM2**A**)*
- *Available also in nickel plated brass (example code EM2**B**)*
- *For threads equivalence have a look at the correlation table in the last page*

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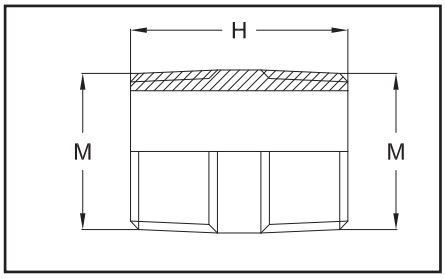
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NP series nipples with male-male hubs, enable the connection between two female hubs.

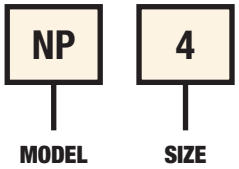


Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 01 ATEX 104U	
	IECEx IECEx CES 15.0005U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2013, IEC60079-1: 2009, IEC60079-7: 2008, IEC60079-31: 2011 Directive RoHS 2011/65/UE	
Operating temp.:	-20°C +80°C (-60°C +150°C only in stainless steel)	
Degree of protection:	IP66/67	

Certificates are available on www.elfit.com



Order code example



SELECTION TABLE OF NP NIPPLES

Code In galvanised steel	Thread F	Dimensions in mm H	Weight Kg
NP1G	1/2" ISO 7/1	48	0,05
NP2G	3/4" ISO 7/1	48	0,06
NP3G	1" ISO 7/1	60	0,10
NP4G	1 ¼" ISO 7/1	55	0,14
NP5G	1 ½" ISO 7/1	55	0,15
NP6G	2" ISO 7/1	55	0,20
NP7G	2 ½" ISO 7/1	68	0,45
NP8G	3" ISO 7/1	68	0,70
NP10G	4" ISO 7/1	68	1,0
NP12G	5" ISO 7/1	68	1,25
NP14G	6" ISO 7/1	68	1,27

TECHNICAL NOTES:

- *Available also with NPT thread (example code NP3**N**G)*
- *Available also with UNI ISO228/1 thread (example code NP2**C**G)*
- *Available also with ISO METRIC thread (example code NP4**I**G)*
- *Available also in stainless steel (example code NP2**S**)*
- *Available also in aluminium (example code NP2**A**)*
- *Available also in nickel plated brass (example code NP2**B**)*
- *For threads equivalence have a look at the correlation table in the last page*

Our resin-filled sealing fittings can be divided into two different categories: sealing fittings and sealing bushing.
The sealing fittings prevent gases, vapours or flames from spreading through the system of pipes in the electrical system. Such products can be divided into:
EYS vertical sealing fitting;
EZS horizontal sealing fitting;
EYD vertical sealing fitting complete of drain valve to breath a possible condensation developed inside the pipes;

The multicable sealing bushings are suitable to be assembled on junction boxes, electrical motors, panel boards and other electrical devices built in accordance to the Ex d IIC method of protection.
The standard sealing bushings are:
TP threaded sealing bushing;
CP sealing bushing with cylindrical joint;
NPS sealing nipple.

The **ECD** drain and breather valves are used both on our EYD and EZD series sealing fittings and in any type of equipment for draining the inner condensation or for breathing out possible inner vapours.

CRV420 sealing compound

Two-component polyurethan resin for sealing bushing and sealing fittings

CRV 420 resin is an exclusive Elfit product. Its chemical composition has been improved after countless sealing tests, made in collaboration with CESI laboratory. CRV 420 resin has been certified along with the sealing fittings type EYS and EZS, so they need to be sold together and never separated. Sealings have to be made perfectly, in order to block the passage of gases, vapours or flames through pipes systems.



Ambient Temp.:	-20°C +100°C

Quantity of resin for each sealing fitting		
Dimensions	EYS/EYD quantity of resin	EZS/EZD quantity of resin
½"	35 g	140 g
¾"	50 g	140 g
1"	100 g	140 g
1 ¼"	240 g	390 g
1 ½"	240 g	390 g
2"	380 g	570 g
2 ½"	1250 g	1000 g
3"	1250 g	1000 g

ATTENTION!
THE PRODUCT SHELF LIFE DOES NOT EXCEED 5 MONTHS FROM THE DATE OF PREPARATION

SELECTION TABLE OF RESIN PACKAGE		
Code	Component A	Component B
CRV420-B-100	100 g	20 g
CRV420-B-300	300 g	60 g
CRV420-B-400	400 g	80 g
CRV420-B-1000	1000 g	200 g

For further details about the resin compound preparation and safety information, look the instructions supplied with CRV420 resin.

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PREPARATION OF THE RESIN COMPOUND

Characteristics

Polyuretan black resin (after mixing the two components)
Hardening time: around 4 hours
Cathalizing time: 24 hours
Code: CRV 420

RESIN (Component A)
- Black compound
- Code: CRV420H71
- Mixing ratio: 100%

CATALYST AGENT (Component B)
- Brown compound
- Code: CRV420H72
- Mixing ratio: 25%

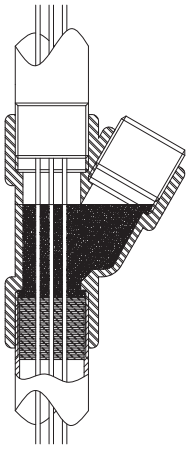
Ratio of compounds to be mixed

Ratio 100g (Compound A) with 20g (Compound B)
when ready to be used

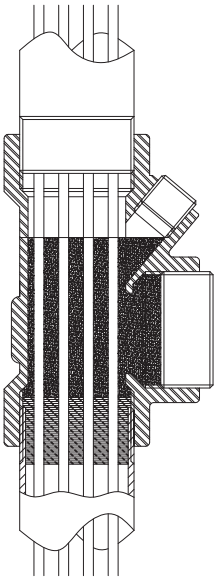
Time of use for the mixed up compound

- Ambient temperature equal to 20°C within 30 minutes from the mixing
- Ambient temperature of 15°C within 45 minutes from the mixing

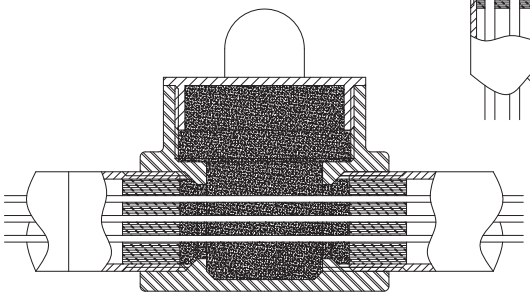
EYS - EYD



EYS - EYD



EZS

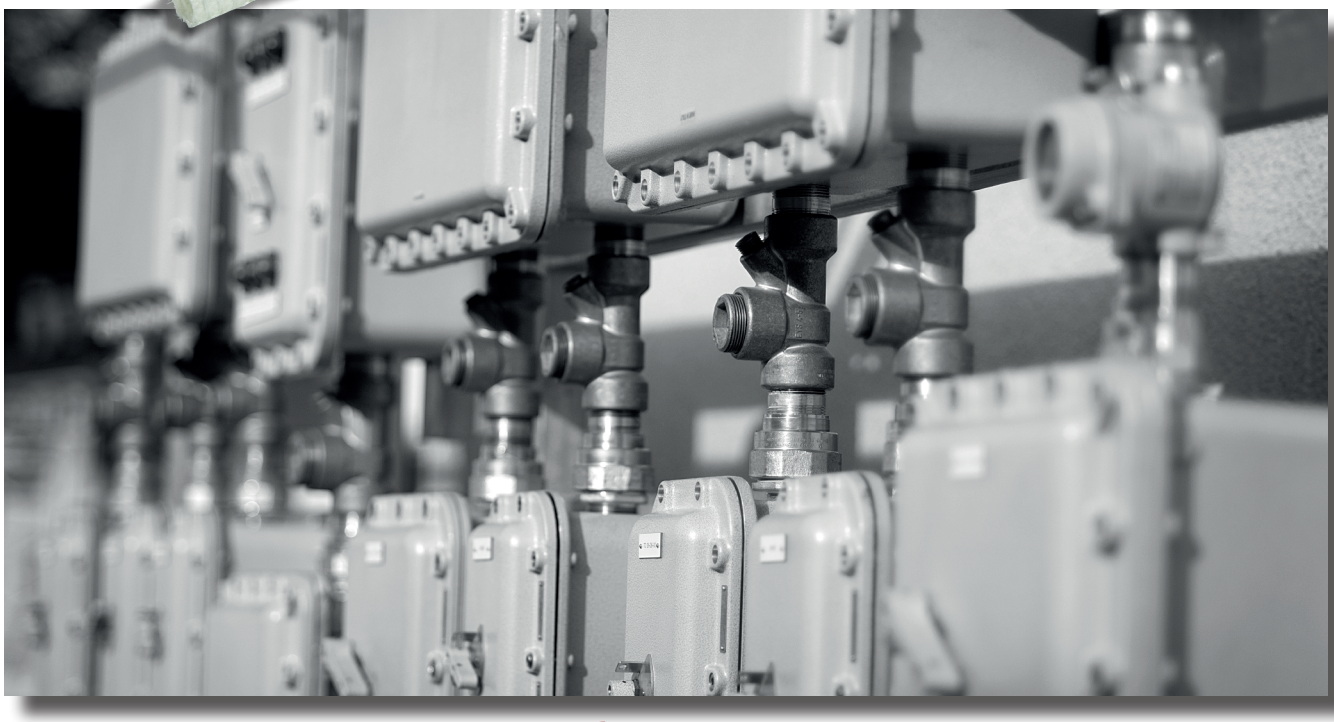


FV... Glass fiber

The glass fiber is inserted within sealing fittings to avoid that the sealing resin runs into the underlying connection pipe.



SELECTION TABLE OF GLASS FIBER	
Code	Weight
FV-1	250 g
FV-5	500 g
FV-10	1000 g

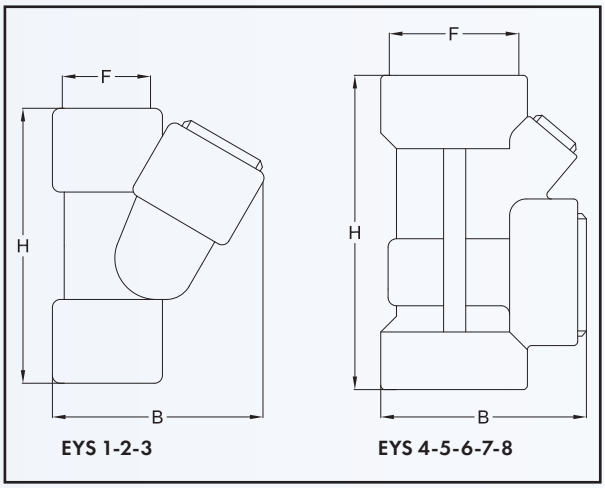


EYS series sealing fittings prevent the passage of gas, vapours or flames through the pipe system in the electrical installation. They are used for vertical mounting and available in two different shapes, the first for dimensions less than 1", and the second up to 3" with an additional lateral opening for an easy introduction of the fiber. The sealing fittings must be installed as close as possible to the Ex d junction box and in accordance with the standard EN60079-1. They must be filled only with CRV420 resin that has to be requested in the amount indicated in the table. It is not allowed the use of other types of sealing compound.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66	
Certification:	ATEX CESI 03 ATEX 085X	
	IECEx IECEx CES 14.0019X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2015-06, IEC60079-31: 2013 Directive RoHS 2011/65/UE	
Ambient Temp. (EYS):	-20°C +100°C	
Operating temperature:	-20°C +100°C	
Degree of protection:	IP66	

Certificates are available on www.elfit.com



SELECTION TABLE OF EYS VERTICAL SEALING FITTINGS

Code In aluminium	Thread	Dimensions in mm		Amount of resin	Weight
	F	H	B	gr	Kg
EYS1	1/2" ISO 7/1	77	56	35	0,097
EYS2	3/4" ISO 7/1	87	66	50	0,147
EYS3	1" ISO 7/1	105	82	100	0,242
EYS4	1 ¼" ISO 7/1	145	84	240	0,576
EYS5	1 ½" ISO 7/1	145	84	240	0,528
EYS6	2" ISO 7/1	150	95	380	0,643
EYS7	2 ½" ISO 7/1	200	134	1250	1,580
EYS8	3" ISO 7/1	200	134	1250	1,480

TECHNICAL NOTES:

- *Available also with NPT thread (example code EYS2**N**)*
- *Available upon request in stainless steel. Contact our Sales Office for availability.*

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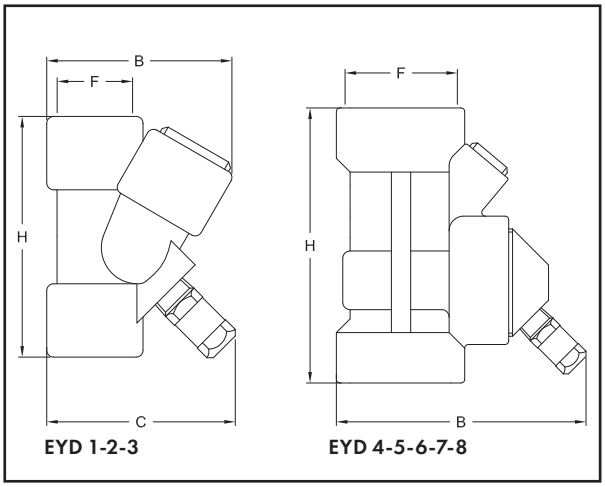
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EYD series sealing fittings are equipped with ECD valve to drain the possible condensation inside the conduits. They are used for vertical mounting and available in two different shapes, the first for dimensions less than 1", and the second up to 3" with an additional lateral opening for easy introduction of the fiber. The sealing fittings have to be installed as close as possible to the Ex d junction box and in accordance with the standard EN60079-1. They must be filled only with CRV420 resin that has to be requested in the amount indicated in the table. It is not allowed the use of other types of sealing compound.



Classification: 2014/34/UE	Group II	Category 2G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	
Marking:	CE 0722 Ex II 2 G Ex d IIC Gb	
Certification	ATEX CESI 03 ATEX 085X	
	IECEx IECEx CES 14.0019X	All IEC Ex certification data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2015-06, IEC60079-31: 2013 Directive RoHS 2011/65/UE	
Ambient Temp. (EYD):	-20°C +60°C	
Operating temperature:	-20°C +100°C	

Certificates are available on www.elfit.com



EYD 1-2-3 EYD 4-5-6-7-8

SELECTION TABLE OF EYD VERTICAL SEALING FITTINGS

Code In aluminium	Thread	Dimensions in mm			Amount of resin	Weight
	F	H	B	C	gr	Kg
EYD1	1/2" ISO 7/1	88	63	67	35	0,280
EYD2	3/4" ISO 7/1	100	72	78	50	0,310
EYD3	1" ISO 7/1	117	85	85	100	0,430
EYD4	1 ¼" ISO 7/1	145	120	120	240	0,720
EYD5	1 ½" ISO 7/1	145	120	120	240	0,600
EYD6	2" ISO 7/1	150	131	131	380	0,820
EYD7	2 ½" ISO 7/1	200	165	165	1250	1,580
EYD8	3" ISO 7/1	200	165	165	1250	1,480

TECHNICAL NOTES:

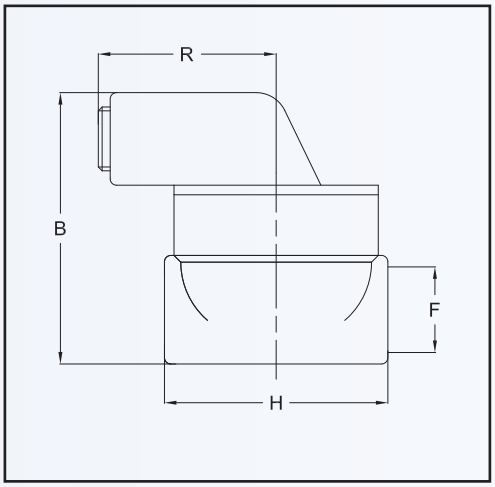
- *Available also with NPT thread (example code EYD2**N**)*
- *Available upon request in stainless steel. Contact our Sales Office for availability.*

EZS series horizontal fittings prevent the passage of gas, vapours or flames through the pipe system in the electrical installation. EZS series can be used both for horizontal and vertical mounting. The sealing fittings have to be installed as close as possible to the Ex d junction box and in accordance with the standard EN60079-1. They must be filled only with CRV420 resin that has to be requested in the amount indicated in the table. It is not allowed the use of other types of sealing compound.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66	
Certification:	ATEX CESI 03 ATEX 085X	
	IECEx IECEx CES 14.0019X	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2015-06, IEC60079-31: 2013 Directive RoHS 2011/65/UE	
Ambient Temp. (EZS):	-20°C +100°C	
Operating temperature:	-20°C +100°C	
Degree of protection:	IP66	

Certificates are available on www.elfit.com



SELECTION TABLE OF EZS HORIZONTAL SEALING FITTINGS

Code In aluminium	Thread	Dimensions in mm			Amount of resin	Weight
	F	H	B	R	gr	Kg
EZS1	1/2" ISO 7/1	72	83	50	150	0,26
EZS2	3/4" ISO 7/1	72	83	50	140	0,25
EZS3	1" ISO 7/1	74	92	50	140	0,27
EZS4	1 ¼" ISO 7/1	98	110	80	390	0,52
EZS5	1 ½" ISO 7/1	98	110	80	390	0,48
EZS6	2" ISO 7/1	130	120	80	570	0,70
EZS7	2 ½" ISO 7/1	142	160	90	1000	1,50
EZS8	3" ISO 7/1	142	160	90	1000	1,74

TECHNICAL NOTES:

- *Available also with NPT thread (example code EZS2**N**)*
- *Available upon request in stainless steel*

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MOTORE
9001-P-302C

Drain and breather valves are suitable for use in any type of explosion proof enclosure to drain the condensation and vapours developed inside the enclosure.

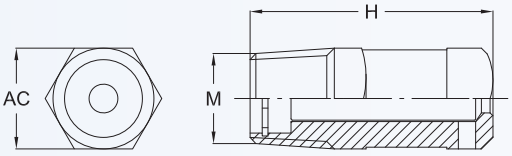


Classification: 2014/34/UE	Group II	Category 2GD	
Installation: EN 60079.14	zone 1 - zone 2 (Gas)		ECD-1...
	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)	ECD-2...
Marking:	CE 0722 Ex II 2 G Ex d IIC/IIB Gb		ECD-1...
	CE 0722 Ex II 2 G Ex db IIB/IIC Gb II 2 G Ex eb IIB/IIC Gb II 2 D Ex tb IIIC Db		ECD-2...
Certification:	ATEX CESI 01 ATEX 081U		
	IECEx IECEx CES 14.0016U	For IEC Ex and others certifications data can be downloaded at www.elfit.com	

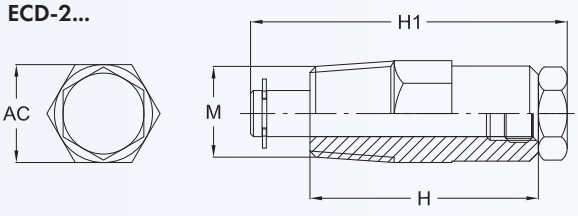
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015/A1:2018, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014, IEC 60079-7: 2015, IEC60079-31: 2013 Directive RoHS 2011/65/UE
Operating temp. (IIC):	-60°C +60°C
Operating temp. (IIB):	-60°C +150°C
Degree of protection:	IP66

Certificates are available on www.elfit.com

ECD-1...



ECD-2...



SELECTION TABLE OF ECD VALVES

Code In stainless steel AISI 316	Thread	Dimensions in mm			Use	Weight
	F	H	H1	AC		Kg
ECD-110S	3/8" ISO7/1	42	-	17	Drain	0,08
ECD-115S	1/2" ISO7/1	43	-	22	Drain	0,08
ECDS-110S	3/8" ISO7/1	42	-	17	Breather	0,10
ECD-210S	3/8" ISO7/1	40	55	17	Drain	0,11
ECD-215S	1/2" ISO7/1	40	55	22	Drain	0,20

TECHNICAL NOTES:

- *Available also in aluminium (example code ECD110)*
- *Available also with NPT thread (example code ECD110**N**S*
- *Available also with ISO METRIC thread*

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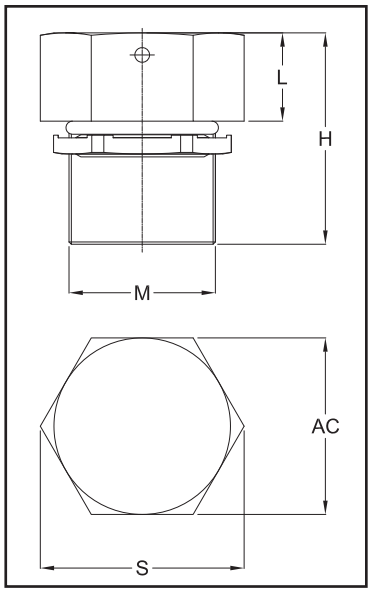
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Automatic drainage and breather valves ECDE series are suitable to be used on increased safety, intrinsically safety or watertight enclosures to facilitate the elimination of condensation or vapors developed inside. Thanks to a precise mechanism, it is possible to obtain a continuous drainage and breathing of the junction box, protecting it from the possible formations of internal condensation and thus avoiding the periodic manual discharge, while ensuring a suitable IP degree of protection.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex eb IIC Gb Ex tb IIIC Db IP66	
Certification:	ATEX CML 24 ATEX 3286X	
	IECEx IECEx CML16.0124X	All IEC Ex certification data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-7: 2015+A1:2018, EN 60079-31: 2024 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2017, IEC 60079-7: 2017, IEC60079-31: 2022 Directive RoHS 2011/65/UE	
Ambient temp.:	-60°C +150°C	
Degree of protection:	IP66	

Certificates are available on www.elfit.com



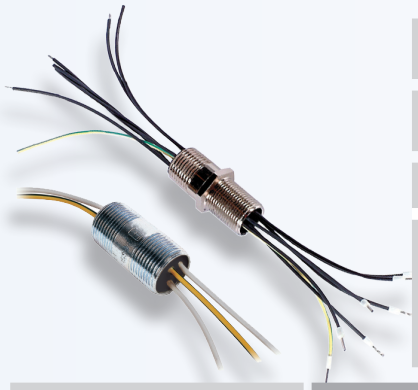
SELECTION TABLE OF ECDE VALVES

Code In stainless steel AISI 316	Code In nickel-plated brass	Thread	Dimensions in mm				Use
		M	H*	L	S	AC	
ECDE-B1S	ECDE-B1B	M20x1,5	26	13	28	24	Breather
ECDE-B2S	ECDE-B2B	M25x1,5	26	13	35	30	Breather
ECDE-D1S**	ECDE-D1B**	M20x1,5	26	13	28	24	Breather/Drain
ECDE-D2S**	ECDE-D2B**	M25x1,5	26	13	35	30	Breather/Drain

TECHNICAL NOTES:

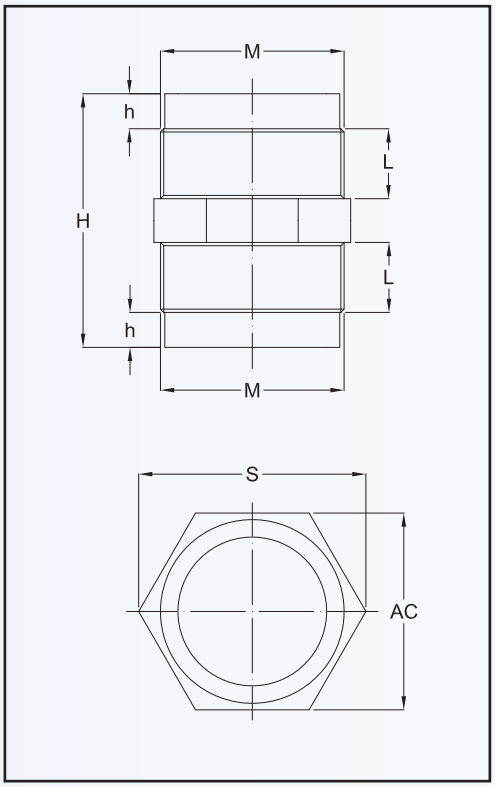
- * *Different lengths for thick junction boxes upon request.*
- ** *When the ECDE are intended for use as a drain, they must be installed at the bottom of the enclosure*

The sealed nipples are used to connect explosion-proof enclosures. The cables are sealed through a two-component resin set around each conductor.
Note: Please refer to the Sales Office for the available cables arrangements.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex d IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 01 ATEX 080U	
	IECEx IECEx CES 10.0003U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014-06, IEC60079-31: 2013 Directive RoHS 2011/65/UE	
Operating temperature:	-50°C +110°C	
Degree of protection:	IP66/67	

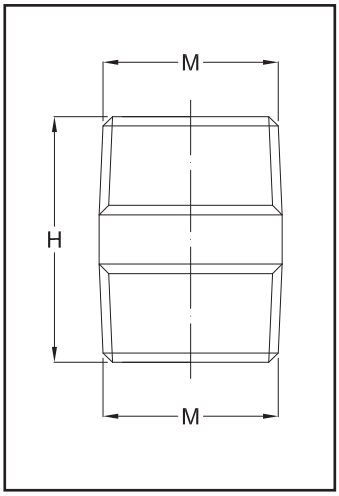
Certificates are available on www.elfit.com



SELECTION TABLE OF ISO METRIC SEALED NIPPLES

Code In brass	ISO METRIC thread	Dimensions in mm				
	M	H	L	h	AC	S
NPS10	M10x1,5	54	16	8	14	16,5
NPS12	M12x1,5				16	19
NPS16	M16x1,5				20	23,5
NPS20	M20x1,5				24	28
NPS24	M24x1,5				30	34,5
NPS25	M25x1,5				30	34,5
NPS32	M32x1,5				36	42
NPS33	M33x1,5				36	42
NPS36	M36x1,5				40	46,5
NPS38	M38x1,5				42	48,5
NPS40	M40x1,5				45	52
NPS42	M42x1,5				45	52

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SELECTION TABLE OF ISO 7/1 SEALED NIPPLES

Code In galvanised steel	Thread	Dimensions mm
	M	H
NPS1	1/2" ISO 7/1	48
NPS2	3/4" ISO 7/1	48
NPS3	1" ISO 7/1	60
NPS4	1 ¼" ISO 7/1	55
NPS5	1 ½" ISO 7/1	55

SELECTION TABLE OF NPT SEALED NIPPLES

Code In galvanised steel	Thread	Dimensions mm
	M	H
NPS1N	1/2" NPT	48
NPS2N	3/4" NPT	48
NPS3N	1" NPT	60
NPS4N	1 ¼" NPT	55
NPS5N	1 ½" NPT	55

Order method for sealing nipples

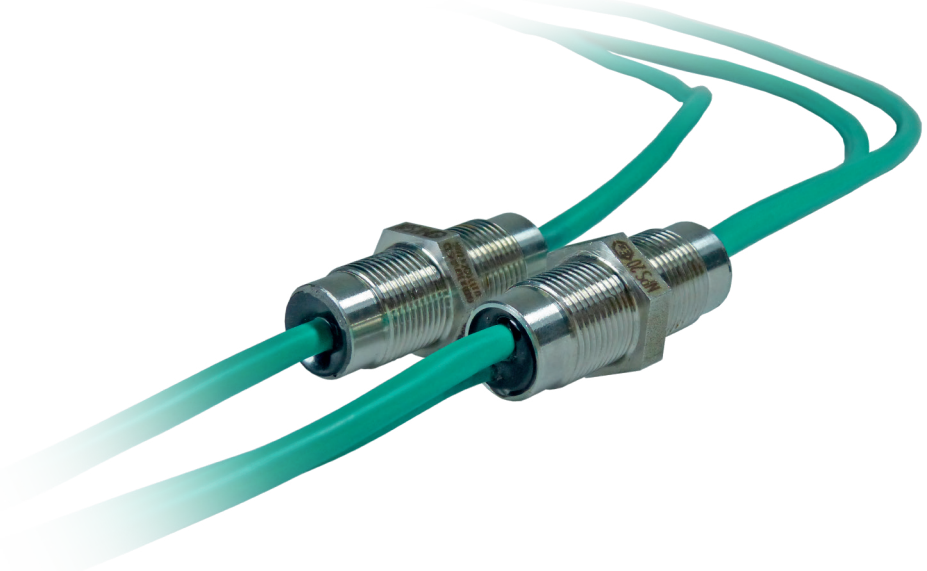
1. Indicate the NPS model based on the necessary thread type
2. Indicate amount, section, color of cables to be sealed in the nipple
3. Indicate the cables lenght on the two sides
4. Indicate the total amount of necessary sealed nipples

TECHNICAL NOTES:

- *The maximum quantity as well as the kind of usable cables are specified on "Maximum quantity and wires type tables" in the following pages*
- *Available the installation of terminals or connectors*
- *Possible numeration of cables*
- *Possible to strip the cables' extremities*
- *Available also in stainless steel*
- *Available also in galvanised steel*
- *It is possible to supply sealing nipples with mixed thread*
- *Request the lock nuts for the sealing nipples with ISO metric thread*

Upon request it's possible to supply sealing nipples with cables for thermocouples K type

- *The maximum quantity and the kind of usable wires are specified on the following pages*

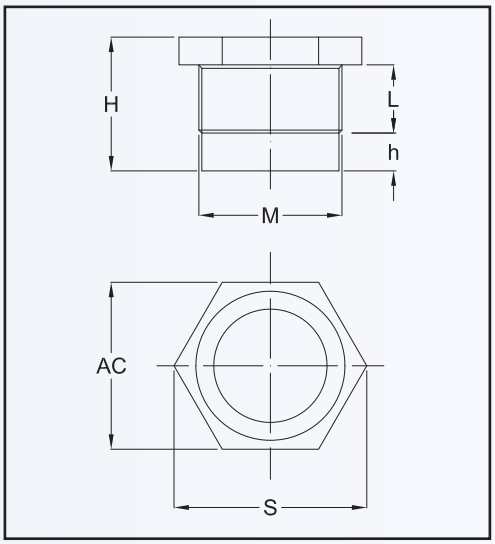


The sealing bushings are used to connect explosion-proof enclosures. The cables are sealed through a two-component resin set around each conductor.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	
Marking:	CE 0722 Ex II 2 G Ex d IIC Gb	
Certification:	ATEX CESI 01 ATEX 080U	
	IECEx IECEx CES 10.0003U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014-06, IEC60079-31: 2013 Directive RoHS 2011/65/UE	
Operating temperature:	-50°C +110°C	

Certificates are available on www.elfit.com



SELECTION TABLE OF SEALING BUSHINGS WITH THREADED JOINT

Code In brass	ISO METRIC thread	Dimensions in mm				
	M	H	L	h	AC	S
TP	10	30	15	9	14	16,5
TP	12				16	19
TP	16				20	23,5
TP	24				28	32,5
TP	25				30	34,5
TP	33				36	42
TP	36				40	46,5
TP	38				42	48,5
TP	42				45	52

Order method for sealing bushings

1. Indicate the TP model based on the necessary thread type
2. Indicate amount, section, color of cables to be sealed in the nipple
3. Indicate cable lenght on the two sides
4. Indicate the total amount of necessary sealing nipples

TECHNICAL NOTES:

- *The maximum quantity as well as the kind of usable cables are specified on "Maximum quantity and wires type tables" in the following pages*
- *Possible to strip the cables' extremities*
- *Available also in stainless steel*
- *Request the lock nuts for the block of the sealing bushings*

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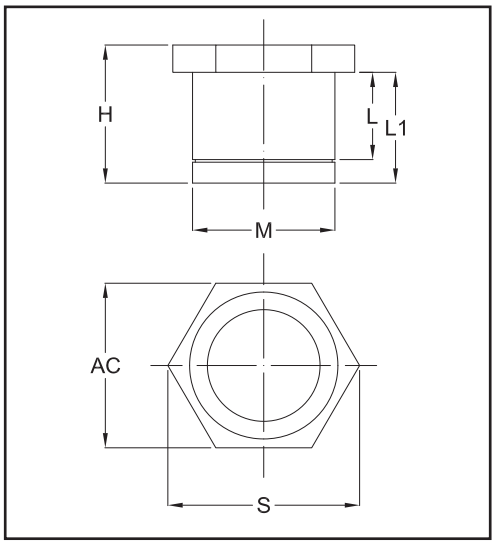
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The sealing bushings are used to connect explosion-proof enclosures. The cables are sealed through a two-component resin set around each conductor.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	
Marking:	CE 0722 Ex II 2 G Ex d IIC Gb	
Certification:	ATEX CESI 01 ATEX 080U	
	IECEx IECEx CES 10.0003U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2014, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2014-06, IEC60079-31: 2013 Directive RoHS 2011/65/UE	
Operating temperature:	-50°C +110°C	

Certificates are available on www.elfit.com



SELECTION TABLE OF SEALING BUSHINGS WITH CYLINDRICAL JOINT

Code In brass	ISO METRIC thread	Dimensions in mm				
	M	H	L	L1	AC	S
CP	10	35	25,5	29	14	16,5
CP	12				16	19
CP	16				20	23,5
CP	24				28	32,5
CP	29				32	37
CP	33				36	42
CP	36				40	46,5
CP	38				42	48,5
CP	42				45	52

Order method for sealing bushings

1. Indicate the TP model based on the necessary thread type
2. Indicate amount, section, color of cables to be sealed in the nipple
3. Indicate cable lenght on the two sides
4. Indicate the total amount of necessary sealing nipples

TECHNICAL NOTES:

- *The maximum quantity as well as the kind of usable cables are specified on "Maximum quantity and wires type tables" in the following pages*
- *Possible to strip the cables' extremities*
- *Available also in stainless steel*
- *Request the lock nuts for the block of the sealing bushings*

Max. N. of wires	Wires size mm²	Rated current for continuous usage for max. temperature of 40°C	Rated Voltage	Thread size for TP - NPS		CP cylindrical Joint size
1	0,75	10 A	750 V	M10x1,5	1/8"	Ø 10
1				M12x1,5	1/4"	Ø 12
3				M16x1,5	3/8"	Ø 16
5				M20x1,5	1/2"	-
6				M24x1,5	-	Ø 24
6				M25x1,5	3/4"	Ø 25
8				-	-	Ø 29
12				M33x1,5	1"	Ø 33
15				M36x1,5	-	Ø 36
15				M38x1,5	-	Ø 38
48				M42x1,5	1 ¼" - 1 ½"	Ø 42
1	1	12 A	1000 V	M10x1,5	1/8"	Ø 10
1				M12x1,5	1/4"	Ø 12
3				M16x1,5	3/8"	Ø 16
5				M20x1,5	1/2"	-
6				M24x1,5	-	Ø 24
6				M25x1,5	3/4"	Ø 25
8				-	-	Ø 29
12				M33x1,5	1"	Ø 33
15				M36x1,5	-	Ø 36
15				M38x1,5	-	Ø 38
21				M42x1,5	1 ¼" - 1 ½"	Ø 42
1	1,5	15 A		M10x1,5	1/8"	Ø 10
1				M12x1,5	1/4"	Ø 12
3				M16x1,5	3/8"	Ø 16
5				M20x1,5	1/2"	-
6				M24x1,5	-	Ø 24
6				M25x1,5	3/4"	Ø 25
8				-	-	Ø 29
12				M33x1,5	1"	Ø 33
15				M38x1,5	-	Ø 38
36				M42x1,5	1 ¼" - 1 ½"	Ø 42
1	2,5	20 A		M16x1,5	3/8"	Ø 16
3				M20x1,5	1/2"	-
3				M24x1,5	-	Ø 24
3				M25x1,5	3/4"	Ø 25
5				-	-	Ø 29
12				M33x1,5	1"	Ø 33
12				M38x1,5	-	Ø 38
21				M42x1,5	1 ¼" - 1 ½"	Ø 42
24						
1	4	27 A		M16x1,5	3/8"	Ø 16
2				M20x1,5	1/2"	-
3				M24x1,5	-	Ø 24
3				M25x1,5	3/4"	Ø 25
5				-	-	Ø 29
6				M33x1,5	1"	Ø 33
8				M36x1,5	-	Ø 36
8				M38x1,5	-	Ø 38
18				M42x1,5	1 ¼" - 1 ½"	Ø 42
1	6	35 A		M16x1,5	3/8"	Ø 16
2				M20x1,5	1/2"	-
2				M24x1,5	-	Ø 24
2				M25x1,5	3/4"	Ø 25
4				-	-	Ø 29
6				M33x1,5	1"	Ø 33
6				M38x1,5	-	Ø 38
6				M42x1,5	1 ¼" - 1 ½"	Ø 42
12						
1	10	49 A		M24x1,5	3/4"	Ø 24
3				M33x1,5	1"	Ø 33
6				M36x1,5	-	Ø 36
6				M38x1,5	-	Ø 38
6				M42x1,5	1 ¼" - 1 ½"	Ø 42

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Max. N. of wires	Wires size mm²	Rated current for continuous usage for max. temperature of 40°C	Rated Voltage	Thread size for TP - NPS		CP cylindrical Joint size
1	16	65 A	1000 V	M24x1,5	-	Ø 24
1				M25x1,5	3/4"	Ø 25
3				M33x1,5	1"	Ø 33
6				M36x1,5	-	Ø 36
6				M38x1,5	-	Ø 38
6				M42x1,5	1 ¼" - 1 ½"	Ø 42
1	25	86 A		M24x1,5	-	Ø 24
1				M25x1,5	3/4"	Ø 25
3				M42x1,5	1 ¼" - 1 ½"	Ø 42
1	35	107 A		M24x1,5	-	Ø 24
1				M25x1,5	3/4"	Ø 25
3				M42x1,5	1 ¼" - 1 ½"	Ø 42
1	50	132 A		M24x1,5	-	Ø 24
1				M25x1,5	3/4"	Ø 25
1				M33x1,5	1"	Ø 33
1	70	165 A		M33x1,5	1"	Ø 33
1				M36x1,5	-	Ø 36

Rated voltage 750V					
Max. N. of wires	Wires size mm²	Rated current for continuous usage for max. temperature of 40°C	Thread size for TP - NPS		CP cylindrical joint size
3	0,5	5 A	M10x1,5	1/8"	Ø 10
3			M12x1,5	1/4"	Ø 12
8			M16x1,5	3/8"	Ø 16
12			M20x1,5	1/2"	-
16			M24x1,5	-	Ø 24
16			M25x1,5	3/4"	Ø 25
20				-	Ø 29
20			M33x1,5	1"	Ø 33
25			M36x1,5	-	Ø 36
35			M38x1,5	-	Ø 38
45			M42x1,5	1 ¼" - 1 ½"	Ø 42

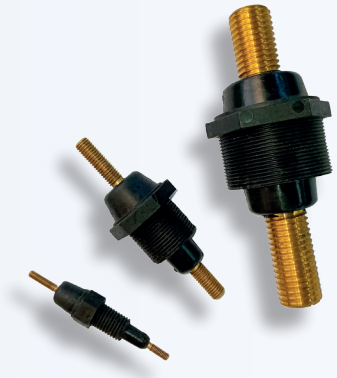
Wire capacity range with cables for thermocouples K type - Rated current 100/100V				
Max. N. of wires	Wires size mm²	Operating temperature	Thread size for TP - NPS	CP cylindrical joint size
1	2 x 0,22 2 x 0,50 2 x 0,80	110°C	M12x1,5	Ø 12
1			M16x1,5	Ø 16
2			M24x1,5	Ø 24
2			M25x1,5	Ø 25
5				Ø 29
5			M33x1,5	Ø 33
7			M36x1,5	Ø 36
7			M38x1,5	Ø 38
9			M42x1,5	Ø 42
1	2 x 1,00		M16x1,5	Ø 16
2			M24x1,5	Ø 24
2			M25x1,5	Ø 25
4				Ø 29
5			M33x1,5	Ø 33
7			M36x1,5	Ø 36
7			M38x1,5	Ø 38
9			M42x1,5	Ø 42
1	2 x 1,30 2 x 1,50		M16x1,5	Ø 16
2			M24x1,5	Ø 24
2			M25x1,5	Ø 25
4				Ø 29
5			M33x1,5	Ø 33
7			M36x1,5	Ø 36
7			M38x1,5	Ø 38
9			M42x1,5	Ø 42

TECHNICAL NOTES:

- *The rated current specified in the tables refers to a temperature of 40°C*
- *For other service temperatures up to 110°C, the derating of current must be evaluated by the end user.*
- *The resin must fill at least 20% of section (60079-1)*
- *For the type of cable allowed, please refer to the certificate*

CB Conductor bushings for low voltage

The conductor bushings are used as electrical connection between flameproof sides of enclosures or between flameproof side and increased safety side of enclosures. The conductor bushings are made in resin and equipped with a brass threaded rod.



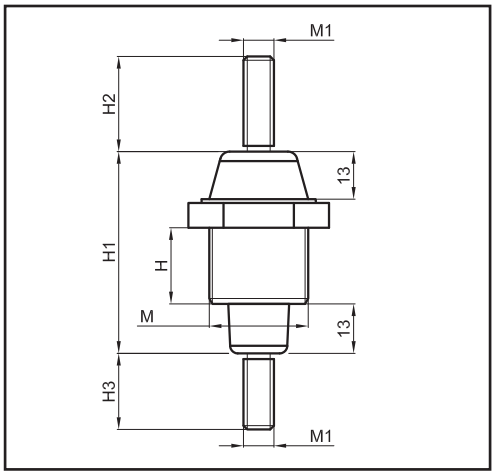
Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	
Marking:	CE 0722 Ex II 2 G Ex d IIC	
	CE 0722 Ex II 2 G Ex de IIC	
Certification:	ATEX CESI 11 ATEX 014U	
Standards:	CENELEC EN 60079-0:2006, EN 60079-1:2007, EN 60079-7:2007 and EUROPEAN DIRECTIVE 2014/34/UE	
Operating temperature:	-50°C +150°C	

ACCESSORIES UPON REQUEST			
Locknuts	ISO thread	Nickel-plated brass	Stainless steel
	M12x1,5	**DL02IB**	**DL02IS**
	M16x1,5	**DL01IB**	**DL01IS**
	M26x1,5	**DLIS026B**	**DLIS026S**
	M30x1,5	**DLIS030B**	**DLIS030S**
	M36x1,5	**DLIS036B**	**DLIS036S**
	M42x1,5	**DLIS042B**	**DLIS042S**
	M48x1,5	**DLIS048B**	**DLIS048S**

ELECTRICAL FEATURES		
Code	**Rated current**	**Rated voltage**
CB2-690	6A	690Vac
CB8-690	100A	
CB12-690	250A	
CB20-690	400A	
CB5-1100	25A	1100Vac
CB10-1100	160A	
CB16-1100	315A	

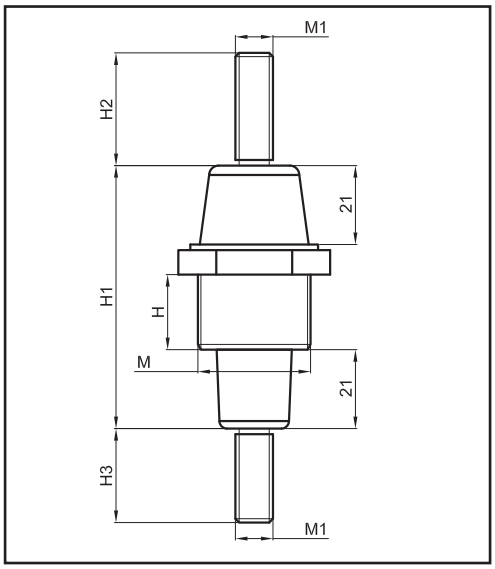
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CONDUCTOR BUSHING SELECTION TABLE

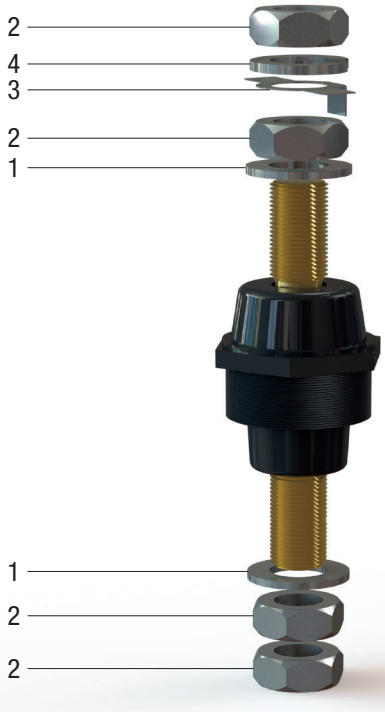
Code	ISO METRIC Thread	Dimensions in mm					
	M	M1	H	H1	H2	H3	AC
CB2-690	M12x1,5	M4	16	51,2	15	11,5	15
CB8-690	M26x1,5	M8	20	53	25	19,5	32
CB12-690	M36x1,5	M12	22	56	35	21,5	41
CB20-690	M48x1,5	M20	25	60	45	42	50



CONDUCTOR BUSHING SELECTION TABLE

Code	ISO METRIC Thread	Dimensions in mm					
	M	M1	H	H1	H2	H3	AC
CB5-1100	M16x1,5	M5	16	67	15	13,5	20
CB10-1100	M30x1,5	M10	20	70	30	19,5	35
CB16-1100	M42x1,5	M16	22	73	40	37	45

Including accessories



1. Stainless Steel Flat Washer
2. Stainless Steel Hex Nut
3. Stainless Steel Anti-Rotation Bracket
4. Stainless Steel Grower Washer

Flexible conduits are used for connecting misaligned equipments or equipments subjected to vibrations, such as electrical motors. They are suitable for installation of lighting fixtures and in alternative to rigid conduits when they are difficult to install. SP series flexible conduits have a good flexibility and a very good damping effect against vibrations.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIB Gb Ex tb IIIC Db IP66/67	
	CE 0722 Ex II 2 GD Ex db IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 00 ATEX 048U	
	IECEx IECEx CES 14.0011 U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012+A11:2013, EN 60079-1: 2014, EN 60079-31: 2014, EN ISO 10807: 1996 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Degree of protection:	IP66/67	

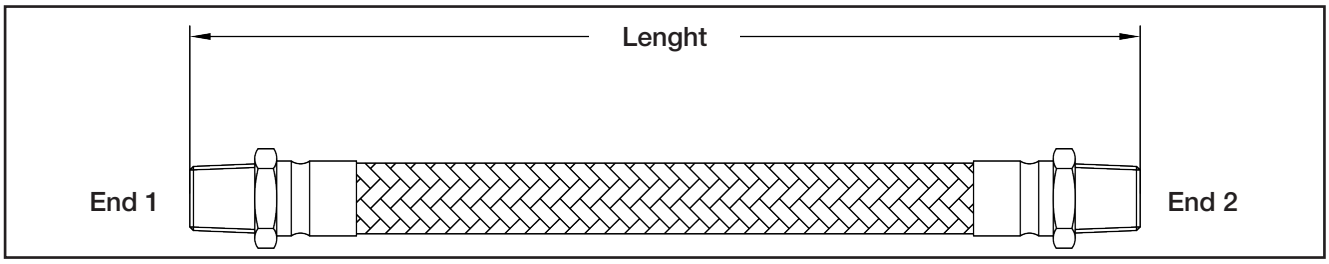
Certificates are available on www.elfit.com

Ambient temperature

		Flexible conduit type	Method of protection	Construction material		Size	Ambient temperature
				Fixed fitting	Revolving fitting		
Fixed fitting		SPH - SPG - SPZ	Ex d IIC	Stainless steel	/	1/2" ÷ 1"	-20°C +150°C
				Galvanized steel	/	1 ¼" ÷ 4"	
		SPH - SPG - SPZ	Ex d IIC	Stainless steel	/	1/2" ÷ 1"	-60°C +150°C
Revolving fitting	B..	SPN - SPI - SPY - SPD SPP - SPE - SPT	Ex d IIB	Stainless steel	Galvanized steel	1/2" ÷ 1"	-20°C +60°C
				Galvanized steel	Galvanized steel	1 ¼" ÷ 4"	
		SPN - SPI - SPY - SPD SPP - SPE - SPT	Ex d IIB	Stainless steel	Stainless steel	1/2" ÷ 1"	-60°C +60°C
	R..	SPRN - SPRI - SPRY - SPRD SPRP - SPRE - SPRT	Ex d IIC	Stainless steel	Galvanized steel	1/2" ÷ 1"	-20°C +60°C
				Galvanized steel	Galvanized steel	1 ¼" ÷ 4"	
		SPRN - SPRI - SPRY - SPRD SPRP - SPRE - SPRT	Ex d IIC	Stainless steel	Stainless steel	1/2" ÷ 4"	-60°C +60°C
	RB..	SPRN - SPRI - SPRY - SPRD SPRP - SPRE - SPRT	Ex d IIB	Stainless steel	Stainless steel	1/2" ÷ 4"	-60°C +150°C

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End 1 / End 2		Method of protection IIC		Method of protection IIB		Method of protection IIC		Method of protection IIB (Ta +150°C)	
		Fixed male	Fixed female	Revolving male	Revolving female	Revolving male	Revolving female	Revolving male	Revolving female
Method of protection IIC	Fixed male	SPH	SPG	SPN	SPI	SPRN	SPRI	SPRN	SPRI
	Fixed female		SPZ	SPY	SPD	SPRY	SPRD	SPRY	SPRD
Method of protection IIB	Revolving male			SPP	SPE				
	Revolving female				SPT				
Method of protection IIC	Revolving male					SPRP	SPRE		
	Revolving female						SPRT		
Method of protection IIB	Revolving male							SPRP	SPRE
	Revolving female								SPRT

Order code example

SPH	1	6	G
MODEL	SIZE	LENGHT	MATERIAL

Flexible conduits: lenghts and method of protection		
Lenght (mm)		Method of protection
from	to	
≥ 300	≤ 5000	Ex d IIB ÷ Ex d IIC
≥ 5000	≤ 10000	Ex d IIB

Conduit standard lenght	
Cod.	mm
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000

Thread hubs GAS UNI ISO 7/1

Size	1	2	3	4	5	6	7	8	9	10
Thread	1/2"	3/4"	1"	1 ¼"	1 ½"	2	2 ½"	3"	3 ½"	4"
Ø min. int.	12	16	25,1	32,2	38,2	50,1	63,1	73,1	73,1	100,1
Curving radius min.	40	60	75	90	110	150	200	225	225	280

TECHNICAL NOTES:

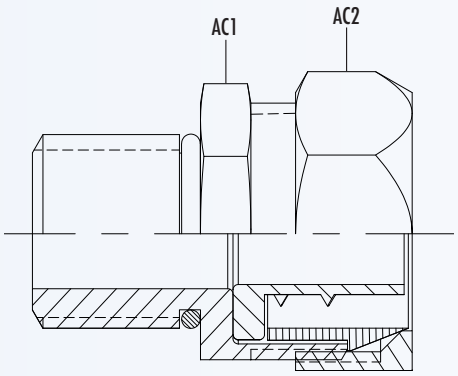
- *The flexible conduits and related fittings can be welded only by the manufacturer that certifies the method of protection*
- *Welded fittings: from 1/2 " to 1" stainless steel - from 1 1/4 " to 4" galvanized steel*
- *Revolving fittings: galvanized steel*
- *Flexible conduit with spiralled sheath : stainless steel*
- *Standard in galvanised steel (example code SPH56**G**)*
- *Available also in stainless steel (example code SPH56**S**)*
- *Available also with NPT thread (example code SPH3**N**10G)*
- *Available also with ISO thread (example code SPH3**I**4G)*

ESP series flexible conduits are used to connect increased safety offset equipment or devices subject to vibrations. Compared to traditional explosion-proof conduits, they are lighter, and they are characterized by a mechanical assembly without the use of welding, greatly simplifying installation and maintenance. The fittings are available in nickel-plated brass and stainless steel, while the ESP flexible conduits are covered externally with a UV-resistant polyurethane sheath for a greater protection of the internal metal mesh.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex eb IIC Gb - Ex tb IIIC Db	
Certification:	ATEX IMQ 22 ATEX 057U	
	IECEx IECEx IMQ 22.0009U	Per tutti i dati di certificazione IEC Ex scaricare il certificato dal sito www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-7: 2015+A1:2018, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2018, IEC60079-7: 2017, IEC60079-31: 2013 Direttiva RoHS 2011/65/UE	
Operating temperature:	-60°C +80°C	
Degree of protection:	IP66	

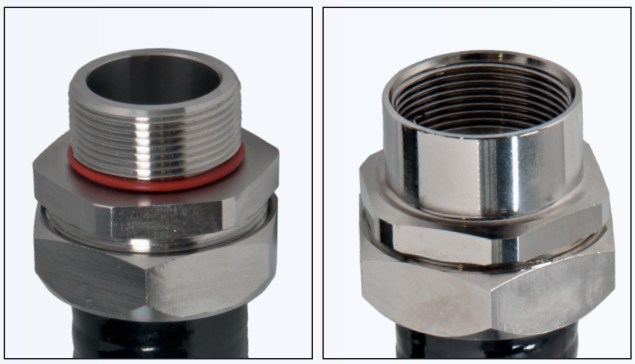
Certificates are available on www.elfit.com



FITTINGS KEY OPENINGS (mm)

	01	1	2	3	4	5	6
AC1	26	30	37	45	52	62	74
AC2	24	28	35	42	50	58	70

The fitting can be supplied with male or female thread

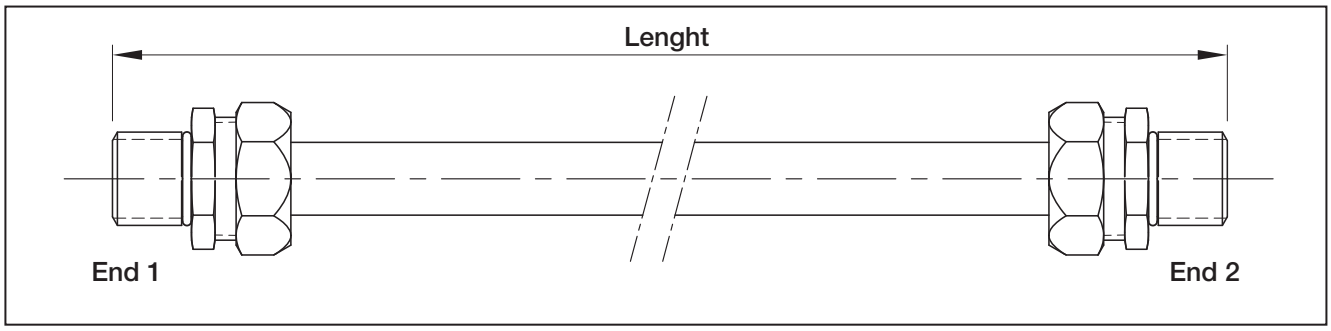


Locknuts available on request

Locknuts	ISO thread	Nickel-plated brass	Stainless steel
	M16x1,5	**DL01IB**	**DL01IS**
	M20x1,5	**DL1IB**	**DL1IS**
	M25x1,5	**DL2IB**	**DL2IS**
	M32x1,5	**DL3IB**	**DL3IS**
	M40x1,5	**DL4IB**	**DL4IS**
	M50x1,5	**DL5IB**	**DL5IS**
	M63x1,5	**DL6IB**	**DL6IS**

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	Male	Female
Male	ESPH	ESPG
Female		ESPZ

Conduit standard lenght	
Cod.	mm
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000

Sample order code

ESPH	1	I	B	5
MODEL	SIZE	THREAD	MATERIAL	LENGHT

Technical data flexible

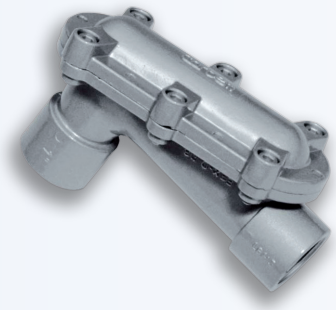
Compressive strength 1250 N
Impact resistance 6 J
Tensile strength 1000N
Suspended load resistance 450 N

Size	01	1	2	3	4	5	6
ISO thread	M16x1,5	M20x1,5	M25x1,5	M32x1,5	M40x1,5	M50x1,5	M63x1,5
ISO 7/1	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2"
NPT	3/8"	1/2"	3/4"	1"	1 ¼"	1 ½"	2"
Ø min. int.	9,7	13,4	17,9	23,8	31,8	37,7	47,5
Curving radius min.	70	90	120	140	190	240	300

TECHNICAL NOTES:

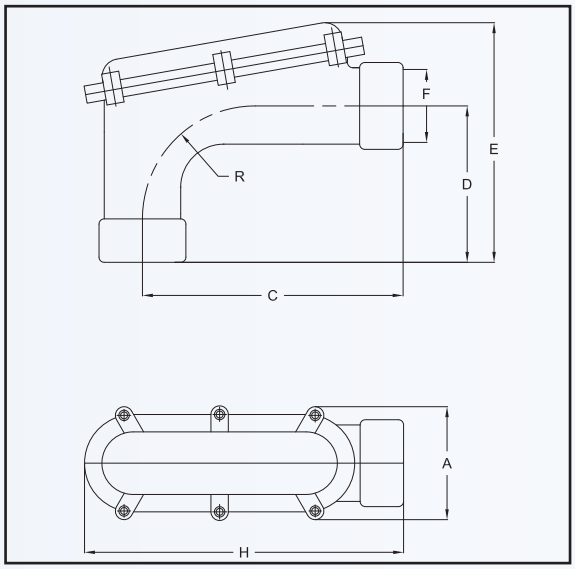
- *Available also in nickel brass (example code ESPH5I**B**6)*
- *Available also in stainless steel (example code ESPH5I**S**6)*
- *Standard with ISO thread (example code ESPH3**I**B6)*
- *Available also with ISO 228/1 thread (example code ESPH3**C**B6)*
- *Available also with NPT thread (example code ESPH3**N**B6)*
- *Available also three pieces union B.. and R.. series*
- *For connection and use, see the safety, maintenance and mounting instruction*
- *Possibility of separate supply flexible and fittings for flexible conduit*

LBH series open elbows L shaped with small radius are used for the cables insertion in conduit system of electrical installations. The back opening enables an easy inspection of the installation and easy insertion of electrical cables.



Classification: 2014/34/UE	Group II	Category 2G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	
Marking:	CE 0722 Ex II 2 G Ex d IIB	
Certification:	ATEX CESI 03 ATEX 141 U	
Standards:	CENELEC EN 60079-0: 2006, EN 60079-1: 2004 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Ambient Temp.:	-20°C +60°C (Max. operating temperature +80°C)	

Certificates are available on www.elfit.com



SELECTION TABLE OF LBH OPEN ELBOWS

Code In aluminium	Thread	Dimensions in mm						Weight
	F	A	H	C	D	E	R	Kg
LBH1	1/2" ISO 7/1	70	165	132	45	95	21	0,434
LBH2	3/4" ISO 7/1	70	165	132	45	95	21	0,404
LBH3	1" ISO 7/1	70	168	132	60	112	30	0,455
LBH4	1 ¼" ISO 7/1	100	230	175	83	155	50	1,277
LBH5	1 ½" ISO 7/1	110	265	220	83	132	70	1,142
LBH6	2" ISO 7/1	110	265	220	80	132	70	1,024
LBH7	2 ½" ISO 7/1	136	363	267	140	250	96	3,569
LBH8	3" ISO 7/1	136	363	267	140	250	96	3,171
LBH10	4" ISO 7/1	181	720	605	175	305	125	10,850

Order code example

LBH	4	N
MODEL	SIZE	THREAD

TECHNICAL NOTES:

- *Available also with NPT thread (example code LBH3**N**)*
- *Available also with ISO7/1RP thread (example code LBH2**C**)*
- *Available also with ISO METRIC thread (example code LBH4**I**)*
- *1/4" and 3/8" sizes can be obtained by assembling to the 1/2" LBH1 elbow the corresponding **RE114** or **RE138***

CORTEM GROUP®

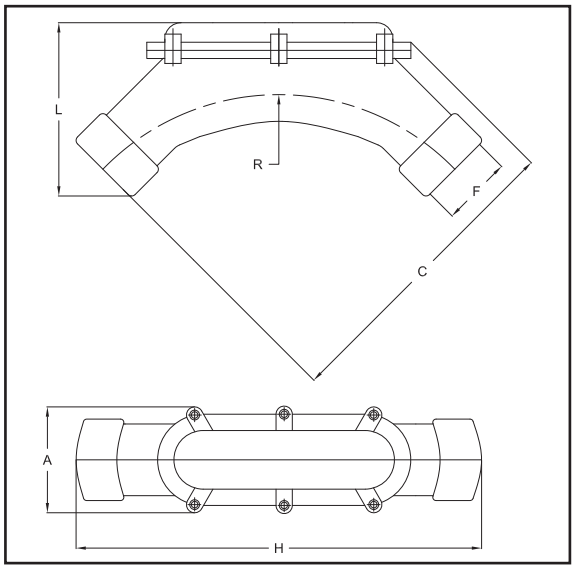
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LBHS series open elbows with a large radius are used for the cables insertion in conduit system of electrical installations.
The back opening enables an easy inspection of the installation and an easy insertion of electrical cables.



Classification: 2014/34/UE	Group II	Category 2G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	
Marking:	CE 0722 Ex II 2 G Ex d IIB	
Certification:	ATEX CESI 03 ATEX 141 U	
	TR CU AVAILABLE	All TR CU certification data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2006, EN 60079-1: 2004 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Ambient Temp.:	-20°C +60°C (Max. operating temperature +80°C)	

Certificates are available on www.elfit.com



SELECTION TABLE OF LBHS OPEN ELBOWS

Code In aluminium	Thread	Dimensions in mm					Weight
	F	A	H	C	L	R	Kg
LBHS1	1/2" ISO 7/1	70	305	197	110	195	0,543
LBHS2	3/4" ISO 7/1	70	305	197	110	195	0,467
LBHS3	1" ISO 7/1	70	300	190	110	195	0,629
LBHS4	1 ¼" ISO 7/1	105	400	288	145	260	1,539
LBHS5	1 ½" ISO 7/1	105	400	288	145	260	1,481
LBHS6	2" ISO 7/1	120	495	348	165	315	2,297
LBHS7	2 ½" ISO 7/1	142	565	448	205	350	4,473
LBHS8	3" ISO 7/1	149	688	478	220	445	4,914
LBHS10	4" ISO 7/1	164	910	680	310	574	11,110

Order code example

LBHS	4	N
MODEL	SIZE	THREAD

TECHNICAL NOTES:

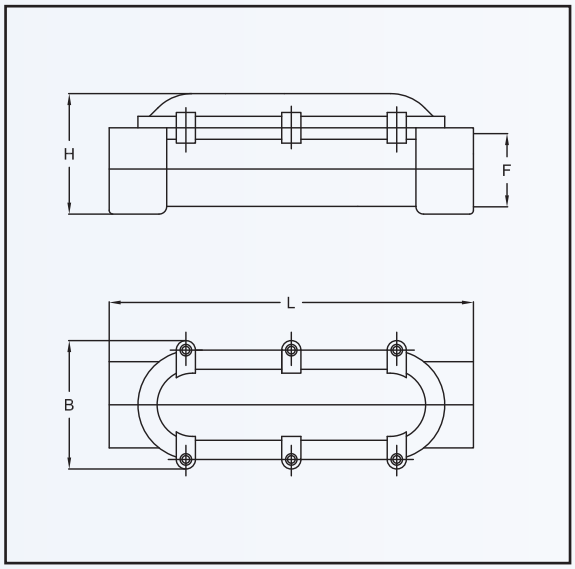
- *Available also with NPT thread (example code LBHS3**N**)*
- *Available also with ISO METRIC thread (example code LBHS4**I**)*

EKC pulling boxes are used in conduit system of electrical plant to facilitate the cables insertion. The back opening enables an easy inspection of the installation and an easy insertion of electrical cables.



Classification: 2014/34/UE	Group II	Category 2G
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	
Marking:	CE 0722 Ex II 2 G Ex d IIB	
Certification:	ATEX CESI 03 ATEX 141 U	
Standards:	CENELEC EN 60079-0: 2006, EN 60079-1: 2004 and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Ambient Temp.:	-20°C +60°C (Max. operating temperature +80°C)	

Certificates are available on www.elfit.com



SELECTION TABLE OF EKC PULLING BOXES

Code In aluminium	Thread	Dimensions in mm			Weight
	F	H	L	S	Kg
EKC1	1/2" ISO 7/1	59	171	70	0,508
EKC2	3/4" ISO 7/1	59	171	70	0,485
EKC3	1" ISO 7/1	64	181	70	0,558
EKC4	1 ¼" ISO 7/1	87	240	99	1,211
EKC5	1 ½" ISO 7/1	87	240	99	1,135
EKC6	2" ISO 7/1	112	298	105	1,745
EKC7	2 ½" ISO 7/1	172	380	138	4,003
EKC8	3" ISO 7/1	172	380	138	3,609
EKC10	4" ISO 7/1	196	755	180	10,320

Order code example

EKC	4	N
MODEL	SIZE	THREAD

TECHNICAL NOTES:

- *Available also with NPT thread (example code EKC3**N**)*
- *Available also with ISO METRIC thread (example code EKC4**I**)*

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BC rigid conduits

Rigid conduits are used in hazardous areas to connect electrical equipment setting up a complete explosion proof system throught sealing fittings. The conduits are drown inside so that all roughness, which could damage the electrical cables, are eliminated.



Installation: EN 60079.14	zone 1 - zone 2 (Gas)
Standards:	EN 60079-0, EN 60079-1
Standard construction:	UNI 7683 galvanized steel conduit Standard bar lenght: 6 meters Plastic couplings for thread protection ISO7/1 thread
Upon request:	Thread NPT: (example code BC-1**N**) Bar of 3 m: (example code BC-3/**300**)

SELECTION TABLE OF RIGID CONDUITS

Code	Thread
BC-1	1/2" ISO 7/1
BC-2	3/4" ISO 7/1
BC-3	1" ISO 7/1
BC-4	1 ¼" ISO 7/1
BC-5	1 ½" ISO 7/1
BC-6	2" ISO 7/1
BC-7	2 ½" ISO 7/1
BC-8	3" ISO 7/1
BC-10	4" ISO 7/1

DB...A aluminium bushing

DB...A series bushings are made in aluminium. They are screwed to the pipe end they work as a cable guard. They prevent the cable from rubbing on any pipe burr/edge which could damage its sheath.



Standard construction:	Low copper content aluminium alloy body ISO 228 thread
Upon request:	NPT thread: (example code DB3**NA**) ISO METRIC: (example code DB3**IA**) Galvanised steel (example code DB3**G**) Stainless steel (example code DB3**S**)

SELECTION TABLE ALUMINIUM BUSHINGS

Code	Thread	Weight Kg
DB1A	1/2" ISO 7/1	0,012
DB2A	3/4" ISO 7/1	0,014
DB3A	1" ISO 7/1	0,020
DB4A	1 ¼" ISO 7/1	0,025
DB5A	1 ½" ISO 7/1	0,032
DB6A	2" ISO 7/1	0,046
DB7A	2 ½" ISO 7/1	0,062
DB8A	3" ISO 7/1	0,071
DB10A	4" ISO 7/1	0,107
DB12A	5" ISO 7/1	0,134

DB...P polypropylene bushings

DB...P series bushings, polypropylene made, are screwed to the pipe end and they work as a cable guard. They prevent the cable from rubbing on any pipe burr/edge which could damage its sheath.



Standard construction:	Polypropylene thermoplastic moulding ISO 228 thread

SELECTION TABLE FOR POLYPROPYLENE BUSHING

Code	Thread	Weight Kg
DB1P	1/2" ISO 7/1	0,012
DB2P	3/4" ISO 7/1	0,014
DB3P	1" ISO 7/1	0,020
DB4P	1 ¼" ISO 7/1	0,025
DB5P	1 ½" ISO 7/1	0,032
DB6P	2" ISO 7/1	0,046
DB7P	2 ½" ISO 7/1	0,062
DB8P	3" ISO 7/1	0,071

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DBT aluminium bushings with earth screw

DBT series bushings, aluminium made, are screwed to the pipe end and they work as a cable guard. They prevent the cable from rubbing on any pipe burr/edge which could damage its sheat.
They are equipped with earth screw for metal parts grounding.



Standard construction:	Low copper content aluminium alloy body Stainless steel screw ISO 228 thread
Upon request:	NPT thread: (example code DBT3**NA**) ISO METRIC thread: (example code DBT3**IA**) Galvanised steel (example code DBT3**G**) Stainless steel (example code DBT3**S**)

SELECTION TABLE ALUMINIUM BUSHINGS

Code	Thread	Weight Kg
DBT1A	1/2" ISO 7/1	0,016
DBT2A	3/4" ISO 7/1	0,018
DBT3A	1" ISO 7/1	0,024
DBT4A	1 ¼" ISO 7/1	0,033
DBT5A	1 ½" ISO 7/1	0,040
DBT6A	2" ISO 7/1	0,054
DBT7A	2 ½" ISO 7/1	0,070
DBT8A	3" ISO 7/1	0,079
DBT10A	4" ISO 7/1	0,115
DBT12A	5" ISO 7/1	0,142

MC female closing plugs

MC series female plugs are used to close pipes ends.



Standard construction:	Galvanised steel or aluminium Standard thread: ISO 7/1 Rp
Upon request:	NPT thread: (example code MC3**NG**) ISO METRIC thread: (example code MC3**IG**) Stainless steel (example code MC3**S**)

SELECTION TABLE OF FEMALE CLOSING PLUGS

Code	Thread	Material	Weight Kg
MC1G	1/2" ISO 7/1	Galvanised steel	0,035
MC2G	3/4" ISO 7/1	Galvanised steel	0,039
MC3G	1" ISO 7/1	Galvanised steel	0,045
MC4G	1 ¼" ISO 7/1	Galvanised steel	0,052
MC5G	1 ½" ISO 7/1	Galvanised steel	0,285
MC6G	2" ISO 7/1	Galvanised steel	0,335
MC7A	2 ½" ISO 7/1	Aluminium	0,797
MC8A	3" ISO 7/1	Aluminium	0,887
MC10A	4" ISO 7/1	Aluminium	1,119

DL metal locknuts

DL series locknuts are used to block cable glands or fittings with cylindrical thread on 'Ex e' or 'Ex i' junction box flange or walls with drilling for cables entry.



Standard construction:	Galvanised steel o Aluminium (look at the table below) ISO 228/1 thread
Upon request:	Other threads Other materials

SELECTION TABLE OF DL LOCKNUTS

Code	Thread	Material	Weight Kg
DL1G	1/2" ISO 228/1	Galvanised steel	0,008
DL2G	3/4" ISO 228/1	Galvanised steel	0,011
DL3G	1" ISO 228/1	Galvanised steel	0,013
DL4G	1 ¼" ISO 228/1	Galvanised steel	0,037
DL5A	1 ½" ISO 228/1	Aluminium	0,027
DL6A	2" ISO 228/1	Aluminium	0,034
DL7A	2 ½" ISO 228/1	Aluminium	0,052
DL8A	3" ISO 228/1	Aluminium	0,092
DL10A	4" ISO 228/1	Aluminium	0,132
DL12A	5" ISO 228/1	Aluminium	0,245

DL...P polyamide locknuts

DL...P series locknuts are used to block polyamide cable glands with cylindrical thread on 'Ex e' or 'Ex i' junction box walls or flange with drilling for cables entry.



Standard construction:	Polyamide
Upon request:	Marking Ex i: (example code DL02IXIP)

SELECTION TABLE OF DL LOCKNUTS

Code	ISO thread	Weight Kg
DL02IXEP	M12x1,5	0,004
DL01IXEP	M16x1,5	0,005
DL1IXEP	M20x1,5	0,005
DL2IXEP	M25x1,5	0,006
DL3IXEP	M32x1,5	0,006
DL4IXEP	M40x1,5	0,009
DL5IXEP	M50x1,5	0,013
DL6IXEP	M63x1,5	0,019

SELECTION TABLE OF DL LOCKNUTS

Code	PG thread	Weight Kg
DL1PXEP	PG7	0,003
DL2PXEP	PG9	0,004
DL3PXEP	PG11	0,005
DL4PXEP	PG13,5	0,005
DL5PXEP	PG16	0,006
DL6PXEP	PG21	0,006
DL7PXEP	PG29	0,009
DL8PXEP	PG36	0,013
DL9PXEP	PG42	0,019
DL10PXEP	PG48	0,026

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MT conduit clamps

MT series conduit clamps are used for mounting of cable conduits perpendicular to the support structure.



Standard construction:	Galvanised steel Galvanized bolts and nuts.

SELECTION TABLE OF CONDUIT CLAMPS

Code	Thread	Weight Kg
MT1	1/2"	0,093
MT2	3/4"	0,129
MT3	1"	0,150
MT4	1 ¼"	0,194
MT5	1 ½"	0,232
MT6	2"	0,275
MT7	2 ½"	0,310
MT8	3"	0,579
MT10	4"	-

UBD U-bolts

U-bolts are used to fix rigid cable conduits to flat surfaces.



Standard construction:	Galvanised steel
Upon request:	Stainless steel (example code UBD3S)

SELECTION TABLE OF UBD U-BOLTS

Code	Ø cable conduits	Weight Kg
UBD1G	1/2"	0,035
UBD2G	3/4"	0,039
UBD3G	1"	0,045
UBD4G	1 ¼"	0,052
UBD5G	1 ½"	0,285
UBD6G	2"	0,335
UBD7G	2 ½"	0,797
UBD8G	3"	0,887
UBD10G	4"	1,119
UBD12G	5"	1,327

GF saddles

Saddles are used to fix cable conduits to walls or to flat surfaces.



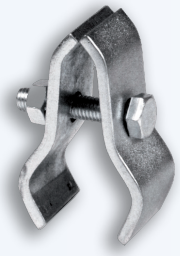
Standard construction:	Galvanised steel or aluminium
Upon request:	Stainless steel (example code GF3S)

SELECTION TABLE OF GF SADDLES

Code	Pipe diameter	Threading	Weight Kg
GF1G	21	1/2"	0,028
GF2G	26	3/4"	0,037
GF3G	34	1"	0,045
GF4G	42	1 ¼"	0,087
GF5G	50	1 ½"	0,115
GF6G	61	2"	0,156
GF7A	77	2 ½"	0,158
GF8A	90	3"	0,215
GF10A	115	4"	0,284
GF12A	140	5"	-

MP conduit clamps

MP clamps are used for mounting cable conduits in paralell to the support structure.



Standard construction:	Galvanised steel
Upon request:	Stainless steel (example code MP3S)

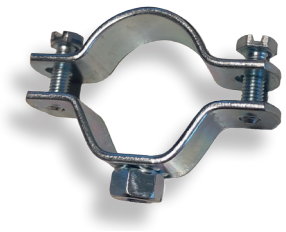
SELECTION TABLE OF MP CONDUIT CLAMPS

Code	Diameter	Weight Kg
MP1	1/2"	0,138
MP2	3/4"	0,145
MP3	1"	0,198
MP4	1 ¼"	0,530
MP5	1 ½"	0,590
MP6	2"	-
MP7	2 ½"	-
MP8	3"	-
MP10	4"	-

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Projection electrowelded collar connection packaged in a single bag, suitable for fixing steel pipes but usable for all pipes.



Standard construction:	Galvanised steel or aluminium
Upon request:	Stainless steel (example code GF3S)

SELECTION TABLE OF COLLAR

Code	Tube diameter	⌀ ÷ ∅	Int. threading	Weight Kg
CST1	1/2"	20 ÷ 24	M8	0,65
CST2	3/4"	25 ÷30	M8	0,77
CST3	1"	32 ÷ 36	M8	0,92
CST4	1 ¼"	38 ÷ 44	M8	0,98
CST5	1 ½"	46 ÷ 50	M8	1,15
CST6	2"	58 ÷ 62	M8	1,24
CST7	2 ½"	74 ÷ 80	M10	1,75
CST8	3"	84 ÷ 89	M10	1,96
CST10	4"	112 ÷ 118	M10	2,55



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ELectrical FITtings

Junction and pulling boxes





S series junction boxes are usually installed for the conduit connection and can be used for the insertion of conductors only (empty boxes) or for the derivation of conductors (boxes with terminals).
The wide range offered includes several models with different sizes and threads.

EMPTY ENCLOSURES



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex d IIC Gb Ex tb IIIC Db IP66/67	
Certification:	ATEX CESI 03 ATEX 032U	
	IECEx IECEx CES 15.0012U	For IEC Ex and others certifications data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-31: 2009 e and EUROPEAN DIRECTIVE 2014/34/UE IEC60079-0: 2011, IEC60079-1: 2007-04, IEC60079-31: 2008 Directive RoHS 2011/65/UE	
Operating temperature:	-40°C (-20°C) +110°C	CESI 03 ATEX 032U
	-40°C (-20°C) +160°C	CESI 03 ATEX 059U
Degree of protection:	IP66/67	

Certificates are available on www.elfit.com

MECHANICAL FEATURES

Body and lid: Low copper content aluminium alloy. Screw-on lid with safety fastening grub screw
Gasket: Acid/hydrocarbon-resistant silicone, located between body and lid
Entries: GAS Rp UNI ISO 7/1 thread
Certification label: Adhesive label located on lid for size 6 and 9 boxes; on body for size 4
Bolts and screws: Stainless steel
Earth screws: Stainless steel. On inside and outside of body complete with anti-rotation brackets
Corrosion Resistance: The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN 60068-2-30 (hot/humid cycles) and EN 60068-2-11 (salt mist tests)

ACCESSORIES AVAILABLE ON REQUEST/ SPECIAL REQUESTS

AISI 316 L stainless steel boxes (Ex. SC16.1**S**)
Electropolished AISI 316 L stainless steel boxes (Ex. SC16.1**SE**)
Boxes coated with RAL 7035 paint (Ex. SC16.1**V**)
External coating in different colour (specify the RAL number)
Other threads:

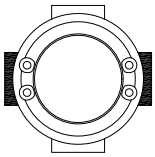
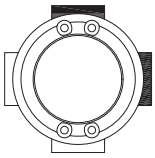
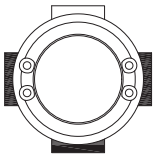
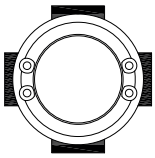
- NPT threads ANSI B1.20.1 (Ex. SC26.1**N**)
- GAS UNI ISO 228 thread (Ex. SC26.1**C**)
- Metric threads ISO 261/965 (Ex. SC26.1**I**)



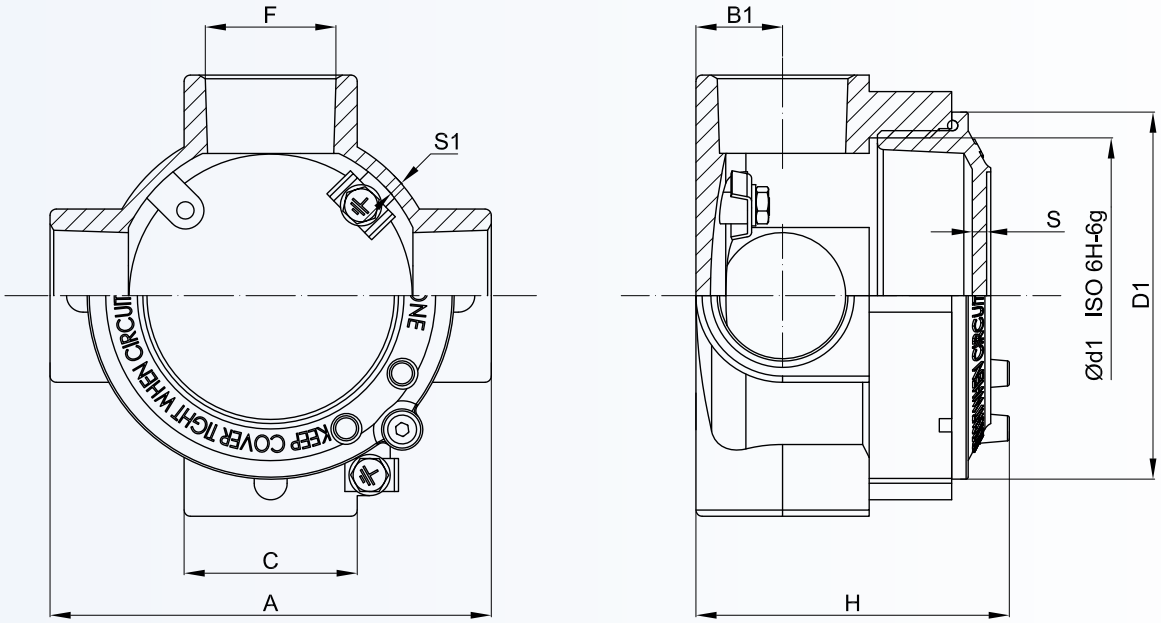
AISI 316 L stainless steel box code SX-36.1SE with electropolished finish

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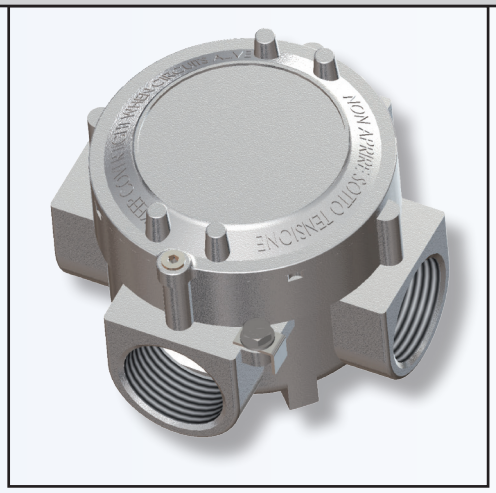
S SERIES ENCLOSURE SELECTION CHART

Code	Position of entries	GAS UNI ISO 7/1	Model	Outside dimensions mm A	D1	H	C	B1	Inside dimensions mm Ød1	S	S1	Weight kg
SC14.1		2 x 1/2"	A	72	65	61	34	17	54x2	3,5	3,5	0,27
SC24.1		2 x 3/4"	A	72	65	61	34	17	54x2	3,5	3,5	0,25
SC16.1		2 x 1/2"	A	100	89	67	34	17	80x2	3,5	3,5	0,41
SC26.1		2 x 3/4"	A	100	89	67	34	17	80x2	3,5	3,5	0,38
SC36.1		2 x 1"	A	107	89	75	42	21	80x2	3,5	3,5	0,48
SC29.1		2 x 3/4"	B	190	146	105	60	30	130x2	4	7	
SC39.1		2 x 1"	B	190	146	105	60	30	130x2	4	7	1,30
SC59.1		2 x 1 1/2"	B	190	146	105	60	30	130x2	4	7	
SC69.1		2 x 2"	B	190	146	110	70	35	130x2	4	7	1,54
SL14.1		2 x 1/2"	A	72	65	61	34	17	54x2	3,5	3,5	0,28
SL24.1		2 x 3/4"	A	72	65	61	34	17	54x2	3,5	3,5	0,24
SL16.1		2 x 1/2"	A	100	89	67	34	17	80x2	3,5	3,5	
SL26.1		2 x 3/4"	A	100	89	67	34	17	80x2	3,5	3,5	0,40
SL36.1		2 x 1"	A	107	89	75	42	21	80x2	3,5	3,5	0,49
SL29.1		2 x 3/4"	B	166	146	105	60	30	130x2	4	7	1,61
SL39.1		2 x 1"	B	166	146	105	60	30	130x2	4	7	1,20
SL59.1		2 x 1 1/2"	B	166	146	105	60	30	130x2	4	7	1,45
SL69.1		2 x 2"	B	166	146	110	70	35	130x2	4	7	1,51
ST14.1		3 x 1/2"	A	72	65	61	34	17	54x2	3,5	3,5	0,27
ST24.1		3 x 3/4"	A	72	65	61	34	17	54x2	3,5	3,5	0,25
ST16.1		3 x 1/2"	A	100	89	67	34	17	80x2	3,5	3,5	0,40
ST26.1		3 x 3/4"	A	100	89	67	34	17	80x2	3,5	3,5	0,38
ST36.1		3 x 1"	A	107	89	75	42	21	80x2	3,5	3,5	0,48
ST29.1		3 x 3/4"	B	190	146	105	60	30	130x2	4	7	1,77
ST39.1		3 x 1"	B	190	146	105	60	30	130x2	4	7	1,70
ST59.1		3 x 1 1/2"	B	190	146	105	60	30	130x2	4	7	1,48
ST69.1		3 x 2"	B	190	146	110	70	35	130x2	4	7	1,53
SX14.1		4 x 1/2"	A	72	65	61	34	17	54x2	3,5	3,5	0,26
SX24.1		4 x 3/4"	A	72	65	61	34	17	54x2	3,5	3,5	
SX16.1		4 x 1/2"	A	100	89	67	34	17	80x2	3,5	3,5	0,39
SX26.1		4 x 3/4"	A	100	89	67	34	17	80x2	3,5	3,5	0,36
SX36.1		4 x 1"	A	107	89	75	42	21	80x2	3,5	3,5	0,43
SX29.1		4 x 3/4"	B	190	146	105	60	30	130x2	4	7	1,94
SX39.1		4 x 1"	B	190	146	105	60	30	130x2	4	7	1,85
SX59.1		4 x 1 1/2"	B	190	146	105	60	30	130x2	4	7	1,51
SX69.1		4 x 2"	B	190	146	110	70	35	130x2	4	7	1,63

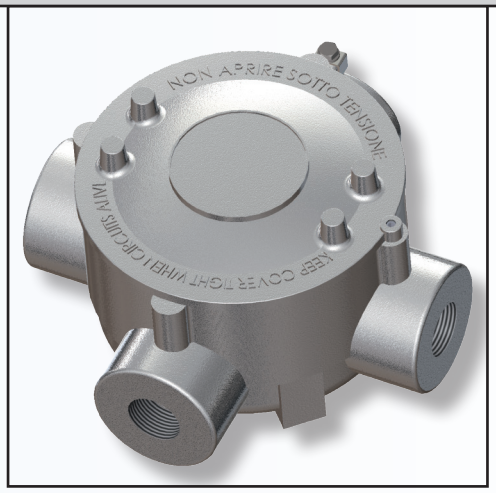
DIMENSIONAL DRAWING

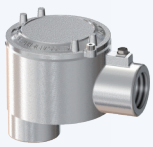


MODEL A



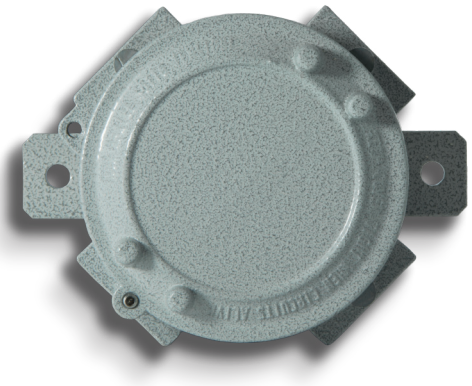
MODEL B



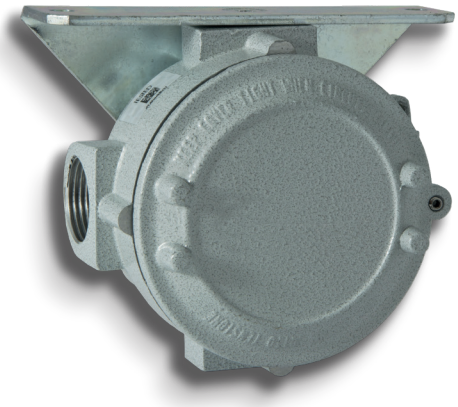
Code	MODEL	F GAS UNI ISO 7/1	Outside dimensions mm A	D1	H	C	B1	Inside dimensions mm Ød1	S	S1	Weight kg
SB14		2 x 1/2"	90	65	90	39	43	54x2	3,5	3,5	0,34
SB24		2 x 3/4"	90	65	90	39	43	54x2	3,5	3,5	0,34
SB16		2 x 1/2"	110	90	90	45	43	80x2	3,5	5	0,34
SB26		2 x 3/4"	110	90	90	45	43	80x2	3,5	5	0,48
SB36		2 x 1"	114	90	96	45	52	80x2	3,5	5	0,54
SB49		2 x 1 1/4"	180	150	114	60	59	130x2	4	5	0,98
SB59		2 x 1 1/2"	180	150	114	60	59	130x2	4	5	1,25
SB69		2 x 2"	180	150	114	74	71	130x2	4	5	1,58

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MODEL SF



MODEL SSC

SF series enclosures (with wall-mounting bracket) and SSC series (with ceiling-mounting bracket) are installed on ducting paths as junction boxes for connecting and branching conductors.

Various different models are available and they can be supplied with multi-pole terminal strips or modular terminals.

MECHANICAL AND ELECTRICAL FEATURES

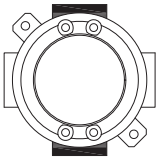
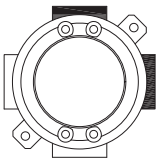
MOUNTING BRACKETS: Galvanized steel for SSC. Aluminium for SF.

Other features are identical to S series boxes

ACCESSORIES AVAILABLE ON REQUEST/ SPECIAL REQUESTS

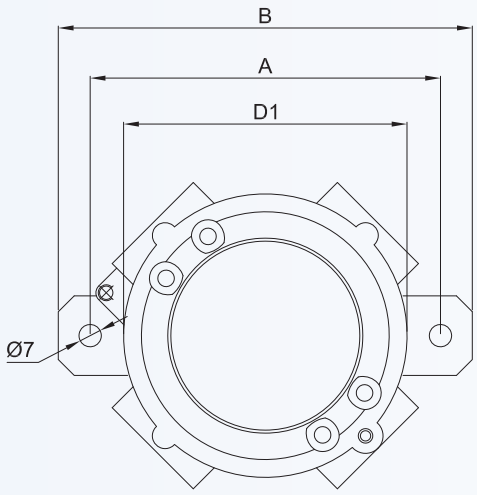
See S series boxes

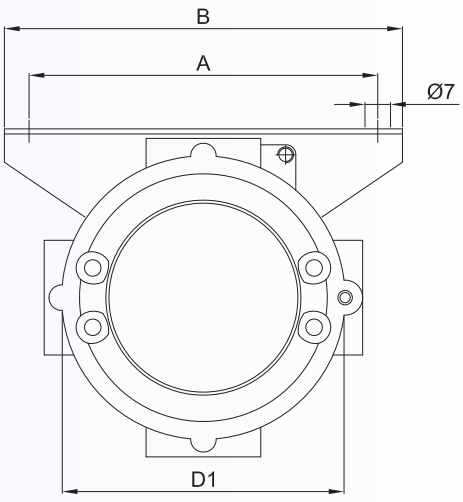
SF... SSC... SERIES ENCLOSURE SELECTION CHART

Code	Position of entries	GAS UNI ISO 7/1 F	Outside dimensions mm D1	A	B	Weight kg
SFC14.1		2 x 1/2"	65	75	90	0,30
SFC24.1		2 x 3/4"	65	75	90	0,28
SFC16.1		2 x 1/2"	89	110	130	0,45
SFC26.1		2 x 3/4"	89	110	130	0,42
SFC36.1		2 x 1"	89	110	130	0,52
SFC29.1		2 x 3/4"	146	160	180	1,37
SFC39.1		2 x 1"	146	160	180	1,35
SFC59.1		2 x 1 1/2"	146	160	180	
SFC69.1		2 x 2"	146	160	180	1,59
SFL14.1		2 x 1/2"	65	75	90	0,31
SFL24.1		2 x 3/4"	65	75	90	0,27
SFL16.1		2 x 1/2"	89	110	130	0,45
SFL26.1		2 x 3/4"	89	110	130	0,44
SFL36.1		2 x 1"	89	110	130	0,53
SFL29.1		2 x 3/4"	146	160	180	1,66
SFL39.1		2 x 1"	146	160	180	1,25
SFL59.1		2 x 1 1/2"	146	160	180	1,50
SFL69.1		2 x 2"	146	160	180	1,56

Code	Position of entries	GAS UNI ISO 7/1 F	Outside dimensions mm D1	A	B	Weight kg
SFT14.1		3 x 1/2"	65	75	90	0,30
SFT24.1		3 x 3/4"	65	75	90	0,28
SFT16.1		3 x 1/2"	89	110	130	0,44
SFT26.1		3 x 3/4"	89	110	130	0,42
SFT36.1		3 x 1"	89	110	130	0,52
SFT29.1		3 x 3/4"	146	160	180	1,82
SFT39.1		3 x 1"	146	160	180	1,75
SFT59.1		3 x 1 1/2"	146	160	180	1,53
SFT69.1		3 x 2"	146	160	180	1,58
SFX14.1		4 x 1/2"	65	75	90	0,29
SFX24.1		4 x 3/4"	65	75	90	
SFX16.1		4 x 1/2"	89	110	130	0,43
SFX26.1		4 x 3/4"	89	110	130	
SFX36.1		4 x 1"	89	110	130	0,47
SFX29.1		4 x 3/4"	146	160	180	1,98
SFX39.1		4 x 1"	146	160	180	1,90
SFX59.1		4 x 1 1/2"	146	160	180	1,56
SFX69.1		4 x 2"	146	160	180	1,68
SSC14.1		3 x 1/2"	65	65	80	0,38
SSC24.1		3 x 3/4"	65	65	80	0,36
SSC16.1		3 x 1/2"	89	110	125	0,57
SSC26.1		3 x 3/4"	89	110	125	0,54
SSC36.1		3 x 1"	89	110	125	0,64
SSC29.1		3 x 3/4"	146	130	150	1,94
SSC39.1		3 x 1"	146	130	150	1,91
SSC59.1		3 x 1 1/2"	146	130	150	
SSC69.1		3 x 2"	146	130	150	2,15

DIMENSIONAL DRAWING





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TERMINAL BOXES



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Marking:	CE 0722 Ex II 2 GD Ex db IIC T.. - Ex tb IIIC T..°C Db IP66/67	
Certification:	ATEX CESI 01 ATEX 105X	
	IECEx IECEx CES 22.0011	All IEC Ex and certification data can be downloaded at www.elfit.com
Standards:	CENELEC EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7: 2015/18, EN 60079-11: 2012, EN 60079-1: 2014 ed alla DIRETTIVA EUROPEA 2014/34/UE IEC60079-0: 2018, IEC60079-1: 2014, IEC60079-7: 2015/18, Direttiva RoHS 2011/65/UE	
Operating temperature:	-40°C +150°C	
Degree of protection:	IP66/67	

ELECTRICAL FEATURES

	Terminal boxes "Ex d"	***Terminal boxes "Ex e" e "Ex i"***
Rated voltage:	750 Vac/dc	630 Vac/dc
Rated frequency:	50 ÷ 60 Hz	50 ÷ 60 Hz
Terminal cross-sectional area:	1,5 mm^2 ÷ 70 mm^2	5 mm^2 ÷ 25 mm^2
Rated current:	8 A ÷ 175 A	5,5 A ÷ 65 A
Max. current density:	2.5 ÷ 6.6 A/mm^2	3 ÷ 6.6 A/mm^2

CHART 1

Ex db rated terminal strips			
Ambient temperature	Terminal material	Temperature class	Maximum surface temperature
-20°C +40°C -40°C +40°C	Polyamide (PA)	T6	T85°C
-20°C +65°C -40°C +65°C	Melamine (KrG) Wemid Stamin (KrS)	T5	T100°C
-20°C +150°C -40°C +150°C	Ceramic (Steatite)	T3	T200°C

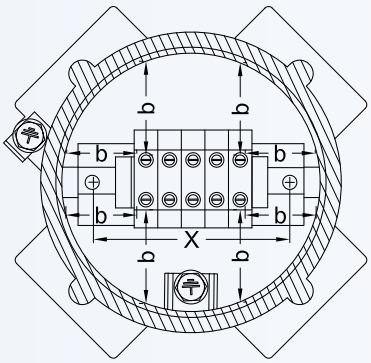
CHART 2

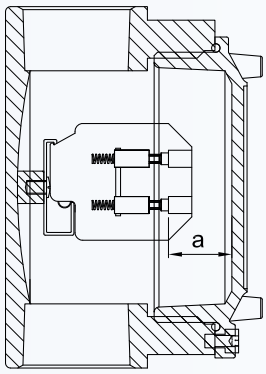
Ex eb or Ex i rated terminal strips (ATEX-certified terminals)			
Ambient temperature	Terminal material	Temperature class	Maximum surface temperature
-20°C +40°C -40°C +40°C	Polyamide (PA)	T6	T85°C
-20°C +65°C -40°C +65°C	Melamine (KrG) Wemid Stamin (KrS)	T5	T100°C
-20°C +80°C -40°C +80°C	Melamine (KrG) Stamin (KrS) Ceramic (Steatite)	T4	T135°C

Ex d IIC rated enclosures		*CROSS-SECTIONAL AREA AND MAXIMUM NUMBER OF TERMINALS*								
Enclosure type	**Size**	**1,5**	**2,5**	**4**	**6**	**10**	**16**	**25**	**35**	**70**
S.1 - SB	14-24	-	-	3	-	-	-	-	-	-
S.1 - SB	16-26-36	8	8	6	-	-	-	-	-	-
S.1	29-39-59-69	16	16	12	9	7	6	4	4	3
SB	49-59-69	16	16	12	10	8	7	5	5	4
Maximum current (A)	at 40°C	10	12,5	20	24	30	48	75	105	175
	at 65°C at 150°C	8	10,5	16	20	24	40	65	88	150
Maximum current density (A/mm^2) for terminals and cables		6,6	5	5	4	3	3	3	3	2,5
Maximum current (A) referring to 35% of the max. number of terminals as given in the table	at 40°C	13	19,5	24	30	50	64	100	140	210
	at 65°C at 150°C	10	12,5	20	24	30	48	75	105	175
Maximum current density (A/mm^2) for terminals and cables referring to 35% of the max. number of terminals as given in the table		8,5	7	6	5	5	4	4	4	3
Min.-max. rated voltage (V)		420 - 750								

Minimum distances for **Ex db** rated enclosures with terminals

Enclosure type	**Size**	Minimum surface distance		S.1	SB
		a min.	b+b min.	x	x
S.1 - SB	14-24	6	20	40	40
S.1 - SB	16-26-36			58.5	50
S.1	29-39-59-69			100	85
SB	49-59-69				







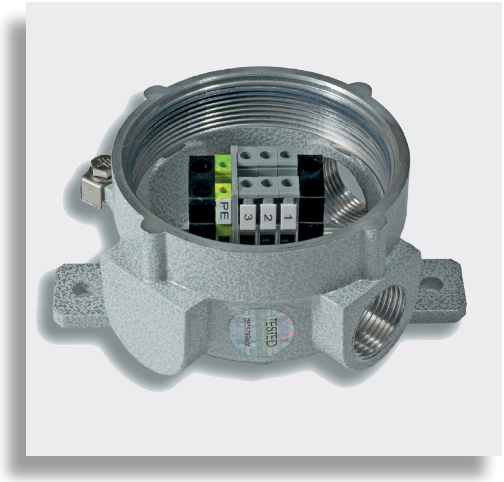
Enclosure code SFL-36.1 with 3 x AKZ-2.5 terminals and 1 x AKE2.5 earth terminal

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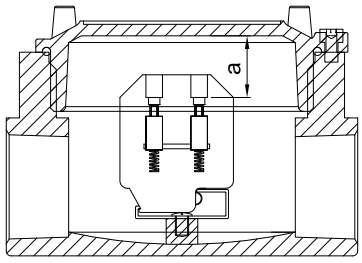
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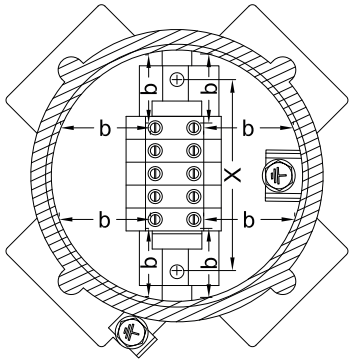
Ex eb rated enclosures		*CROSS-SECTIONAL AREA AND MAXIMUM NUMBER OF TERMINALS*														
Enclosure type	**Size**	**1,5**			**2,5**			**4**			**6**			**10**		
		Tab 1	Tab 2	Tab 3	Tab 1	Tab 2	Tab 3	Tab 1	Tab 2	Tab 3	Tab 1	Tab 2	Tab 3	Tab 1	Tab 2	Tab 3
S.1 - SB	14-24	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
S.1 - SB	16-26-36	8	8	8	8	8	8	6	6	6	-	-	-	-	-	-
S.1	29-39-59-69	16	16	16	16	16	16	16	14	14	9	9	9	7	7	7
SB	49-59-69	16	16	16	16	16	16	16	14	14	10	10	9	8	7	7
Maximum current (A)	at 40°C	8			10,5			17			20			24		
	at 65°C at 150°C	5,5			7,5			12			14			17		
Maximum current density (A/mm^2) for terminals and cables		6,6			5			5			4			3		
Min.-max. rated voltage (V)		275 - 630														

Ex eb rated enclosures		*CROSS-SECTIONAL AREA AND MAXIMUM NUMBER OF TERMINALS*					
Enclosure type	**Size**	**16**			**25**		
		Tab 1	Tab 2	Tab 3	Tab 1	Tab 2	Tab 3
S.1 - SB	14-24	-	-	-	-	-	-
S.1 - SB	16-26-36	-	-	-	-	-	-
S.1	29-39-59-69	6	6	6	4	4	4
SB	49-59-69	7	6	6	5	4	4
Maximum current (A)	at 40°C	40			65		
	at 65°C at 150°C	29			47		
Maximum current density (A/mm^2) for terminals and cables		3			3		
Min.-max. rated voltage (V)		275 - 630					



Enclosure code SFL-26.1 with 3 x RP-4 terminals and 1 x TR-2 earth terminal





NOTES:
Tab 1 for operating voltage U ≤ 400
Tab 2 for operating voltage U ≤ 500
Tab 3 for operating voltage U ≤ 630

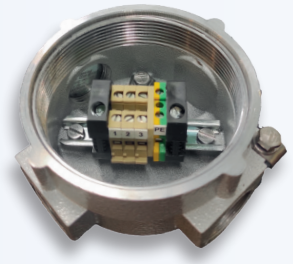
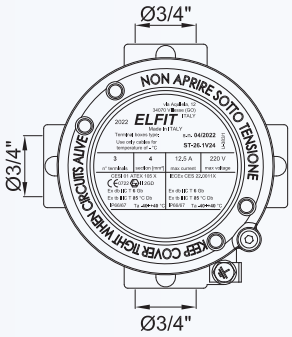
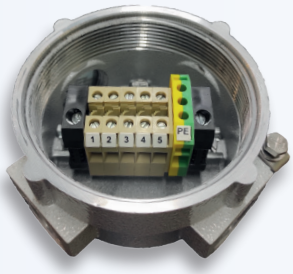
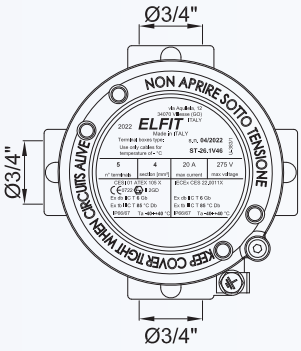
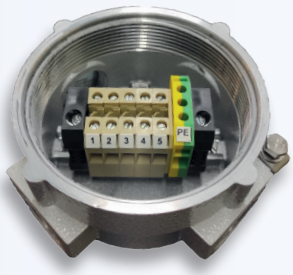
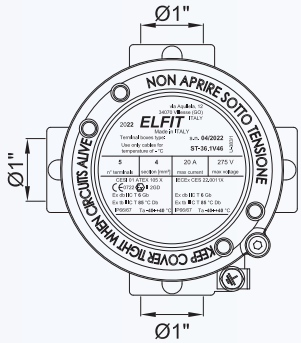
Minimum distances for **Ex eb** rated enclosures with terminals

	Enclosure type	Size	Minimum surface distance		S.1	SB
			a min.	b+b min.	x	x
Tab 1	S.1 - SB	14-24	6	20	40	40
	S.1 - SB	16-26-36			58.5	50
	S.1	29-39-59-69			100	85
	SB	49-59-69				

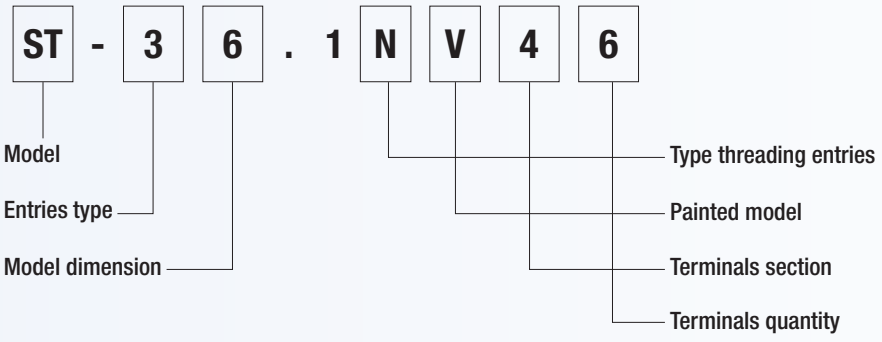
	Enclosure type	Size	Minimum surface distance		S.1	SB
			a min.	b+b min.	x	x
Tab 2	S.1 - SB	14-24	8	25	40	40
	S.1 - SB	16-26-36			58.5	50
	S.1	29-39-59-69			100	85
	SB	49-59-69				

	Enclosure type	Size	Minimum surface distance		S.1	SB
			a min.	b+b min.	x	x
Tab 3	S.1 - SB	14-24	10	32	40	40
	S.1 - SB	16-26-36			58.5	50
	S.1	29-39-59-69			100	85
	SB	49-59-69				

STANDARD JUNCTION BOX WITH TERMINALS

ILLUSTRATION	DRAWING	DESCRIPTION	CODE
		Junction box type ST-26.1V in aluminium alloy with polyester coating RAL 7035, with n.3 threading holes ∅ 3/4", complete with n.3 terminals sect. 2.5sqmm + n.1 earth terminal, numbered 1-2-3-PE.	**ST-26.1V24** Entries GAS UNI 7/1 **ST-26.1NV24** Entries NPT
		Junction box type ST-26.1V in aluminium alloy with polyester coating RAL 7035, with n.3 threading holes ∅ 3/4", complete with n.5 terminals sect. 4sqmm + n.1 earth terminal, numbered 1-2-3-4-5-PE.	**ST-26.1V46** Entries GAS UNI 7/1 **ST-26.1NV46** Entries NPT
		Junction box type ST-36.1V in aluminium alloy with polyester coating RAL 7035, with n.3 threading holes ∅ 1", complete with n.5 terminals sect. 2.5sqmm + n.1 earth terminal, numbered 1-2-3-4-5-PE.	**ST-36.1V46** Entries GAS UNI 7/1 **ST-36.1NV46** Entries NPT

Order code logic



Label detail mod. ST36.1V46



Notes:

- Other combinations are available on request (diameters, holes, terminal sections), contact the sales office.
- For the construction features see page pagina E.108
- Available on request the version with bracket for fixing the junction box, e.g. code S**F**T-26.1NV46 (painted box 3x3/4"NPT, n.5+1 terminals 4mmq + fixing bracket).

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ELFiT®

ELectrical FITtings

Weather proof series





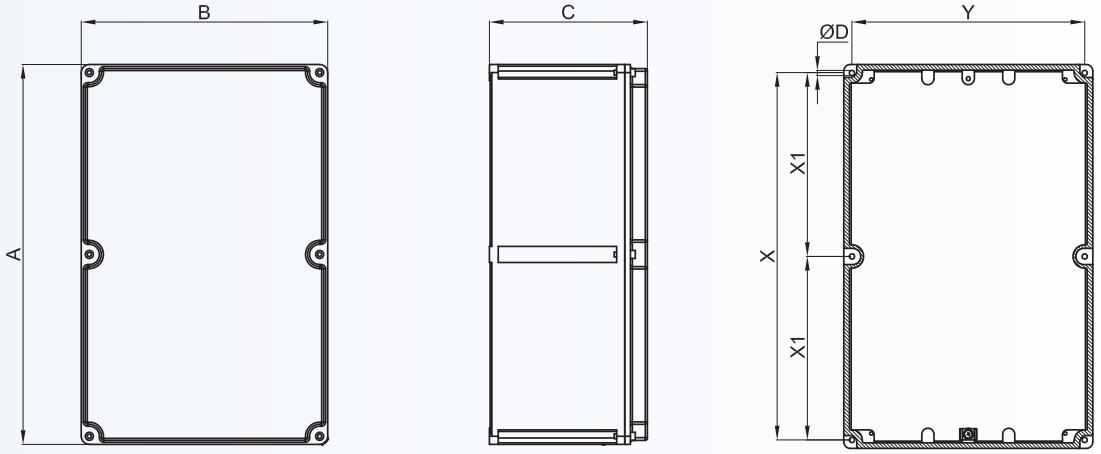
CS... CSG... series junction boxes are made from aluminium alloy and given an electrostatically applied epoxy coating containing stainless steel particles that is then baked at 200°C. This treatment ensures good UV as well as thermal stability, providing mechanical impact resistance and excellent resistance when exposed either to salt mist or to marine and other damp environments. CS and CSG series junction boxes are usually installed in industrial plants and they are mainly used as junction boxes and/or for routing cables to control rooms for analogue or digital signals and for control, monitoring and signalling associated with equipment such as motors, pumps...etc., or for giving physical readings such as flow rate, level, temperature, pressure, etc.... The thickness of its walls (7mm) means the CSG series is suitable for direct connection with pipes and fittings featuring tapered threads. Upon customer's request threaded hubs or bushings, complete with cable glands, plugs and other accessories, can be made.



Standard construction:	Low copper content aluminium alloy. Stainless steel screws and bolts. Silicone gasket. Internal/external earth screws. Fixing lugs. RAL 7035 polyester coating.
Protection degree:	IP 66
Mechanical strenght:	IK10
Standards:	IEC 60529

ALUMINIUM ENCLOSURES SELECTION CHART

Code	Outside dimensions			Fixing				Weight
	A	B	C	X	Y	X1	ØD	Kg
CS090907	90	90	73	74	74	-	6,5	0,40
CS111108	110	110	83	94	94	-	6,5	0,50
CSG111108	110	110	83	94	94	-	6,5	0,75
CS171108	170	110	83	154	94	-	6,5	0,80
CSG171108	170	110	83	154	94	-	6,5	1,55
CS141410	147	147	100	131	131	-	6,5	0,80
CSG141410	147	147	100	131	131	-	6,5	1,40
CS202012	200	200	120	180	180	-	6,5	1,70
CS301410	305	147	110	285	127	-	6,5	2,00
CSG301410	305	147	110	285	127	-	6,5	2,70
CS302310	305	230	110	285	210	-	6,5	2,80
CSG302310	305	230	100	285	210	-	6,5	3,40
CS302318	305	230	190	285	210	-	6,5	3,50
CSG302318	305	230	190	285	210	-	6,5	5,30
CS473018	475	305	195	450	285	225	6,5	6,50
CSG473018	475	305	195	450	285	225	6,5	8,90
CSG623018	625	305	195	605	285	302,5	6,5	11,3
CSG606018	600	600	205	580	580	290	6,5	27,0



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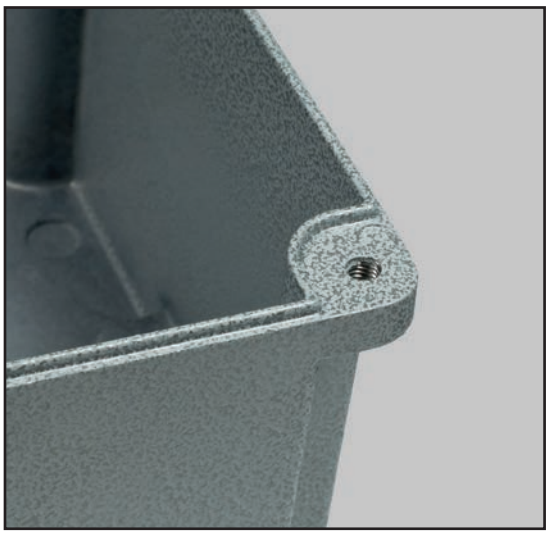
ACCESSORIES UPON REQUEST

ILLUSTRATION	DESCRIPTION	MODEL	SIZE A	SIZE B	CODE
	Internal mounting plates Thickness 25/10 Aluminium Galvanized steel (B...-229AC) Stainless steel (B...-229IN)	CS090907	82	48	**B09-229**
		CSG090907	73	48	**B09-229P**
		CS111108	100	68	**B11-229**
		CSG111108	92	68	**B11-229P**
		CS141410	137	105	**B14-229**
		CSG141410	129	105	**B14-229P**
		CS171108	159	67	**B17-229**
		CS202012	186	146	**B20-229**
		CS/CSG301410	285	97	**B31-229**
		CS/CSG302310 CS/CSG302318	285	180	**B32-229**
		CS/CSG473018	453	254	**B43-229**
		CS/CSG623018	603	249	**B63-229**
		CSG606018	532	532	**B60-229**

ILLUSTRATION	DESCRIPTION	MODEL	CHARACTERISTICS	CODE
	Drain and breather valve	Thread ISO M20 or ISO M25	Material: stainless steel	**ECDE-...S**
	Entry blanking plugs and cable glands	For models and codes, see cable glands and electrical fittings chapter		
	Hinges (2 per enclosure)	Low lid enclosures	Material: stainless steel	**B-0105**
		High lid enclosures		**B-0106**
	Hinges (2 per enclosure)	SAG606018	Material: stainless steel	**K-0351**

CS and CSG series enclosures

Models from CS...series (lightweight series)
Thinner walls
The body can only accommodate through holes with no threading



Models from CSG...series (heavy-duty series)
Extra-thick walls
The body can also accommodate threaded holes



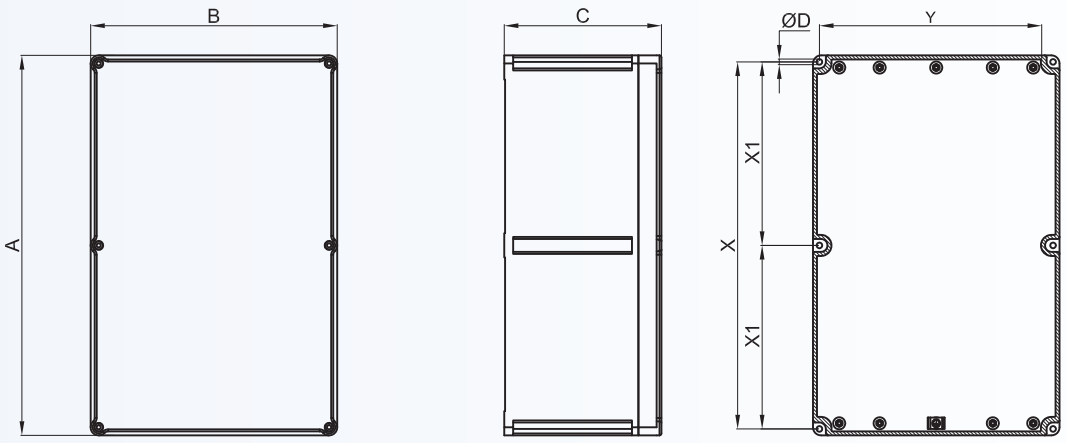
CS/P series junction boxes are made from fibreglass-reinforced polyester. Because they are highly resistant to contamination from fuel oils and mechanical shock, in addition to being lightweight and practical, they can be installed in all industrial plants. The enclosures have special holes made in the base for easy wall mounting.
The lid features a silicone gasket that is resistant to low and high temperatures and comes complete with AISI 304 stainless steel screws, which are arranged around the outside of the lid to ensure a tight seal with the IP66 rating. CS/P series enclosures are mainly used as junction boxes for routing cables for analogue or digital signals and/or for control and monitoring associated with equipment such as motors, fans, pumps and/or for giving physical readings such as flow rate, level, pressure, temperature, current, etc..



Standard construction:	GRP (glass reinforced polyester resin) black coating. Stainless steel screws and bolts. Silicone gasket. Fixing lugs.
Protection degree:	IP 66
Mechanical strenght:	IK10
Standards:	IEC 60529

POLYESTER ENCLOSURES SELECTION CHART

Code	Outside dimension			Fixing				Weight
	A	B	C	X	Y	X1	ØD	Kg
CS090907/P	90	90	73	74	74	-	6,5	0,30
CS111108/P	110	110	83	94	94	-	6,5	0,40
CS171108/P	170	110	83	154	94	-	6,5	0,80
CS141410/P	147	147	100	131	131	-	6,5	1,00
CS301410/P	305	147	110	285	127	-	6,5	1,90
CS302310/P	305	230	110	285	210	-	6,5	2,50
CS302318/P	305	230	190	285	210	-	6,5	3,10
CS473018/P	470	305	195	450	285	225	6,5	4,70
CS623018/P	620	305	185	560	285	260-300	8	6,30



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ACCESSORIES UPON REQUEST

ILLUSTRATION	DESCRIPTION	MODEL	SIZE A	SIZE B	CODE
	Internal mounting plates Thickness 2.5mm Aluminium Galvanized steel (B...-229AC) Stainless steel (B...-229IN)	CS090907/P	82	48	**B09-229**
		CS111108/P	100	68	**B11-229**
		CS141410/P	137	105	**B14-229**
		CS171108/P	159	67	**B17-229**
		CS301410/P	285	97	**B31-229**
		CS302310/P CS302318/P	285	180	**B32-229**
		CS473018/P	453	254	**B43-229**
		CS623018/P	603	249	**B63-229**

ILLUSTRATION	DESCRIPTION	MODEL	CHARACTERISTICS	CODE
	Drain and breather valve	Thread ISO M20 or ISO M25	Material: stainless steel	**ECDE-...S**
	Entry blanking plugs and cable glands	For models and codes, see cable glands and electrical fittings chapter		
	Hinges (2 per enclosure)	Low lid enclosures	Material: stainless steel	**B-0105**
		High lid enclosures		**B-0106**
	Through earth connection	M8	Material: stainless steel	**K-0307/1**
		M6		**K-0307/2**
	Brass continuity plates for earthing	For models and codes see the following scheme		**B-...**

CONTINUITY PLATES

Enclosure	Continuity plate for all four enclosure sides Plate code	Continuity plate for single enclosure side Plate code	
		Long side	Short side
CS090907/P	B-388	B-455	
CS111108/P	B-389	B-456	
CS141410/P	B-390	B-457	
CS171108/P	B-391	B-458	B-456
CS301410/P	B-392	B-459	B-457
CS302310/P	B-393	B-459	B-460
CS302318/P	B-394	B-461	B-462
CS473018/P	B-395	(2x) B-462	B-461
CS623018/P	-	(2x) B-463	B-463



CS/SS series watertight junction boxes, in stainless steel, are suitable for containing any electrical and electronic equipment. Thanks to the material used and their features, they are particularly indicated for industrial environments with strongly aggressive atmospheres.

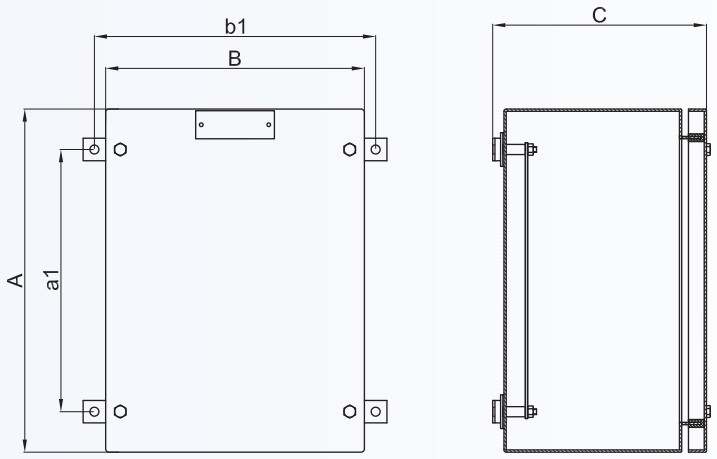


Standard construction:	Stainless steel AISI 316L Stainless steel bolts and screws Silicone gasket Fixing lugs
Protection degree:	IP 66
Mechanical strenght:	IK10
Standards:	IEC 60529

STAINLESS STEEL ENCLOSURES SELECTION CHART

Codice	External dimensions			Fixing		Weight
	A	B	C	a1	b1	Kg
CS111108SS	110	110	90	38	130	0,80
CS141410SS	147	147	110	75	167	1,40
CS171108SS	170	110	90	98	130	1,20
CS301410SS	305	147	110	233	167	2,50
CS302310SS	305	230	110	233	250	4,30
CS302318SS	305	230	190	233	250	5,60
CS404020SS	400	400	210	328	420	10,90
CS473018SS	470	305	190	398	325	8,00
CS623018SS	620	305	190	548	325	12,00
CS606020SS	600	600	210	528	620	16,00

Other dimensions can be enquired.



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ACCESSORIES UPON REQUEST

ILLUSTRATION	DESCRIPTION	MODEL	SIZE A	SIZE B	CODE
	Internal mounting plates Stainless steel	CS111108SS	50	50	**B11-357**
		CS141410SS	87	87	**B14-357**
		CS171108SS	110	50	**B17-357**
		CS301410SS	245	87	**B301-357**
		CS302310SS CS302318SS	245	170	**B302-357**
		CS404020SS	340	340	**B40-357**
		CS473018SS	410	245	**B47-357**
		CS623018SS	560	245	**B62-357**
		CS606020SS	540	540	**B603-357**

ILLUSTRATION	DESCRIPTION	MODEL	CHARACTERISTICS	CODE
	Drain and breather valve	Thread ISO M20 or ISO M25	Material: stainless steel	**ECDE-...S**
	Entry blanking plugs and cable glands	For models and codes, see cable glands and electrical fittings chapter		

SPECIAL REQUEST

CS-...SSF... Junction box with walls with gland plates
CS-...SSC... Junction box with cover fixing by lock system
CS-...SSCF... Junction box with walls with gland plates and cover fixing by lock system

LOCK SYSTEM

Code example

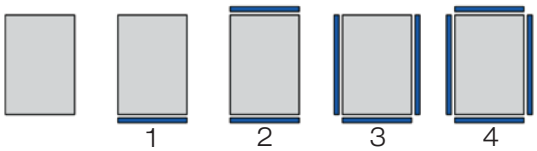
1) CS302318SSC
Stainless steel junction box 305x230x190 with cover fixing by lock system





CS...SSF.. SERIES ENCLOSURES WITH REMOVABLE GLAND PLATES

Removable gland plate position coding



Code example

1) CS302318SSF3
Stainless steel junction box 305x230x190 with 3 removable gland plates
2) CS473018SSF1
Stainless steel junction box 470x305x190 with 1 removable gland plate

Code	SIZE REMOVABLE GLAND PLATES			
	Side A	Side B	Side C	Side D
CS302318SSF..	130x100	225x100	150x100	225x100
CS404020SSF..	300x120	320x120	320x120	320x120
CS473018SSF..	205x100	390x100	225x100	390x100
CS623018SSF..	205x100	540x100	225x100	540x100
CS606020SSF..	500x120	520x120	520x120	520x120

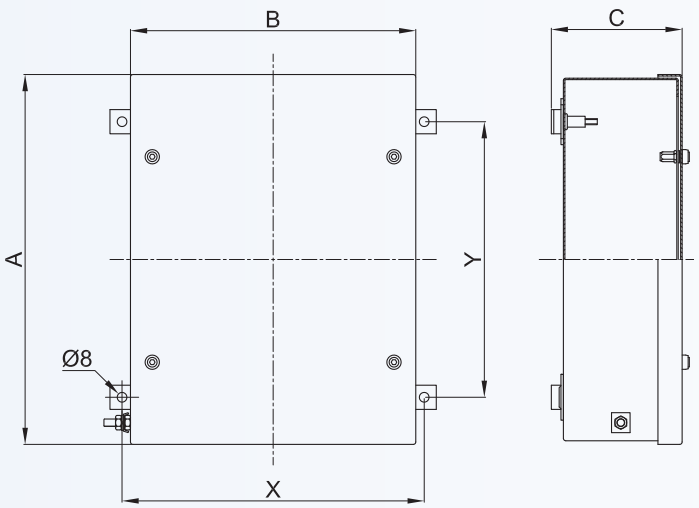
Economic junction boxes, are used as pulling or junction boxes in areas where there is no danger of explosion, but it is required a specific protection to prevent the entry of solids and liquids. They are stainless steel made and can be installed in chemical and off-shore plants and where is a strong external agents'aggression. Upon specific request they can be supplied with terminal blocks and copper rods for earth connections. Upon customer request threaded hubs or bushings, complete with cable glands, plugs and other accessories both on the enclosure's side and on specific removable flanges, can be made.

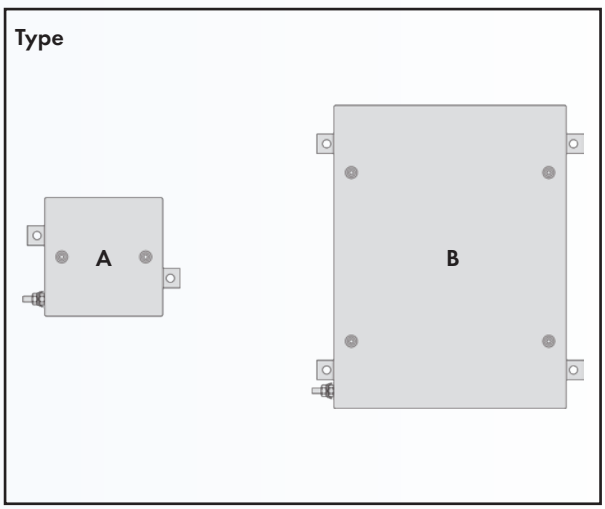


Standard construction:	Stainless steel AISI 316L Stainless steel bolts and screws Silicone gasket Fixing lugs
Degree of protection:	IP 66
Mechanical strenght:	IK10
Standards:	IEC 60529

STAINLESS STEEL ENCLOSURES SELECTION CHART

Code	Outside dimensions			Fixing			Weight
	A	B	C	X	Y	ØD	Kg
CTBEW121208	120	120	90	135	42	A	
CTBEW151208	150	120	90	135	73	A	
CTBEW151509	150	150	100	165	73	A	
CTBEW191509	190	150	100	165	113	A	
CTBEW191910	190	190	100	165	73	A	
CTBEW221513	229	152	140	205	113	A	
CTBEW262610	258	258	110	273	181	B	
CTBEW262616	258	258	170	273	181	B	
CTBEW262620	258	258	210	273	181	B	
CTBEW301410	306	146	110	160	228	B	
CTBEW302310	306	236	110	250	228	B	
CTBEW303010	306	306	110	320	228	B	
CTBEW303016	306	306	170	320	228	B	
CTBEW303020	306	306	210	320	228	B	
CTBEW381612	380	160	130	175	303	B	
CTBEW382610	380	260	110	275	303	B	
CTBEW382616	380	260	170	275	303	B	
CTBEW382620	380	260	210	275	303	B	
CTBEW402513	400	250	140	265	323	B	





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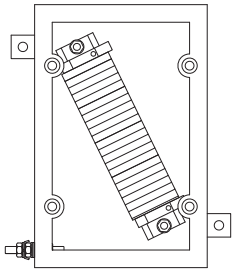
ACCESSORIES UPON REQUEST

ILLUSTRATION	DESCRIPTION	MODEL	SIZE A	SIZE B	CODE
	Internal mounting plates Stainless steel	CTBEW121208	60	60	**B12-484**
		CTBEW151509	90	90	**B15-484**
		CTBEW191910	130	130	**B19-484**
		CTBEW221513	170	90	**B22-484**
		CTBEW262610 CTBEW262616 CTBEW262620	200	200	**B26-484**
		CTBEW301410	245	85	**B303-484**
		CTBEW302310	145	175	**B302-484**
		CTBEW303010 CTBEW303016 CTBEW303020	245	245	**B30-484**
		CTBEW382610 CTBEW382616 CTBEW382620	320	200	**B38-484**

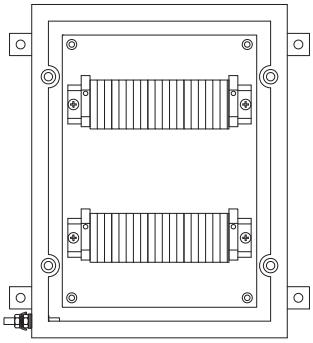
ILLUSTRATION	DESCRIPTION	MODEL	CHARACTERISTICS	CODE
	Entry blanking plugs and cable glands	For models and codes, see cable glands and electrical fittings chapter		
	Drain and breather valve	Thread ISO M20 or ISO M25	Material: stainless steel	**ECDE-...S**

INSTALLATION EXAMPLE OF INSIDE TERMINAL BLOCKS

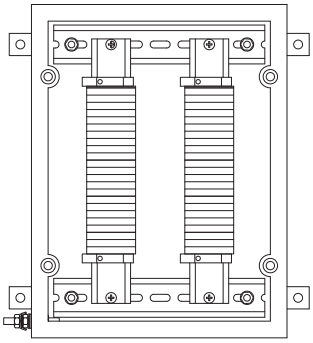




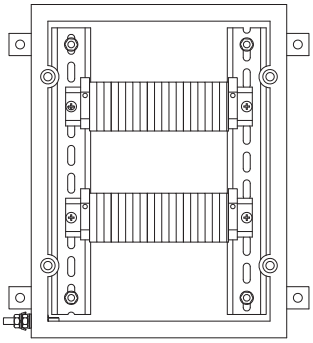
Diagonally and directly installed on internal inserts for greater amount of terminal blocks on small enclosures



Horizontally or vertically, installed on mounting plate in order to minimize oscillations of terminal block in case of external vibrations



Vertically installed on DIN guides for greater cheapness

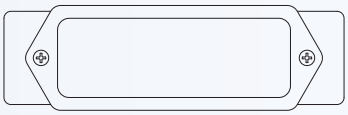
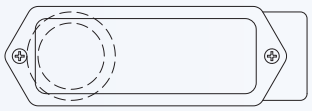
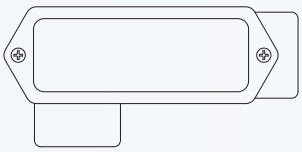
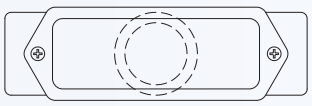
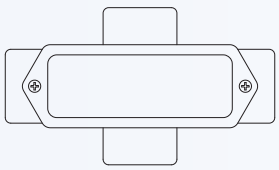
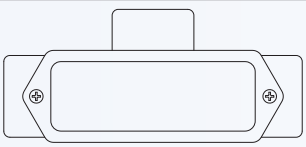
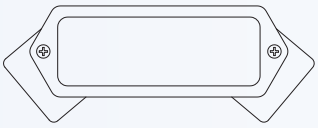


Horizontally installed on DIN guides for greater cheapness

Condulet are used as pulling or junction boxes in areas where is no danger of explosion, but it is required a specific protection to prevent the entry of solids and liquids. They are aluminium made and can be installed in chemical and off-shore plants and where is a strong external agents aggression.

Standard construction:	Body and cover in aluminium alloy Galvanized steel bolts and screws Elastomer gasket
Degree of protection	IP 65
Standards:	IEC 60529
On request:	Other threads: (For example NPT thread: LL27**N**) Coating Stainless steel screws

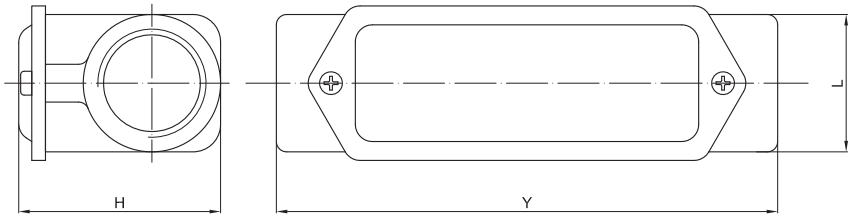


Box type	Code	Description
	C	Enclosure with two coaxial hubs
	LB	Enclosure with two hubs arranged at 90° (One hub arranged on the bottom of the enclosure)
	LL	Enclosure with two hubs arranged at 90° (One hub arranged on the bottom left side)
	LR	Enclosure with two hubs arranged at 90° (One hub arranged on the right side)
	TB	Enclosure with three hubs, two coaxial and one at 90° arranged on the middle of the enclosure's bottom
	X	Enclosure with four cross hubs
	T	Enclosure with three hubs, two coaxial and one at 90° arranged on the side
	LU	Enclosure with two 45° hubs with respect to the axis

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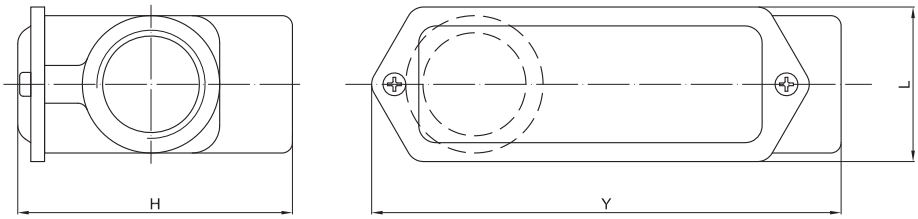


PULLING BOXES SELECTION CHART					
Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
C17	1/2" ISO228/1	118	51	42	0,168
C27	3/4" ISO228/1	123	40	48	0,151
C37	1" ISO228/1	146	45	57	0,234
C47	1 ¼" ISO228/1	171	62	71	0,417
C57	1 ½" ISO228/1	171	62	71	0,372
C67	2" ISO228/1	204	76	83	0,514
C77	2 ½" ISO228/1	315	108	125	1,779
C87	3" ISO228/1	315	108	125	1,779
C107	4" ISO228/1	314	133	148	2,606



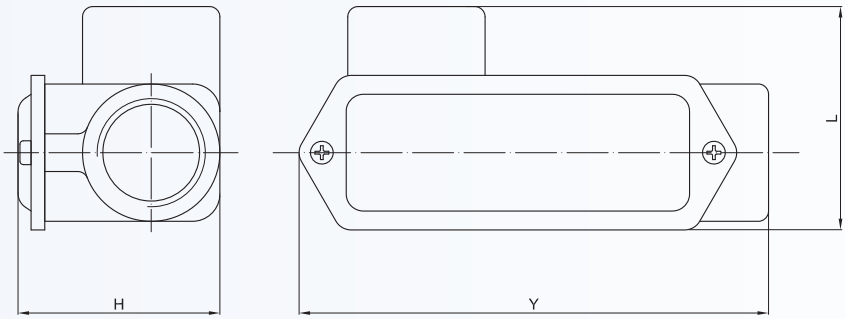


PULLING BOXES SELECTION CHART					
Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
LB17	1/2" ISO228/1	117	40	65	0,172
LB27	3/4" ISO228/1	117	40	65	0,159
LB37	1" ISO228/1	137	45	78	0,236
LB47	1 ¼" ISO228/1	163	62	89	0,427
LB57	1 ½" ISO228/1	163	62	89	0,387
LB67	2" ISO228/1	190	76	108	0,541
LB77	2 ½" ISO228/1	238	107	150	2,121
LB87	3" ISO228/1	238	107	150	1,785
LB107	4" ISO228/1	300	133	185	2,658



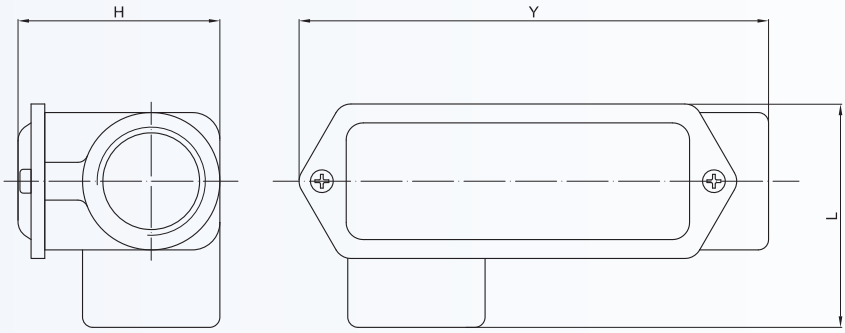


PULLING BOXES SELECTION CHART					
Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
LL17	1/2" ISO228/1	117	51	48	0,171
LL27	3/4" ISO228/1	117	51	48	0,150
LL37	1" ISO228/1	137	61	57	0,238
LL47	1 ¼" ISO228/1	163	76	71	0,414
LL57	1 ½" ISO228/1	163	76	71	0,381
LL67	2" ISO228/1	190	94	83	0,522
LL77	2 ½" ISO228/1	238	138	122	2,084
LL87	3" ISO228/1	238	138	122	1,748
LL107	4" ISO228/1	300	162	148	2,666





PULLING BOXES SELECTION CHART					
Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
LR17	1/2" ISO228/1	117	51	48	0,171
LR27	3/4" ISO228/1	117	51	48	0,150
LR37	1" ISO228/1	137	61	57	0,238
LR47	1 ¼" ISO228/1	163	76	71	0,414
LR57	1 ½" ISO228/1	163	76	71	0,381
LR67	2" ISO228/1	190	94	83	0,522
LR77	2 ½" ISO228/1	238	138	122	2,084
LR87	3" ISO228/1	238	138	122	1,748
LR107	4" ISO228/1	300	162	148	2,666



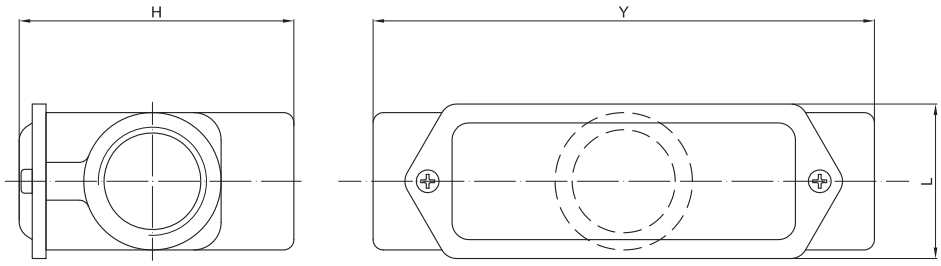
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PULLING BOXES SELECTION CHART

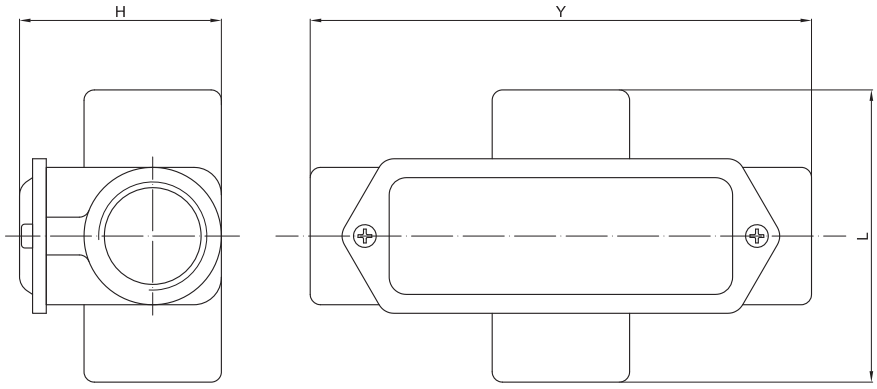
Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
TB17	1/2" ISO228/1	123	40	65	0,193
TB27	3/4" ISO228/1	123	40	65	0,168
TB37	1" ISO228/1	146	45	78	0,254
TB47	1 ¼" ISO228/1	171	62	89	0,488
TB57	1 ½" ISO228/1	171	62	89	0,416
TB67	2" ISO228/1	204	76	108	0,607
TB77	2 ½" ISO228/1	315	108	163	2,492
TB87	3" ISO228/1	315	108	163	1,996
TB107	4" ISO228/1	314	133	185	2,747





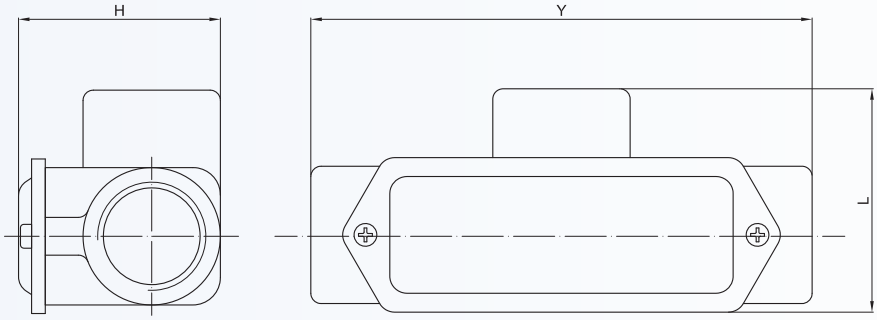
PULLING BOXES SELECTION CHART

Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
X17	1/2" ISO228/1	123	68	48	0,217
X27	3/4" ISO228/1	123	68	48	0,187
X37	1" ISO228/1	146	81	57	0,289
X47	1 ¼" ISO228/1	171	96	71	0,532
X57	1 ½" ISO228/1	171	96	71	0,428
X67	2" ISO228/1	204	118	83	0,623
X77	2 ½" ISO228/1	315	183	125	2,394
X87	3" ISO228/1	315	183	125	2,105
X107	4" ISO228/1	315	196	148	2,881



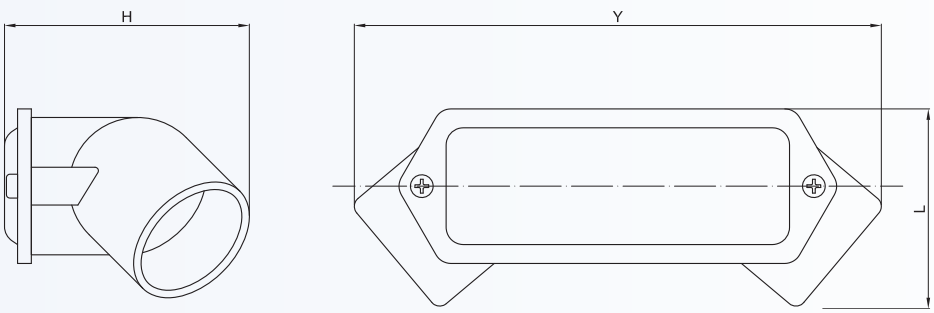


PULLING BOXES SELECTION CHART					
Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
T17	1/2" ISO228/1	123	53	48	0,191
T27	3/4" ISO228/1	123	53	48	0,170
T37	1" ISO228/1	146	63	57	0,264
T47	1 ¼" ISO228/1	171	78	71	0,473
T57	1 ½" ISO228/1	171	78	71	0,410
T67	2" ISO228/1	204	96	83	0,560
T77	2 ½" ISO228/1	315	148	125	2,457
T87	3" ISO228/1	315	148	125	1,948
T107	4" ISO228/1	315	166	148	2,725





PULLING BOXES SELECTION CHART					
Box type	Thread	Dimensions in mm			Weight
		Y	L	H	Kg
LU17	1/2" ISO228/1	130	64	44	0,185
LU27	3/4" ISO228/1	130	64	44	0,167
LU37	1" ISO228/1	148	73	50	0,217
LU47	1 ¼" ISO228/1	182	103	71	0,523
LU57	1 ½" ISO228/1	182	103	71	0,456
LU67	2" ISO228/1	211	118	83	0,639
LU77	2 ½" ISO228/1	310	156	115	2,498
LU87	3" ISO228/1	310	156	115	1,961



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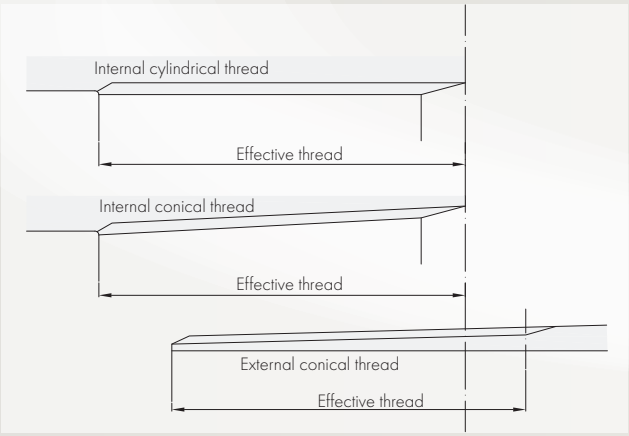
Appendix

TABLE OF THREAD CORRELATION

Hub size	"M" and "F" thread hub diameter					
		Conical equivalent	Cylindrical equivalent			
	GAS UNI ISO 7/1	NPT ANSI ASME B1.20.1	GAS UNI ISO 228/1	NPSM	PG DIN 4030	ISO METRIC
1/4"	1/4"	1/4"	1/4"	1/4"	PG9	M12x1,5
Code	**02**	**02N**	**02C**	**02NC**	**2P**	**02I**
3/8"	3/8"	3/8"	3/8"	3/8"	PG11	M16x1,5
Code	**01**	**01N**	**01C**	**01NC**	**3P**	**01I**
1/2"	1/2"	1/2"	1/2"	1/2"	PG13,5	M20x1,5
Code	**1**	**1N**	**1C**	**1NC**	**4P**	**1I**
3/4"	3/4"	3/4"	3/4"	3/4"	PG16	M25x1,5
Code	**2**	**2N**	**2C**	**2NC**	**5P**	**2I**
1"	1"	1"	1"	1"	PG21	M32x1,5
Code	**3**	**3N**	**3C**	**3NC**	**6P**	**3I**
1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	PG29	M40x1,5
Code	**4**	**4N**	**4C**	**4NC**	**7P**	**4I**
1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	PG36	M50x1,5
Code	**5**	**5N**	**5C**	**5NC**	**8P**	**5I**
2"	2"	2"	2"	2"	PG42	M63x1,5
Code	**6**	**6N**	**6C**	**6NC**	**9P**	**6I**
2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	PG48	M75x1,5
Code	**7**	**7N**	**7C**	**7NC**	**10P**	**7I**
3"	3"	3"	3"	3"	-	M90x1,5
Code	**8**	**8N**	**8C**	**8NC**	**-**	**8I**
4"	4"	4"	4"	4"	-	M100x1,5
Code	**10**	**10N**	**10C**	**10NC**	**-**	**10I**

THREADS SIZE (in mm)

GAS UNI ISO 7/1 Thread											
Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Pitch	1,337	1,337	1,814	1,814	2,309	2,309	2,309	2,309	2,309	2,309	2,309
Ø external	13,157	16,662	20,955	26,441	33,249	41,910	47,803	59,614	75,184	87,884	113,030



Example of indication in accordance with UNI ISO 7/1
Example with thread from 1 1/4"

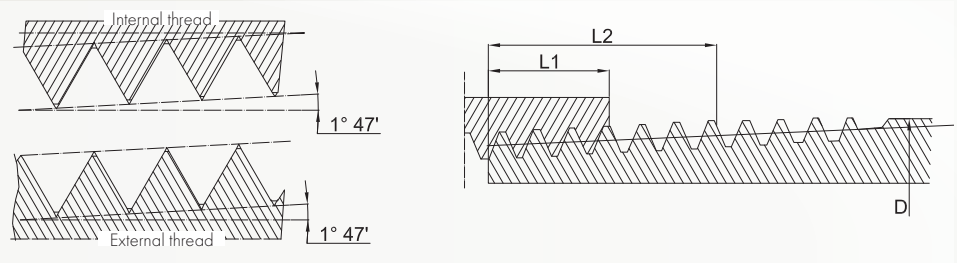
Internal thread	Conical	UNI ISO 7/1 - Rc 1 1/4"
	Cylindrical	UNI ISO 7/1 - Rp 1 1/4"
External thread	Always conical	UNI ISO 7/1 - R 1 1/4"

Key:
Rp UNI ISO 7/1 internal cylindrical thread
Rc UNI ISO 7/1 internal conical thread
R UNI ISO 7/1 external thread (always conical)

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NPT Thread - American standard ANSI B1.20.1											
Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Pitch	1,411	1,411	1,814	1,814	2,208	2,208	2,208	2,208	3,175	3,175	3,175
Threads per inch	18	18	14	14	11,5	11,5	11,5	11,5	8	8	8
External D (of pipe)	13,716	17,145	21,336	26,670	33,401	42,164	48,260	60,325	73,025	88,90	114,30
Effective thread L2	10,206	10,358	13,556	13,861	17,343	17,953	18,377	19,215	28,892	30,480	33,020
Handtight Engagement L1	5,786	6,096	8,128	8,611	10,160	10,668	10,668	11,074	17,323	19,456	21,438



GAS UNI ISO 228/1 Thread											
Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Pitch	1,34	1,34	1,81	1,81	2,31	2,31	2,31	2,31	2,31	2,31	2,31
Threads per inch	19	19	14	14	11	11	11	11	11	11	11
Ø external	13,16	16,66	20,96	26,44	33,25	41,91	47,80	59,61	75,18	87,88	113,03

NPSM Thread											
Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Pitch	1,411	1,411	1,814	1,814	2,209	2,209	2,209	2,209	3,175	3,175	3,175
Threads per inch	18	18	14	14	11,5	11,5	11,5	11,5	8	8	8
Ø external	13,716	17,145	21,336	26,670	33,401	42,164	48,260	60,325	73,025	88,900	114,30

PG DIN 4030 Thread									
Size	PG9	PG11	PG13,5	PG16	PG21	PG29	PG36	PG42	PG48
Pitch	1,410	1,410	1,410	1,410	1,588	1,588	1,588	1,588	1,588
Threads per inch	18	18	18	18	16	16	16	16	16
Ø external	15,2	18,6	20,4	22,5	28,3	37,0	47,0	54,0	59,3

ISO METRIC Thread											
Size	M12	M16	M20	M25	M32	M40	M50	M63	M75	M90	M100
Pitch	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
Ø external	12	16	20	25	32	40	50	63	75	90	100

EXPLOSION-PROOF OR WEATHER-PROOF EQUIPMENT

Very often, the explosion-proof equipment is confused with water-proof equipment, even in technical environments. This comes from the incorrect belief that it's possible to avoid an explosion preventing an explosive atmosphere to get in touch with the ignition source (spark, arc or hot spot).
This may be partially true if the hazardous substance is a powder suspended in the air, but it's a misconception if the explosive atmosphere is represented by a gas.
This belief may cause an improper use of an enclosure, incorrectly considered as water-proof, in unsuitable conditions to ensure their safety.
To analyse properly the problem, we need to step back and understand what are the principles on which is based the electrical explosion protection.
The principles are three:

- Containment
- Segregation
- Prevention

- **Containment**
  'Ex d' method of protection is based on the principle that it's not possible to absolutely prevent a gas from entering into an enclosure.
  This is the oldest method of protection, but still today the one that is most commonly used and, consequently, the 'Ex d' products are the most common on the market.
  The majority of applications for conventional power plant can be achieved with this type of protection.
- **Segregation**
  This principle prevents the explosive atmosphere from coming into contact with an ignition source. Different systems are used: the immersion of the equipment in oil, sand or resin. These systems, respectively 'Ex o', 'Ex q', 'Ex m', are primarily used to protect electrical components.
- **Prevention**
  The protection is provided through the over sizing of the equipment that prevents the creation of sparks or electric arcs, even under fault conditions.
  These systems ('Ex e', 'Ex i') are used respectively for junction and pulling systems or they are applicable in the case of intrinsically safe instrumentation or to other equipment that operate at very low powers. Nobody would ever think to build an electric panel of a refinery through an intrinsically safe system.
  'Ex e' method of protection, the increased safety, is usable alone only for those equipment that, of course, cannot sparkle such as the junction boxes with terminals. But if the system contains equipment that can sparkle, they must be individually protected with another type of protection.

HAZARDOUS AREAS CLASSIFICATION

Only highly qualified staff should identify and classify hazardous areas in a chemical or petrochemical plant, who decide where there is a permanently or occasionally explosive atmosphere in the plant.
The most hazardous areas are where combustible gas or dusts may be present during normal operation or due to a fault. The classification is based on what type of combustible gas or dust is present in a specific area.
Nevertheless, it is important to underline that there is no uniformity in the classification of hazardous area, so below we have listed European classification, which correspond with international IEC and American categories.

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GAS

		Zone 0	Area in which an explosive atmosphere, consisting in a mixture of air and flammable substances in the shape of gas, vapor or mist, is present permanently or for long periods or often.	Zone 1	Area in which during normal activities the formation of an explosive atmosphere consisting in a mixture of air and flammable substances in the shape of gas, vapor or mist, is possible.	Zone 2	Area in which during normal activities the formation of an explosive atmosphere consisting in a mixture of air and flammable substances in the shape of gas, vapor or mist, is not possible, and in case it happens, it lasts very shortly.
	NEC 500	Class I, Division 1				Class I, Division 2	
	NEC 505	Class I, Zone 0		Class I, Zone 1		Class I, Zone 2	

Tab. 1 Comparison between hazardous areas classification for presence of gas based on international standards (IEC Zone System) and according to North American standards

DUSTS

		Zone 20	Area in which an explosive atmosphere is present permanently or for long periods or often, in the shape of clouds of dusts.	Zone 21	Area in which occasionally during normal activities the formation of an explosive atmosphere in the shape of cloud of combustible dust in the air, is possible.	Zone 22	Area in which during normal activities the formation of an explosive atmosphere in the shape of cloud of combustible dust is not possible, and in case it happens, it lasts very shortly.
	NEC 500	Class II, Division 1				Class II, Division 2	
	NEC 505	Class II, Zone 20		Class II, Zone 21		Class II, Zone 22	

Tab. 2 Comparison between hazardous areas classification for presence of dusts based on international standards (IEC Zone System) and according to North-American standards

Groups and categories, EPL (Equipment Protection Level)

The 2014/34/UE Directive foresees the following division:

- Group I: products addressed to mines and in their surface systems, where firedamp gas can be present.
- Group II: products addressed to surface sites with the presence of explosive atmosphere.

The products are then divided inside the Groups as follows:

Group I

- category M1: equipment which guarantees a very high protection level; it has to be kept powered in presence of explosive atmosphere.
- category M2: equipment which guarantees a very high protection level; it must be possible to cut the power off in presence of explosive atmosphere.

Group II

• **category 1:** equipment which guarantees a very high protection level; it is intended to be used in areas in which there is, always or for long periods, the presence of explosive atmosphere.

• **category 2:** equipment which guarantees a very high protection level; it is intended to be used in areas in which the development of explosive atmosphere is most likely.

• **category 3:** equipment which guarantees a normal protection level; it is intended to be used in areas in which the development of explosive atmosphere is slightly possible.

The numbers of the categories of group II (1, 2, 3) are followed by a capital letter:

- G, for gases;
- D, for combustible dusts.

For example: II 2G.

On the basis of group II definitions and by comparing them to those provided by the 99/92/CE "ATEX 137" Directive, a two-way link is established and highlighted in Table 9, between equipment category and installation area.

What we have described above is valid for the EU.

Outside EU, until 2007, the equipment was marked only with the protection method.

Therefore, inspired by the European system, the EPL Equipment Protection Level (Table 10) has been created, replacing the letters "a", "b", "c" to the numbers "1", "2" and "3".

Currently, at a technical standard level, the group III related only to dusts, has been divided in three sub-categories, similarly to what it has already done for gas.

The subgroups are:

- IIIA: flammable particles; solid particles, fibers included, with nominal sizes > 500 µm;
- IIIB: non-conductive dust; finely divided solid particles, with nominal sizes ≤ 500 µm, with electrical resistivity > 103 Ωm;
- IIIC: conductive dust; finely divided solid particles, with nominal sizes ≤ 500 µm, with electrical resistivity ≤ 103 Ωm.

	1	2	3
G	Zone 0	Zone 1	Zone 2
D	Zone 20	Zone 21	Zone 22

Tab.3 Correlation between equipment category and installation area for Group II

	M1	M2	1G		2G		3G	
				1D		2D		3D
	Ma	Mb	Ga		Gb		Gc	
				Da		Db		Dc

Tab.4 Correlation between equipment category and the protection level

As described above, the "Ex d" protection method is highly probably the oldest protection method and its applicability to multiple types of industrial products has allowed its great spread.

Comparing a normal equipment to an "Ex d" one, the first evident characteristic is the strength of the latter, since it has to resist mechanically, without being deformed plastically, to the internal pressure generated by the explosion. The pressure ranges normally from 5 to 12 bar. Therefore, in this method, which is the only one based on the explosion containment (held at pressure), the protection is given by the junction box.

The sparking electrical components are enclosed inside the junction box, that allows the explosive atmosphere to enter but, in case of contact between this and the ignition source (arc or spark) the consequent explosion remains confined inside the junction box.

Through the flame-paths, the flame cools down and the combustion product is not able to trigger the mixture present outside (held at flame). When choosing the "Ex d" protection method, the following indications have to be considered:

- do not make further holes in the junction boxes than those allowed in the certificate;
- if the cable entry has a parallel thread, the coupling must have at least 5 full threads;
- if the use of gasket is foreseen, the number of threads must be still sufficient after the insertion of the gasket;
- if the thread is conical, the connection must be fully tightened;
- if an adapter is required, it must comply with the "Ex d" (IEC 60079-1) protection method;
- the unused cable entries must be sealed with elements that comply with "Ex d"protection method (IEC 60079-1).

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TEMPERATURE CLASSES

The temperature class is one of the parameters to consider in order to choose electrical equipment to be installed in places with danger of explosion.
Very often this parameter is ignored or underestimated while it's one of the main features of the safety equipment.
An electrical device, addressed to classified areas where there might be danger of explosion due to the presence of gases, vapours, mists or dusts, should be chosen considering that, its maximum surface temperature, must not reach, even in case of failure, the ignition temperature of the hazardous substances present in the atmosphere.

• Temperature classes for Gas

A standard method of classification defines the temperature classes of a gas. This standard, defined by IEC, but also acknowledged by CENELEC, is held in IEC 60079-4 Standard "Method of testing ignition temperatures". According to this method, all gases and vapours are divided into temperature classes. According to these classes, the equipment maximum surface temperature reached is always lower than the ignition temperature.
The Standard defines in detail the maximum values and the necessary safety net for these temperatures.

Temperature class	Gas group ignition temperature	Equipment max. surface temperature
T1	> 450 °C	400 °C
T2	> 300 ... ≤ 450 °C	300 °C
T3	> 200 ... ≤ 300 °C	200 °C
T4	> 135 ... ≤ 200 °C	135 °C
T5	> 100 ... ≤ 135 °C	100 °C
T6	> 85 ... ≤ 100 °C	85 °C

Tab.5 Temperature classes

IP PROTECTION RATINGS (IEC 529, EN 60529-4, CEI 70-1 ed. 11/92)

The table gives protection ratings in accordance with standard CEI 70-1 ed. 11/92. Ratings are identified by the acronym IP followed by 2 digits, to which 2 letters may be added, indicating the degree to which persons are protected against access or other properties. There is some variation in the application of ratings 7 and 8 relating to the ingress of liquids, with these ratings not always meaning that the item is suitable for lower levels (whereas IP rating x4 also covers the lower levels).

IMPACT PROTECTION RATINGS

This classification shows the acceptable level of strength, when evaluating a product's safety, and is mainly employed in relation to testing on electromechanical products.

1st Digit PROTECTION AGAINST SOLID BODIES	2 nd Digit PROTECTION AGAINST LIQUIDS	PROTECTION AGAINST EXTERNAL MECHANICAL IMPACTS *
0 *No protection*	**0** *No protection*	**IK00** *No protection*
1 *Protected against solid bodies greater than 50 [mm]* (Ø 50)	**1** *Protected against vertically falling water drops*	**IK01** 0,25 Kg 5,6 cm *Protected against impact energy 0,15J*
2 *Protected against solid bodies greater than 12 [mm]* (Ø 12)	**2** *Protected against falling water drops with maximum inclination 15°*	**IK03** 0,25 Kg 14 cm *Protected against impact energy 0,35J*
3 *Protected against solid bodies greater than 2,5 [mm]* (Ø 2,5)	**3** *Protected against rain*	**IK05** 0,25 Kg 28 cm *Protected against impact energy 0,7J*
4 *Protected against solid bodies greater than 1 [mm]* (Ø 1)	**4** *Protected against sprinkles*	**IK06** 0,25 Kg 40 cm *Protected against impact energy 1J*
5 *Protected against dust*	**5** *Protected against water splashes from every directions*	**IK07** 0,5 Kg 40 cm *Protected against impact energy 2J*
6 *Totally protected against dust*	**6** *Protected against strong water splashes (waves)*	**IK08** 1,7 Kg 30 cm *Protected against impact energy 5J*
	7 *Protected against temporal immersion*	**IK09** 5 Kg 20 cm *Protected against impact energy 10J*
	8 *Protected against continuous immersion*	**IK10** 5 Kg 40 cm *Protected against impact energy 20J*

ADDITIONAL LETTER**

- **A** Protected against access with the back of the hand
- **B** Protected against access with a finger
- **C** Protected against access with a tool
- **D** Protected against access with a wire

OPTIONAL LETTER

- **H** High-voltage device
- **M** Tested against the harmful effects of water ingress with the equipment running
- **S** Tested against the harmful effects of water ingress with the equipment not running
- **W** Suitable for use in specified atmospheric conditions

* As per IEC EN 50102: 1996-05; IEC EN 60078-2-7-5: 1998-09.

** Optional letter describing protection against access by persons. Only used if protection against access to hazardous parts is greater than that indicated by the first digit, or if only protection against access to hazardous parts is given and an X is used in place of the first digit.

MATERIAL USED

We use many different materials to produce equipment and components designed for areas with a potentially explosive atmosphere. Despite the careful choice of these materials to be transformed into finished products, we have to take into account the limitations imposed by nature.
All materials, including the ones we use, have three enemies:
- environment;
- temperature;
- time.

Temperature and time are familiar factors, while the environment, where our products are used, is not easy to control.
We are not talking about familiar potential hazards caused by an explosive atmosphere (which can be controlled by laboratory tests and guaranteed by certification), but rather deterioration caused by highly aggressive environments like chemical and petrochemical plants.
Corrosion resistance is a relative factor, as it depends on the actual environmental conditions that significantly influence the nature of the attack. Shown below are described the materials mainly used by ELFIT for the production of cable glands and electrical fittings.

NICKEL-PLATED BRASS

We use this material (leaded brass with Cu 58%, Zn 40% and Pb 2%) exclusively for the construction of Ex cable entry (Cable glands). Besides the traditional copper (Cu) and zinc (Zn) alloy, our material has also a low lead (Pb) percentage on the external part of the bar, which simplifies the turning since it does not create a solution with the alloy Cu-Zn, and since it has a lower solidification temperature than the other two elements. Subsequently, it undergoes a surface treatment of electrolytic nickel plating, to provide the product, more than with an aesthetic aspect, with a higher corrosion-protection level by external agents.

ALUMINIUM ALLOY

Aluminium alloy is one of the world's most widely used materials in the production of explosion-proof enclosures.
It is highly corrosion-resistant and, therefore, universally known as the most effective and versatile material for most applications.
It is much lighter than cast iron, so it makes the equipment much easier to install and maintain; moreover, it is highly corrosion-resistant and does not require surface protection, unlike cast iron which has to be galvanized or coated.
Aluminium is also much cheaper than stainless steel.

Aluminium and its alloys have generally excellent corrosion resistance in various and different environments.
Despite of it's a very chemically active metal, its behavior is stabilized by the formation of a protective oxide film on its surface. This film, which in case of breakage is able to reproduce itself immediately, has a thickness, if formed in the air, ranging from 50

	Fe	Si	Mn	Ni	Ti	Cu	Pb	Mg	Zn	Sn	Other
AlSi10Mg(a)	max 0,55	9 ÷ 11	max 0,45	max 0,05	max 0,15	max 0,05	max 0,05	0,2 ÷ 0,45	max 0,1	max 0,05	each 0,05; total 0,15
AlSi12(b)	max 0,65	10,5 ÷ 13,5	max 0,55	max 0,1	max 0,2	max 0,15	max 0,1	max 0,1	max 0,15	//	each 0,05; total 0,15

Tab. 6 Chemical composition of aluminum-silicon alloys

to 100 A.

STAINLESS STEEL

The stainless steels are iron-, coal- and chrome-based alloys that combine the mechanical properties typical of carbon steels with the corrosion resistance properties, due to a thin and transparent surface layer called "passivation layer". It is formed when the materials of the alloy come into contact with the air or water oxygen.
This phenomenon in stainless steel, in ideal conditions, occurs naturally and immediately.
This protection can also be artificially and optimally induced carrying out a particular chemical treatment by immersing the products in sequence, first in pickling acid and, subsequently, in a passivating acid. This treatment enhances very significantly the corrosion resistance, making this invisible layer, which has the thickness of a few atoms (about 0.002 microns) and which reform spontaneously, an excellent barrier to oxidation and corrosion. Essential condition for the formation of a protective layer is the presence of a sufficient amount of chromium.

The stainless steels are traditionally divided into three big families, depending on their metallographic structure:

- martensitic;
- ferritic;
- austenitic.

Austenitic steels, which are usually used for the construction of electrical equipment, suitable for environments with risk of explosion and in the presence of aggressive substances, are mainly:

- AISI 304 It's a founder of austenitic stainless steels. It has good corrosion resistance and good mechanical characteristics. Used in the pharmaceutical and food industries.
- AISI 304L It differs from AISI 304 for the low carbon content (C≤0,03%), which considerably increases the resistance to corrosion. Because of the low carbon content of the mechanical characteristics, they are slightly inferior to AISI 304 ones.
- AISI 316 Compared to AISI 304 contains molybdenum with percentage of about 2,5% and a higher percentage of nickel. These elements give to the steel superior mechanical characteristics and a higher resistance to corrosion at high temperatures. Used in the processes of machining and of installations in contact with seawater.
- AISI 316L It differs from AISI 316 for the low carbon content (C ≤ 0,03%). It has a better corrosion resistance maintaining good mechanical characteristics. Used for the construction of electrical equipment and for the construction of distribution panels in environments with explosion risk and the presence of gases or dusts, corrosive agents and high temperatures.

GALVANIZED STEEL

We use even this type of material, an iron (Fe) carbon (C) alloy, as well as nickel-plated brass, for connection elements of Ex entries. It is a stainless steel, sweet, for general use, with small amounts of lead, bismuth, tellurium or sulfur.
To protect the component from corrosion, at the end of machining it undergoes a galvanizing process.

SILICONE

The silicone, as well as the neoprene, is one of main materials we use for our seals. Silicones or polysiloxanes (methylvinyl polysiloxane) are inorganic polymers based on a silicon-oxygen chain and organic functional groups (R) linked to the silicon atoms. Typically, the silicone rubbers (VMQ) are remarkably resistant to temperature, chemical attack and oxidation, and are excellent electrical insulators. They are excellent non-stick, flexible, resistant to aging and to high temperatures.

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CATELFIT09/18 - K300
Print: GRAFICA GORIZIANA
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