

Safety note SN/271GD.... rev.2***Electromagnets type 271GD....***

 ***II 2 GD / I M2***

Ex db IIC T6, T5 Gb

Ex tb IIIC T85°C, T100°C Db

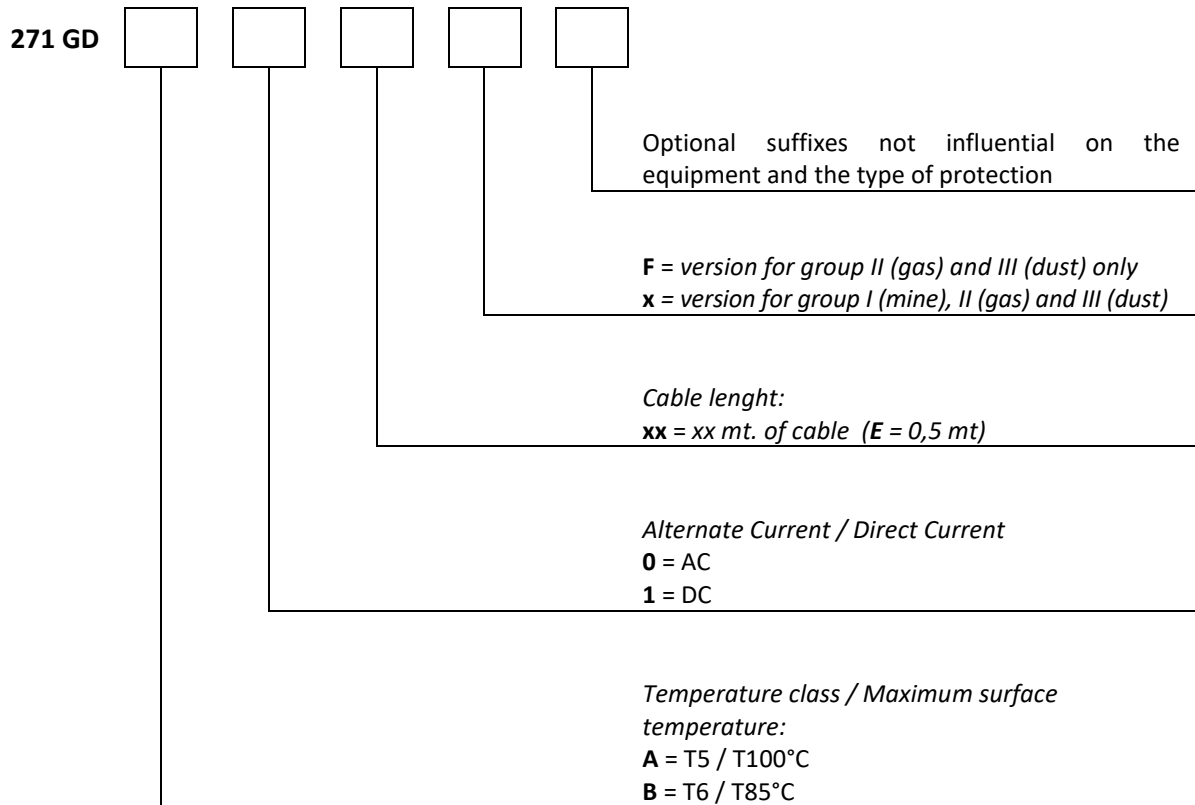
Ex db I Mb

1. GENERAL DESCRIPTION

The coil type 271GD are device suitable to be installed in zone 1 / zone 21 with type of protection Ex db IIC / Ex tb IIIC and Ex db I for mine, in accordance with:

- IEC 60079-0: 2017 Equipment - General requirements
- IEC 60079-1: 2014 Equipment protection by flameproof enclosures "d"
- IEC 60079-31 2013 Equipment dust ignition protection by enclosure "t"
- EN IEC 60079-0: 2018 Equipment - General requirements
- EN 60079-1: 2014 Equipment protection by flameproof enclosures "d"
- EN 60079-31 2014 Equipment dust ignition protection by enclosure "t"

Model identification:



2. TECHNICAL CHARACTERISTICS

Rated voltage : 12 ÷ 125V_{DC}
24 ÷ 230 V_{AC} - 50/60 Hz

Maximum power : 6,5 ÷ 11 W

The temperature class and the maximum surface temperature depends on the solenoid power:

<i>Temperature class</i>	<i>Maximum surface temperature</i>	<i>Rated Voltage</i>	<i>Max. Power</i>
T5	T100°C	12 ÷ 125 VDC	9,5 W
T5	T100°C	24 ÷ 230 VAC	11,0 W
T6	T85°C	12 ÷ 125 VDC	6,5 W
T6	T85°C	24 ÷ 230 VAC	7,0 W

Ambient temperature : from -20°C to +40°C

Protection degree : IP66/IP67

Cable : 3x1,5mm² suitable for at least temperature = 105°C (length specified in the identification code with minimum = 3m)

3. MARKING

ATAM S.p.A

Type : 271GD....

ATEX Directive:

CE 0722  **II 2 GD / I M2**

UKCA marking:

**UK
CA** 2503

Type of protection

Ex db IIC T6, T5 Gb

Ex tb IIIC T85°C, T100°C Db

Ex db I Mb

Each models is provided by specific marking depending the electromagnets power.

0722 = Notified Body identification number for quality production survey (CESI-ATEX/IECEx)
2503 = Approved Body identification number for quality production survey (CML-UKCA)
II / I = group II and group I
2 GD = category 2 GD, equipment suitable for zone 1 (gas) and zone 21 (dust)
M2 = category M2, equipment for mine, de-energized when explosive atmosphere present

Type of protection

Ex db IIC = type of protections for gas group IIC

T6, T5 = temperature class for gas

Gb = EPL (Gas)

Ex tb IIIC = type of protection for dust group IIIC

T85°C, T100°C = maximum surface temperature for dust

Db = EPL (Dust)



Safety Note electromagnets type 271GD....

Ex mb I = type of protection for group I

Mb = EPL (Mine)

Relation between hazardous areas, categories and EPL

Hazardous area		Categories	EPL
Gas, vapour or fog	Zone 0	1G	Ga
Gas, vapour or fog	Zone 1	2G or 1G	Gb or Ga
Gas, vapour or fog	Zone 2	3G, 2G or 1G	Gc, Gb or Ga
Dust	Zone 20	1D	Da
Dust	Zone 21	2D or 1D	Db or Da
Dust	Zone 22	3D, 2D or 1D	Dc, Db or Da
Mine	-	M2	Mb or Ma

4. SAFETY INSTRUCTIONS FOR INSTALLATION IN HAZARDOUS AREAS

The electromagnets type 271GD.... shall be installed and maintained according to the applicable standards regarding electrical installations in hazardous area (for example: IEC/EN 60079-14 and IEC/EN 60079-17 or other national standards).

Before installing, carefully read the instruction manual.

This apparatus must be installed and put into operation in accordance with the provisions and regulations. Shall not be liable for damage caused by non-observance of the instructions and inappropriate use.

Bodies of electromagnets type 271GD.... are provided by an external ground connection terminal located onto the body. Such a terminal must be connected to the earth line of system with a suitable cable.

An additional ground wire, connected internally to the body of solenoids, is incorporated to the cable of solenoids. It is a green-yellow cable with section of 1,5 mm².

The cable used shall be suitable for temperature of at least 105°C and comply with the requirements of IEC/EN 60079-14 standard: with cable length < 3m a barrier cable gland shall be used (coils with cable length ≥ 3m are provided with cable gland with seal ring, therefore the cable cannot be shortened without changing the cable gland).

It is forbidden any technical modification.

In zones with presence of combustible dusts it is necessary to periodically clean the surface of the lighting fixtures, limiting the depth of the layer to less than 5 mm.

Any repair activity of the ex-proof solenoids isn't admitted. In case of damage any ex-proof solenoid must be replaced with a new one of the same type.

Notes:

- The dimensions of flameproof joints are different from the values specified in the tables of the IEC/EN 60079-1 standard. For any repair on flameproof joints, contact the manufacturer for information.
- For the equipment with a permanently connected cable, the user shall connect the free extremity of cable either in a non-explosive atmosphere, or in an enclosure protected by a recognized protection mode adapted to the area.

Warning label:

DO NOT OPEN WHEN AT.EX. IS PRESENT.

Note:

AT.EX. = Atmosphere explosive

1. GENERAL DESCRIPTION

Coils type 455GD are device suitable to be installed in zone 1 / zone 21 with type of protection Ex db IIC / Ex tb IIIC and Ex db I for mine, in accordance with:

- IEC 60079-0: 2017 Equipment - General requirements
- IEC 60079-1: 2014 Equipment protection by flameproof enclosures "d"
- IEC 60079-31 2013 Equipment dust ignition protection by enclosure "t"
- EN IEC 60079-0: 2018 Equipment - General requirements
- EN 60079-1: 2014 Equipment protection by flameproof enclosures "d"
- EN 60079-31 2014 Equipment dust ignition protection by enclosure "t"

Model identification:

455 GD



Optional suffixes not influential on the equipment and the type of protection

Cable length:

xx = xx mt. of cable (**E** = 0,5 mt)

00 = version without cable, 3E = 3.5 mt. of cable,

03 = 3 mt of cable, 10 = 10 mt. of cable.

Alternate Current / Direct Current

0 = AC

1 = DC

Temperature class / Maximum surface temperature:

0 = T4 / T135°C, Tamb.: -60/+70°C, Pmax: 30W

1 = T4 / T135°C, Tamb.: -60/+80°C, Pmax: 14W

2 = T5 / T100°C, Tamb.: -60/+60°C, Pmax: 14W

A = T5 / T100°C, Tamb.: -60/+70°C, Pmax: 10W

B = T6 / T85°C, Tamb.: -60/+55°C, Pmax: 10W

2. TECHNICAL CHARACTERISTICS

Rated voltage : 6 ÷ 240V_{DC} / 6 ÷ 240 V_{AC} - 50/60 Hz

The temperature class and the maximum surface temperature depends on the solenoid power and ambient temperature:

Temperature class	Maximum surface temperature	Ambient temperature	Rated Voltage	Max. Power
T4	T135°C	-60°C ÷ +70°C	6 ÷ 240 V _{AC/DC}	30 W
T4	T135°C	-60°C ÷ +80°C	6 ÷ 240 V _{AC/DC}	14 W
T5	T100°C	-60°C ÷ +60°C	6 ÷ 240 V _{AC/DC}	14 W
T5	T100°C	-60°C ÷ +70°C	6 ÷ 240 V _{AC/DC}	10 W
T6	T85°C	-60°C ÷ +55°C	6 ÷ 240 V _{AC/DC}	10 W

Tfluid max : ≤ maximum ambient temperature

Cable : 3x1,5mm² suitable for maximum temperature = 105°C (minimum length = 3m)
Cable not mounted on 455GD...00 version.

3. MARKING

ATAM S.p.A
Type: 455GD....

ATEX Directive:

CE 0722  **II 2 GD / I M2**

UKCA marking:

**UK
CA 2503**

Type of protection:

Ex db IIC T6, T5, T4 Gb

Ex tb IIIC T85°C, T100°C, T135°C Db IP66/67

Ex db I Mb

Each model is provided by specific marking depending the electromagnets power and ambient temperature.

0722	=	Notified Body identification number for quality production survey (CESI-ATEX/IECEX)
2503	=	Approved Body identification number for quality production survey (CML-UKEx)
II / I	=	group II and group I
2 GD	=	category 2 GD, equipment suitable for zone 1 (gas) and zone 21 (dust)
M2	=	category M2, equipment for mine, de-energized when explosive atmosphere present

Type of protection

Ex db IIC	=	type of protections for gas group IIC
T6, T5, T4	=	temperature class for gas
Gb	=	EPL (Gas)
Ex tb IIIC	=	type of protection for dust group IIIC
T85°C, T100°C, T135°C	=	maximum surface temperature for dust
Db	=	EPL (Dust)
Ex db I	=	type of protection for group I
Mb	=	EPL (Mine)
IP66/67	=	Degree of protection (IP)

Relation between hazardous areas, categories and EPL

Hazardous area		categories	EPL
Gas, vapour or fog	Zone 0	1G	Ga
Gas, vapour or fog	Zone 1	2G or 1G	Gb or Ga
Gas, vapour or fog	Zone 2	3G, 2G or 1G	Gc, Gb or Ga
Dust	Zone 20	1D	Da
Dust	Zone 21	2D or 1D	Db or Da
Dust	Zone 22	3D, 2D or 1D	Dc, Db or Da
Mine	-	M2	Mb or Ma

4. SAFETY INSTRUCTIONS FOR INSTALLATION IN HAZARDOUS AREAS

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Before installing, carefully read the instruction manual.

This apparatus must be installed and put into operation in accordance with the provisions and regulations. Shall not be liable for damage caused by non-observance of the instructions and inappropriate use.

Bodies of electromagnets type 455GD.... are provided by an external ground connection terminal located onto the body. Such a terminal must be connected to the earth line of system with a suitable cable.

An additional ground wire, connected internally to the body of coils, is incorporated to the cable of solenoids. It is a green-yellow cable with section of 1,5 mm².

The cable used shall be suitable for temperature of at least 105°C and comply with the requirements of IEC/EN 60079-14 standard: with cable length < 3m a barrier cable gland shall be used (coils with cable length ≥ 3m are provided with cable gland with seal ring, therefore the cable cannot be shortened without changing the cable gland).

It is forbidden any technical modification.

In zones with presence of combustible dusts, it is necessary to periodically clean the surface of the coil, limiting the depth of the layer to less than 5 mm.

Any repair activity of the ex-proof coils isn't admitted. In case of damage any ex-proof coil must be replace with a new one of the same type.

Wiring:

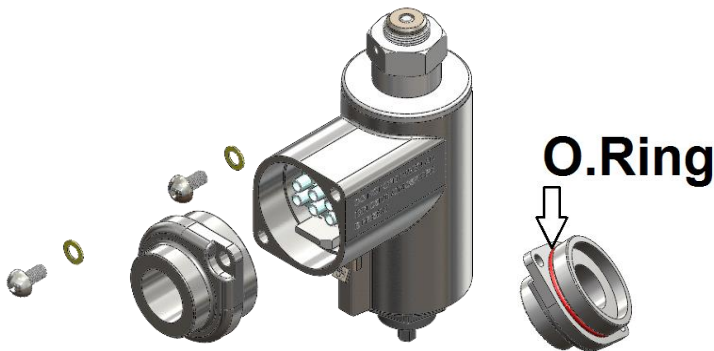
Wiring should be carried out with main power turned off.

Use always the proper connector already pre-assembled inside the coil according to the instructions listed below.

Step_1

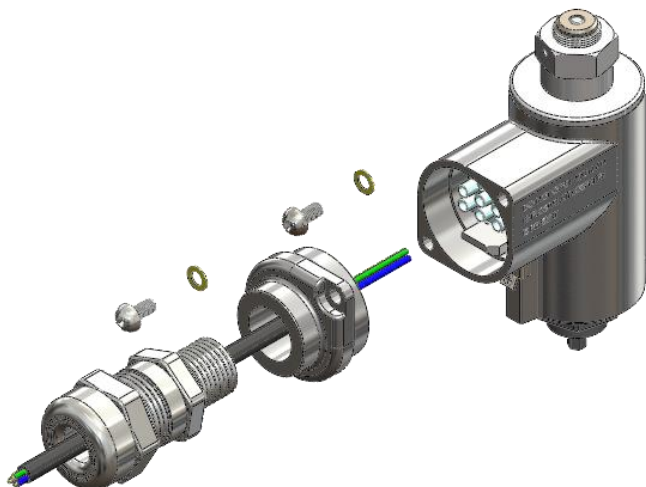
Remove carefully main flange by unscrewing 2 screws.

During this operation take care of preventing any damage to the gasket.



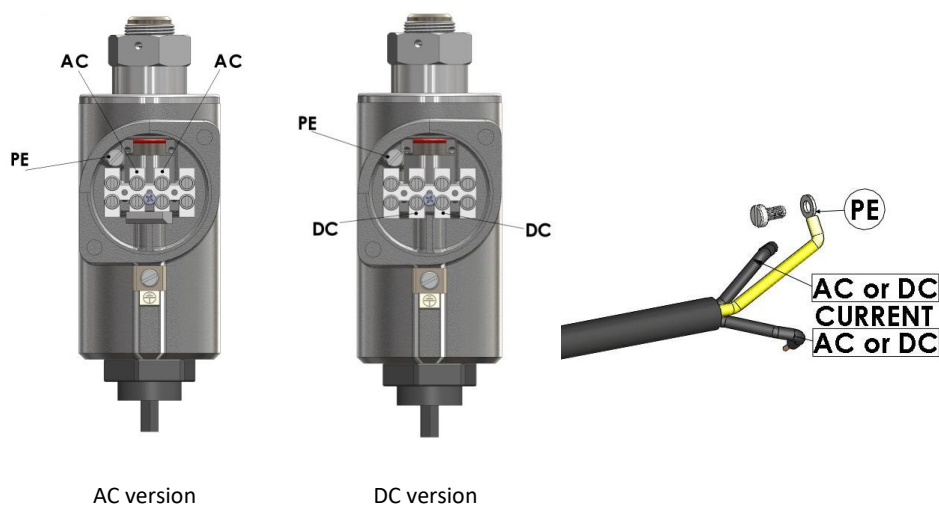
Step_2

Use proper cable gland ATEX/IECEx/UKEx certified with type of protection Ex db IIC / Ex db I /Ex tb IIIC, thread ½" NPT, min. IP66 / IP67 (according to the requirements of IEC/EN 60079-14 standard).



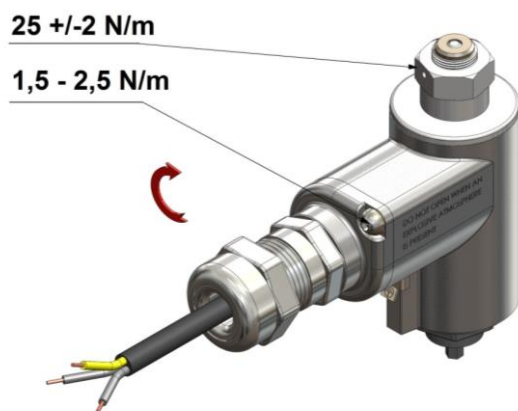
Step_3

Remove the connector and then proceed with main wiring to the proper positions as indicated below according to voltage type (AC or DC).



Step_4

Re-assemble the flange carefully, taking into account to prevent any damage to the gasket.
Respect max fixing torque as indicated below



Notes:

- The values used for the maximum gap of construction of flameproof joints are less than the values specified in the tables of the IEC/EN 60079-1 standard.
- The width of the different flameproof joints is superior to the values specified in tables of the IEC/EN 60079-1 standard.
- Actuator fixing torque: 25 ± 2 Nm

Warning label: DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT.
T_{table} : 105°C.