



SAFETY INSTRUCTIONS

09/06/09
Edition

For ex-proof solenoids in execution Flame proof Ex d Type 271 GD

1. FOREWORD

These safety instructions refer to installation, use & maintenance of ex-proof solenoids coded 271 GD for operation of solenoid valves to be used in areas with potentially explosive atmospheres. Solenoids that are matter of these instructions are classified by following protection mode : **II 2GD**

The device has been realized in conformity to the standards: **EN 60079-0 : 2006; EN 60079-1 : 2004; EN 61241-0 : 2006; EN 61241-1 : 2004**

Example of marking of the device : **ATAM 271GDXX CE 0722 II 2 GD Ex d IIC T5 (T6) Ex tD A21 IP67 T100°C (T85°C) INERIS 05 ATEX 0002X**

2. INSTALLATION

2.1 Suitability of installation ambient

For use in areas potentially explosive, it is necessary to verify that solenoids are conforming to classification of area & characteristics of flame-proof of all media that can be present in the area. Essential requisites of safety against the risk of explosion in any classified area, are stated by the European norms 94/9/CE of 23rd March 1994 (related to components) and 1999/92/CE of 16th December 1999 (related to plants).

Criteria for classification of areas with risk of explosion are regulated by the European norm EN 60079-10.

Technical requisites of electric plants of any classified area are regulated by the European norm EN 60079-14 or other national standards.

The interventions on these devices can only be carried out by qualified personnel.

For installation in hazardous area, the user must verify that the equipment is adapted to the classification of the area and the characteristics of different flammable substances present at the facility.

Following to these technical and legal prescription, following items are topic :

- Type of plant : Group I - mines; Group II - surface plant
- Classification of area : 0,1,2 (to which characteristics of components & apparatuses of class 1,2 & 3 are corresponding to)
- Characteristics of flammable media that are present in the area as gas, steams, mist : groups IIA, IIB, IIC
- Temperature class : T1, T2, T3, T4, T5, T6 (they refer to ignition temperature of gas)

Data that are quoted on label, besides the nominal operation data, include :

- Necessary information for a correct installation and start-up
- References of National Organisms charged for the certification of conformity of product

2.2 Limits for utilization

Solenoids type 271GD for operation of solenoid valves can be used with ambient temperature from -20 to +40 °C.

Protection according to EN60529 : IP67

Nominal data for solenoids type 271:

- Max electric power : 11W ac for temperature class T5 - 7 W ac for class T6
- Max nominal voltage : 230 Vac
- Nominal frequency for AC supply : 50-60 Hz

2.3 Data quoted on the label that refer to safety:

a) - II 2GD	ex-proof solenoid for surface plants with presence of gas, steams or powders of classification 2, suitable for area 1 and (redundant) for area 2
b) - Ex-d	ex-proof solenoid
c) - II C	solenoid of group II C for application with media of group II C
d) - • x	mark of conformity to European Directive 94/9/CE and concerned technical norms
e) - CE	mark CE in conformity to European Directive 94/9/CE and concerned technical norms
e) - CESA	name of Organism that has certified the product according to CE norm
f) - xx	year of issue of certificate
g) - xxx	number of certificate CE
h) - 0722	number of Organism that has effected the certification of quality of the production system

Important Notes

- I. Ex-proof units of group II C are suitable as well for ambient with presence of gas and steams of group II A & II B
- II. Ex-proof units of class T6 are suitable as well for class of temperatures from T1 to T5. Ex-proof units of class T5 are suitable as well for class of temperatures from T1 to T4.
- III. Screws and bolts associated to the units must be of minimum quality class 8.8 according to UNI EN 20898
- IV. To grant the protection degree IP67, after any possible disassembling of unit, it is requested to verify the integrity of OR seals seated within the solenoid body and closing flanges and between these latter and the tube of solenoid.

2.4 Connections to control and supply apparatus

Connections to control and supply apparatus are executed by means of tripolar cable, hold by a cable gland conforming to European Norms EN 60079 related to ATEX.

2.5 Ground connection

Bodies of ex-proof solenoids type 271 are provided by an external ground connection terminal located onto the body in conformity to prescriptions of norm EN 60079-0.

Such a terminal must be connected to the earth line of system by a cable of minimum section of 4 mm²

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

3. CONTROLS AND MAINTENANCE

All interventions for controls and maintenance of ex-proof solenoids must be conducted according to European norm EN 60079-17.

In particular specific care must be paid to :

- Screws must be tightened to required torque value
- Substitution of parts that are subjected to wear (as for instance the OR seals) must be executed with parts having identical characteristics of original parts to grant the conformity with ex-proof and protection degrees requests of the unit
- Surfaces and mechanical coupling between the different elements of solenoid cannot be machined nor altered in the dimensions originally stated.

4. REPAIRS OF EX-PROOF SOLENOIDS

Any repair activity can be conducted only by Atam or by workshops authorised by Atam.

Any intervention on body of ex-proof solenoid must be effected in strict accordance with all requirements and parameters of ex-proof construction. In the case, after the repair work, the expected ex-proof requirements will not be achieved, solenoid will have its identification label removed and unit will not be considered any more as ex-proof.

5. SPECIAL CONDITIONS

The values of gaps of explosion-proof joints are lower than the maximum specified on Table 2 of EN 60079-1 Standard. In case the maintenance should require the replacement of any component which forms part of an explosion-proof joint, only an original spare provided by ATAM WINDINGS must be used. Direct repair or reconstruction of the above components are not permitted without the ATAM Windings permission. Not performing this procedure will invalidate the product safety and contractual guarantee.