

1- FOREWORD

These safety instructions refer to installation, use & maintenance of encapsulated coils Ex type 209 for operation of solenoid valves to be used in areas with potentially explosive atmospheres.

The coils type 209 are Group II equipment, category 3 GD to be used in classified area with presence of gas, vapour, flammable mist and combustible dust, with type of protection Ex nA IIC T6, T5 Gc / Ex tc IIIC T85°C, T100°C Dc. These coils are developed and produced according to the ATEX 94/9/EC directive and relevant applicable European standards : EN 60079-0, EN 60079-15 and EN 60079-31.

2- INSTALLATION

2.1 Suitability of installation ambient

For the utilization in potentially explosive areas it is necessary to verify that solenoids are conforming to classification of area & characteristics of flammability of all media that can be present in the area. Essential Safety Requirements of safety against the risk of explosion in any classified area, are stated by the ATEX 94/9/EC directive (equipment); the minimum requirements regarding workers in potentially explosive atmospheres are stated into ATEX 1999/92/EC directive (installation).

Criteria for classification of areas with risk of explosion are mentioned into EN 60079-10-1 standard (gas) and EN 60079-10-1 standard (dust).

Technical requirements of electric installation in hazardous location are provided by the EN 60079-14 standard.

Following to these technical and legal prescription, following items to take into account :

- Type of industries : Group II - surface plant
- Classification of area : zone 2 / 22 (to which the equipment characteristics are related; category 3 G / 3 D)
- Characteristics of flammable media that are present in the area as gas / mist
- Maximum surface temperature and temperature class: (by the maximum surface temperature and temperature class we can identify if the solenoid is suitable to the dust and gas present)

Data which are mentioned on the label, besides the rated operation data, include the necessary information for a correct installation and start-up

2.2 Limits for utilization

Solenoids type 209, for operation of solenoid valves, can be used with the following ambient temperature :

from -20 to +50 °C. (12VDC 8 W - 24VDC 8 W - 24VAC 10VA - 110VAC 10VA - 220VAC 10VA)

Protection degree is IP 65 according to EN 60529 standard, by using appropriate gaskets and connector; the connector used shall be suitable to the zoning (zone 2 / 22) with a minimum protection degree IP65

Nominal data for solenoids type 209

- Max electric power: **8W / 10VA**
- Max rated voltage : **12, 24 [Vdc] 24, 110, 220 [Vac]**

2.3 Data quoted on the label that refer to safety

CE	CE marking in compliance to the directive 94/9/EC and to all the applicable European directives
Ex	Marking in compliance to ATEX directive 94/9/EC and to applicable technical standards
II 3 GD	Coil group II for surface installation, Category 3, with presence of combustible gas and dust, suitable for Zone 2 (gas) and Zone 22 (dust)
Ex nA	Type of protection "nA" (non-sparking devices) for gas
IIC	Gas group IIC (equipment suitable for all types of gas)
T6, T5	Temperature classes for gas
Gc	Equipment for gas, vapor or mist, with normal level of protection (EPL Gc)
Ex tc	Type of protection "tc" (dust tight equipment) for combustible dust
IIIC	Group of dust IIIC (equipment suitable for all types of combustible dust)
T85°C, T100°C	Maximum surface temperature for combustible dusts
Dc	Equipment for combustible dust with normal level of protection (EPL Dc)

Important Notes

- Ex coils rated class T6 are suitable as well for class of temperatures from T1 to T5. Ex coils rated class T5 are suitable as well for class of temperatures from T1 to T4.

2.4 Connections to control and supply apparatus

Connections to control and supply apparatus are performed by fast on, directly fixed onto the coil. The users have to connect on the coil the suitable connector complies to ATEX requirements. **It is prohibited to disconnect the coil when energized.**

2.5 Ground connection

Coils type 209 are provided with an earth fast on connection terminal located onto the body in conformity to prescriptions of EN60079-0 and EN 60079-15 standards. Such a terminal must be connected to the earth line of the system.

3 - CONTROLS AND MAINTENANCE

All operations of controls and maintenance regarding Ex solenoids must be performed according to EN 60079-17 standard.

In particular specific care must be paid to :

- Surfaces of coil cannot be machined nor altered in the dimensions originally stated.
- Substitution of parts that are subjected to wear (as for instance the OR seals) must be replaced by original spare parts to in order to maintain the conformity to the ATEX certificate.
- At the end of reassembly of the parts that constitute a coupling between coil and solenoid, must be replace the tightening of any parts

4 - REPAIRS

Any repair activity of the Ex coils is not permitted: in case of damage of any Ex coils, they shall be replace with a new one of the same type.

5 - STOCKING

Stock the product for short periods in cold rooms, dry, shaded and not exposed to corrosive agents.

6 - SPECIAL CONDITION

The user have to clean regularly the external surface of the coil for avoid the store of dusty layer.