

INSTRUCTION SHEET FOR SOLENOID VALVES
WITH ATEX APPROVAL Ex d

Read this instruction sheet before starting the installation. The observance of the below is essential for operator safety, product integrity, consistency of the declared characteristics and maintenance of the blanket guarantee of sale. This product should only be used for which it has been designed. Any other use is considered improper and therefore dangerous. The manufacturer shall not be liable for any damages caused by tampering, misuse or incorrect use. Installation and maintenance of the product should be performed by qualified personnel according to EN 60079-14. The solenoid can be used in Zone 1, Zone 2, Zone 21, Zone 22.

1 INSTRUCTIONS FOR THE INSTALLATION

- 1.1 It is important before installing to check that the solenoid valve corresponds with the required characteristics (see data plate and / or catalogue).
- 1.2 The solenoid valves must be installed taking into account the direction indicated by an arrow on the valve body.
- 1.3 In case that in the solenoid valve it is used greased air, the grease must be compatible with the elastomers.
- 1.4 Before installation, remove any protective caps.
- 1.5 Any assembly or maintenance operation on the explosion proof housing enclosure containing the coil should only be done when all the fluid connection of the solenoid valve are connected with the joints of the plant on which the solenoid valve is assembled.
- 1.6 It must be avoided any kind of tension, forcing or twist on the solenoid valve.
- 1.7 Be careful that no foreign body can enter in the solenoid valve during assembly (e.g., chip material, dirt, pieces of PTFE tape on the joints or other).
- 1.8 The use of solenoid valve, except for special models, is possible at any position. It is still recommended the installation in vertical position, with coil upwards to prevent that any impurities, deposited inside the tube, may cause a malfunction.
- 1.9 If the coils are used in assembly, pay attention to the minimum distance according to temperature class (see specifications).
- 1.10 Do not immerse the solenoid valve in liquids or do not expose it to rain, splashing water or steam.
- 1.11 Do not use the armature tube and/or the coil as a tightening tool. This may cause irreparable damages to the solenoid valve and leakage of fluid. Assemble pipes and fittings in accordance with the solenoid valve connections threads.
- 1.12 Ensure that the magnet terminals do not come into contact with each other to avoid any power shortages.
- 1.13 It is advisable to install a filter upstream the solenoid valve to prevent that dirt, slag or deposits contained in the fluid, may affect its proper functioning.
- 1.14 Exclusively use fixing holes of the body to fix it. No modifications are permitted.
- 1.15 Before making the electrical connection of solenoid valve verify that the voltage and frequency match the value on the data plate
- 1.16 With ED different than the 100%, duty cycle is 60 seconds. E.g. ED 50% = 30 sec. ON, 30 sec. OFF.
- 1.17 Connect the solenoid valve to appropriate grounding system (see diagram earth connection), in compliance to EN 60079-14.
- 1.18 Do not feed the electromagnet until it has been assembled on the valve body to avoid burning.
- 1.19 Take appropriate measures to avoid accidental activations.
- 1.20 Turn the electromagnet in the best position by loosening and then tightening the top nut securing the coil with a 2 Nm tightening torque.

With case closed, in order to prevent loosening of the nut of the coil, we do not recommend any rotations.

- 1.21 **Caution! Risk of physical harm!** The surface of the coil can be very hot during operation. The heating of the electromagnet during operation is normal.
- 1.22 Install solenoid valve away from heat sources and environments that can dissipate the heat generated by the electromagnet.
- 1.23 Place solenoid valve in such a way to avoid that it is subjected to mechanical stress or vibration.
- 1.24 The external surfaces of the electromagnet must be free from contact with corrosive liquids and corrosive agent.
- 1.25 If solenoid valve drops or receives shock, verify its integrity before use.
- 1.26 During the connection of the wires into the connector in the housing, ensure that the leaders of the wire are inserted properly in the electrical terminals. The terminals to which the cable connects must be certified to 2014/34/UE if the connection is certified in the area.
- 1.27 The connection cables and wires should be free to bend in order to prevent short circuits or interruptions.
- 1.28 Use clamps or cables suitable for use in ZONE 2G, for potentially explosive atmospheres due to the presence of gases, vapours and mists with group IIC gases and for use in Zone 2D, for potentially explosive atmospheres due to the presence of combustible dust attack gland ½ NPT.
- 1.29 Protect the power circuit of the solenoid valve with a suitable fuse (see following table).
- 1.30 After disconnecting power to the device, wait for 30 'minutes before opening the case.

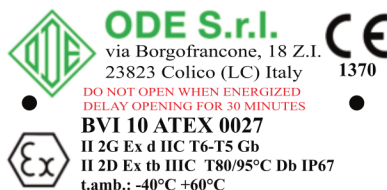
The following table lists the fuses to be used with combination of the electromagnet:

Voltages Frequency	Coil type B	Coil type U
	Fuse [mA]	
12 DC	1000	1200
24 DC	600	600
24 ~ 50/60	1000	1000
48 DC	250	-
48 ~ 50/60	375	-
110 DC	125	-
110 ~ 50 120 ~ 60	175	200
230 DC	50	-
230 ~ 50 240 ~ 60	100	125

2 RATING

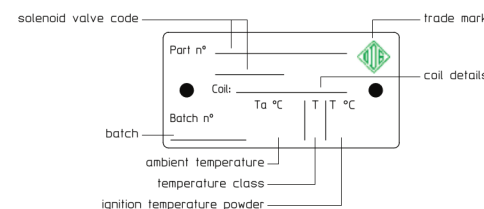
The finished product will have the following labels:

- 1) identification label features Atex



Ex	Atex marking
II	Atex equipment group
2	Equipment category
G D	Use in explosive mixture in the presence of air, gases, vapors or mists and dusts
d	Non-sparking type of explosion protection
IIC	Gas group
T5 T6	Temperature class gas as a function of ambient temperature
Gb	Protection level of the equipment for use in areas at risk of explosion due to the presence of gases, vapors, mists
tb	Protection mode for use in explosive environment in the presence of combustible dusts
IIIC	Group powder
Db	Areas of use in potentially explosive atmospheres due to the presence of combustible dust
IP67	Degree of protection against the presence of solids and water
T80 / T95°C	Ignition temperature powder
0027	N° CE -type
CE1370	Body responsible for certification
t.amb	Room temperature

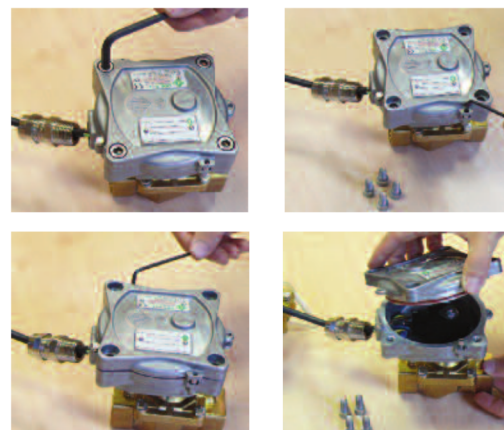
- 2) identification label with characteristics of the product



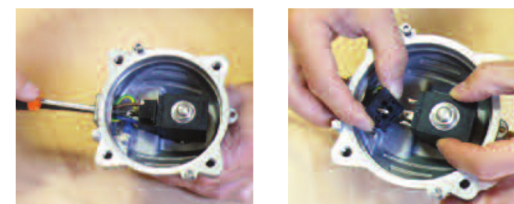
3 MAINTENANCE

The maintenance of the product described is not allowed. The following is the electromagnet substitution scheme.

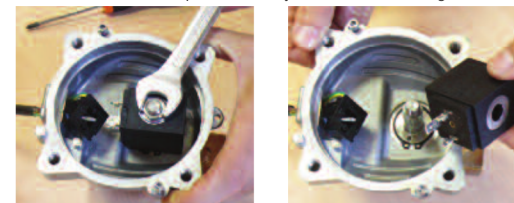
The following operations must be performed by trained personnel, without electric power and with no explosive atmosphere.



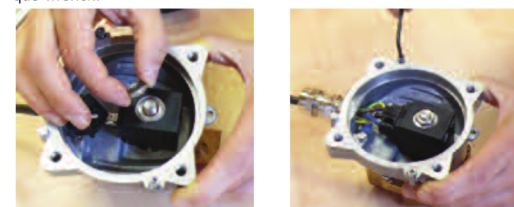
Unscrew the n. 4 allen screws M8x18. Remove the cover unscrewing alternatively n. 2 screws M4x12 allen-extractors to ensure that the cover slides off evenly without getting stuck in place.



Move nut and washer and pull reel with key 14 from the electromagnet rod tube.

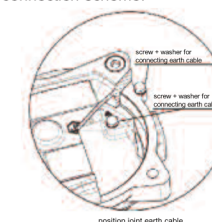


Replace the electromagnet and do the reassembly of the nut with the key closing 14 with 2Nm and n. 4 M8x18 screws cover with 9 Nm using a torque wrench.



Replace the electromagnet, reassembly of the nut with the key closing 14 with force 2Nm. Replace still stops screwing n. 2 screws M4x12 allen-pullers, assemble the cover being careful not to wear out the seals and close the n. 4 screws M8x18 to 9Nm using a torque wrench.

Below, grounding connection scheme:



4 NOTE FOR DISPOSAL

Observe local regulations and laws for the disposal of pollutants.

THESE INSTRUCTIONS ARE INTENDED AS A GUIDE FOR THE CORRECT USE OF ODE SOLENOID VALVES BUT DO NOT IN ANY CASE SUBSTITUTE THE CATALOGUE, WHICH PROVIDES FULL DETAILS OF ALL THE FEATURES OF EACH SOLENOID VALVE. CONTACT OUR SALES OFFICE FOR ANY FURTHER CLARIFICATIONS THAT MAY BE REQUIRED.