MAC ATEX Valves: user’s manual

This user’s manual is intending to provide following information to the users of MAC ATEX Valves:

- Valves identification/marking
- ATEX classification
- Application parameters
- Mounting
- Maintenance
- Repair
- Warranty

1. Valve identification/marking

All ATEX valves are clearly identified by the following features:
- ATEX identification plate on top of the solenoid
- Valve label on the side of the solenoid
- Cable gland

Identification plate on top of the solenoid

The plate on top of the solenoid provides following information about the valve and its use in an ATEX environment.

The following information is to be found:
- CE marking
- Manufacturer
- MAC valve type
- Year of production
- Serial number
- Voltage, Wattage
- Pressure range
- ATEX marking: type of protection, group, nature of explosive environment, class of temperature, protection level
- Identification of notified body
- Number of ATEX certificate

Valve label on side of the solenoid

The label at the side of the solenoid provides following information:
- MAC valve type
- Voltage & Wattage
- Pressure range

Cable gland

The cable gland which is part of the valve provides following information:
- Manufacturer (CMP)
- CMP references
- ATEX marking
- Reference of ATEX certificate

2. ATEX classification

The valve is intended to be used in the ATEX environment specified by the marking on the top identification plate:

Gas:
- Type of protection: dB - flameproof enclosure
- Group II C: electrical equipment for places with an explosive gas atmosphere other than mines susceptible to firedamp (nature of gas: propane, ethylene, hydrogen)
- Nature of explosive environment: G: gas
- Temperature class: maximum surface temperature: T4...T5: 100°C-135°C (this is the maximum temperature that can be reached by the valve during its operation under normal conditions of use)
- Protection level: Gb: equipment for use in areas in which explosive atmospheres caused by gases, vapours & mists or air mixtures are likely to occur

Dust
- Type of protection: tb: protection by enclosure
- Group III C: electrical equipment for places with an explosive dust atmosphere other than mines susceptible to firedamp (nature of dust: combustible flyings, non-conductive dust, conductive dust)
- Nature of explosive environment: D: dust
- Temperature class: maximum surface temperature: T135°...T100°: 100°C-135°C (this is the maximum temperature that can be reached by the valve during its operation under normal conditions of use)
- Protection level: Db: equipment for use in areas in which explosive atmospheres caused by dust mixtures are likely to occur

It is the responsibility of the user to make sure that the valves are used in the explosive environment described above.

3. Application parameters

The valves have to be used according to the conditions of use described in the technical data sheet (DOC-FT-200 series) joined to the valve

4. Mounting instructions

As the valves are intended to be connected to compressed air, vacuum or neutral gases and to be operated by an electrical signal, air and electrical connections have to be considered

Electrical connection
- The ATEX protection of the valve ends with the cable
- The user is responsible for an ATEX approved electrical connection and for using an appropriate junction box for the flying leads and the cable
- The cable must not be damaged when mounting the valve and connecting the wires
- A valve with damaged cable has to be replaced by a new one
- The cable gland is fixed on the solenoid with a specific torque during the production and cannot be dismounted by the user
- The cable nut is tightened on the cable with a specific torque

5. Maintenance

- Valves have to be operated according to the conditions of use mentioned on the technical data sheet
- No maintenance is required during their entire lifetime
- Valve cannot be dismounted by the user
- Valves with faulty operation have to be replaced by new ones
- Faulty valves to be returned to the supplier for internal technical investigation according to the manufacturer’s return procedure

6. Repair

- Valves are not repairable
- Faulty valves have to be replaced by new one
- Faulty valves have to be returned to the supplier for internal technical investigation according to manufacturer's return procedure

7. Warranty

- Valves that are failing during the period of time covered by the warranty have to be returned to the supplier for internal technical investigation according to the manufacturer return procedure
- Based on the results of the investigation made by the manufacturer, the manufacturer will decide if the failure is covered by the warranty or not
- Valves presenting failures covered by the warranty will be replaced for free
**MAC ATEX Certified 200 Series - Manifold Valve**

- Balanced poppet, immune to variations of pressure
- Short stroke with high flow
- The patented solenoid develops high shifting forces
- Powerful return spring
- Burn-out proof solenoid on AC service

**How to order - Valve**

<table>
<thead>
<tr>
<th>PORT SIZE</th>
<th>UNIVERSAL VALVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve less base</td>
<td>250B-XX/XXEE Ex ECG</td>
</tr>
</tbody>
</table>

**How to order - Solenoid**

<table>
<thead>
<tr>
<th>VOLTAGE</th>
<th>MANUAL OPERATOR</th>
<th>ELECTRICAL CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 110 V~/50 Hz - 120 V~/60 Hz</td>
<td>No operator</td>
<td>EE Explosion proof enclosure</td>
</tr>
<tr>
<td>02 220 V~/50 Hz - 240 V~/60 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03 24 V~/6 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04 24 V~/4,5 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05 12 V~/9,5 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06 24 V~/8,5 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07 68 120 V~/12,5 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08 76 100 V~/9 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09 78 24 V~/24 W</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DEVICE MARKING**

- For Går 2G / Ex db IIC T4B5° Gb
- For Dust 2D / Ex tb IIIC T135°/T190°C Db

**Declaration of conformity**

MAC VALVES EUROPE, INC.
Rue Marie Curve, 12
B-4431 ANS
Belgique

hereby declares that following valve series, produced after 2019.01.07, are in compliance with the directive:

2014/34/UE

*Applicable standards*

- EN 60079-0 : 2012+A11 : 2013
- EN 60079-1 : 2014
- EN 60079-31 : 2014

This declaration is valid as long as the product is not damaged or modified, and if the safety recommendations described in the technical data sheet are respected.

**Device marking**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX = 24, 25, 50</td>
<td>Valve body</td>
</tr>
<tr>
<td>YY = 11,12, 22, 50, 51, 60, 61, 68, 76</td>
<td>Rated voltage</td>
</tr>
<tr>
<td>( v = H, F, T )</td>
<td>Cable length</td>
</tr>
</tbody>
</table>

**List of valve options**

- Air valves 200B Series

**Technical data**

- **Fluid:** Compressed air, vacuum, inert gases
- **Pressure range:** Vacuum to 10 bar
- **Lubrication:** Non-lube service
- **Filtration:** 40 µ
- **Temperature range:** -18°C to 40°C
- **Orifice:** 4,8 mm
- **Flow (at 6 bar, \( \Delta P = 1 \) bar):** 500 Nl/min (0.5 Cv)
- **Coil:** Epoxy encapsulated - Class F wires
- **Voltage range:** -15% to +10% of nominal voltage
- **Protection:** IP6X

**Dimensions**

**Fluid:** Compressed air, vacuum, inert gases