

Explosion Proof 2/2 Directional Valve, Solenoid Operated, Poppet Type, Piloted

SD3EX-C2*202(2L2)

1-1/16-12 UN • Q_{max} 150 l/min (40 GPM) • p_{max} 350 bar (5100 PSI)



Technical Features

- › 2/2-screw-in cartridge poppet valve with 1-1/16-12 UN connection thread
- › High tightness of the closed valve
- › Maximum operating pressure 350 bar
- › Certification of solenoid coil ATEX (Directive 2014/34/EU) and IECEx, valid for mines and environments with potentially explosive atmospheres consisting of gases or dust
- › Coil protection by encapsulation "m" for gases and by flameproof enclosure "t" for dust
- › Robust design resistant to mechanical damage
- › Protection against static discharge by grounding the valve surface
- › Valves applicable for temperature classes T4 (135 °C), T5 (100 °C) and T6 (85 °C) depending on maximum ambient temperature
- › Optional coil supply voltage, valve connection and type of manual override
- › The valve is zinc coated for 520 h corrosion protection in NSS acc. to ISO 9227 and as protection against ignition spark in the event of mechanical impact

Product Description

Pilot operated screw-in cartridge poppet valve, operated by solenoid. The valve is designed to dam the fluid flow and stop the appliance. The valve is certified for use in potentially explosive atmospheres of gases, vapours, dust and combustible particles with a high protection level EPL = b.

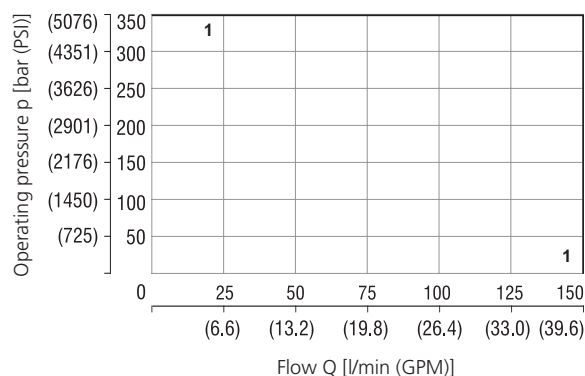
Use of the valve in potentially explosive atmospheres

| | EPS14ATEX1744 X | IECEx EPS14.0064 X |
|----|---|------------------------------------|
| AC | Ex I M2 Ex mb I Mb | Ex mb I Mb |
| | Ex II 2G Ex mb IIC T4, T5, T6 Gb | Ex mb IIC T4, T5, T6 Gb |
| | Ex II 2D Ex mb IIC T135°C, T100°C, T85°C Db | Ex mb IIC T135°C, T100°C, T85°C Db |
| DC | Ex I M2 Ex eb mb I Mb | Ex eb mb I Mb |
| | Ex II 2G Ex eb mb IIC T4, T5, T6 Gb | Ex eb mb IIC T4, T5, T6 Gb |
| | Ex II 2D Ex tb IIC T135°C, T100°C, T85°C Db | Ex tb IIC T135°C, T100°C, T85°C Db |

Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

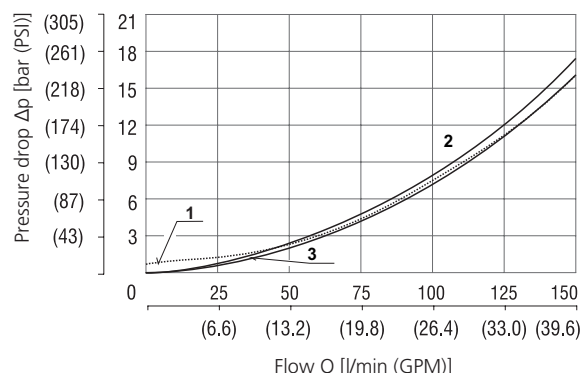
Operating limits

Ambient temperature 70 °C (158 °F), Voltage U_N -10 % (24 V DC), Power P_N 10 W



| | Model | Connection |
|---|-------|------------|
| 1 | 2L2 | 1→2, 2→1 |
| 1 | 2O2 | 1→2, 2→1 |

Pressure drop related to flow rate



| | Model | Direction | Solenoid | Model | Direction | Solenoid |
|---|-------|-----------|----------|-------|-----------|----------|
| 1 | 2L2 | 1→2 | off | | | |
| 2 | 2L2 | 2→1 | on | 2 | 2O2 | 1→2 |
| 3 | 2L2 | 1→2 | on | 3 | 2O2 | 2→1 |
| | | | | | | off |

For operating limits under conditions other than shown contact the technical support.

Technical Data

| | | | |
|--|------------------|----------------------------|-----------------------------------|
| Valve size / Cartridge cavity | | 1-1/16-12 UN / C2 (VC12-2) | |
| Max. flow | | l/min (GPM) | 150 (39.6) |
| Max. operating pressure | | bar (PSI) | 350 (5080) |
| Fluid temperature range (NBR) | | °C (°F) | -30 ... +70 (-22 ... +158) |
| Max. switching frequency | | 1/h | 7 000 |
| Weight with coil | | kg (lbs) | 1.70 (3.75) |
| Technical Data - Explosion Proof Solenoid | | | |
| Voltage type | | | AC 50 / 60 Hz DC |
| Available nominal voltages U _N | | V | 110, 230 12, 24, 48, 110 |
| Available nominal input power | | W | 10 |
| Supply voltage fluctuations | | | U _N ± 10 % |
| Duty cycle | | | S1(100 % ED) |
| Enclosure type acc. to EN 60529 | | | IP66 / IP68* |
| *Test procedure IP68: Pressure 1 m under water, test duration 24 h. The indicated IP protection level is only achieved if the cable is properly mounted. | | | |
| Weight (coil only) | | kg (lbs) | 1.3 (2.87) |
| Ambient temperature range | | °C (°F) | |
| Temperature class / Nominal power | T4-10 W | | -30 ... +70 (-22 ... +158) |
| | T5-10 W | | -30 ... +55 (-22 ... +131) |
| | T6-10 W | | -30 ... +45 (-22 ... +113) |
| | | Datasheet | Type |
| General information | | GI_0060 | Products and operating conditions |
| Operating Instructions | | 14089 | |
| Valve bodies | In-line mounted | SB_0018 | SB-C2* |
| | Sandwich mounted | SB-04(06)_0028 | on request |
| Cavity details / Form tools | | SMT_0019 | SMT-C2* |
| Spare parts | | SP_8010 | |

Ordering Code

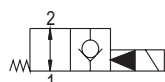
SD3EX - C2 / H / **- B**

Explosion proof 2/2 directional valve, solenoid operated, poppet type, piloted

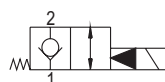
Valve cavity
1-1/16-12UN / C2 (VC12-2)

Model
High performance

Model / Symbol



202



2L2

Rated supply voltage of solenoids

DC voltage (I_N)

(connection box + cable gland)

12 V DC / 0.75 A

01200

24 V DC / 0.39 A

02400

48 V DC / 0.19 A

04800

110 V DC / 0.094 A

11000

AC voltage 50/60 Hz (I_N)

(fix installed cable)

110 V AC / 0.112 A

11050

230 V AC / 0.052 A

23050

Certifikace ventilu
No designation ATEX, IECEx, CCC*
A IECEx for Australia and New Zealand
E EAC for EAEU** States

Surface treatment
zinc-coated (ZnNi), ISO 9227 (520 h)

Seals
No designation NBR

Manual override
No designation standard for 202 only
N7 detent assembly for 202 only
N9 without manual override

Cable length
No designation (only for DC) without cable
3 (AC and DC version) 3 m
8 (AC and DC version) 8 m

Temperature class - solenoid nominal input power
A4 class T4 - 10 W
A6 class T6 (T5) - 10 W

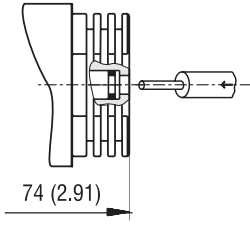
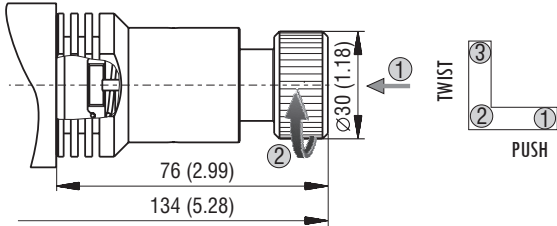
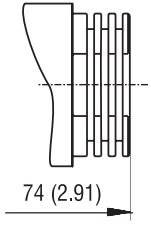
*CCC certification (China Compulsory Certification) for the People's Republic of China does not apply to the equipment group I intended for use in mines

**EAEU=Eurasian Economic Union, certificate according to TR TS 012/2011 valid for the Russian Federation, Belarus, Armenia, Kazakhstan and Kyrgyzstan.

- Besides the valve versions shown, which are the most frequently used, other special versions are available.

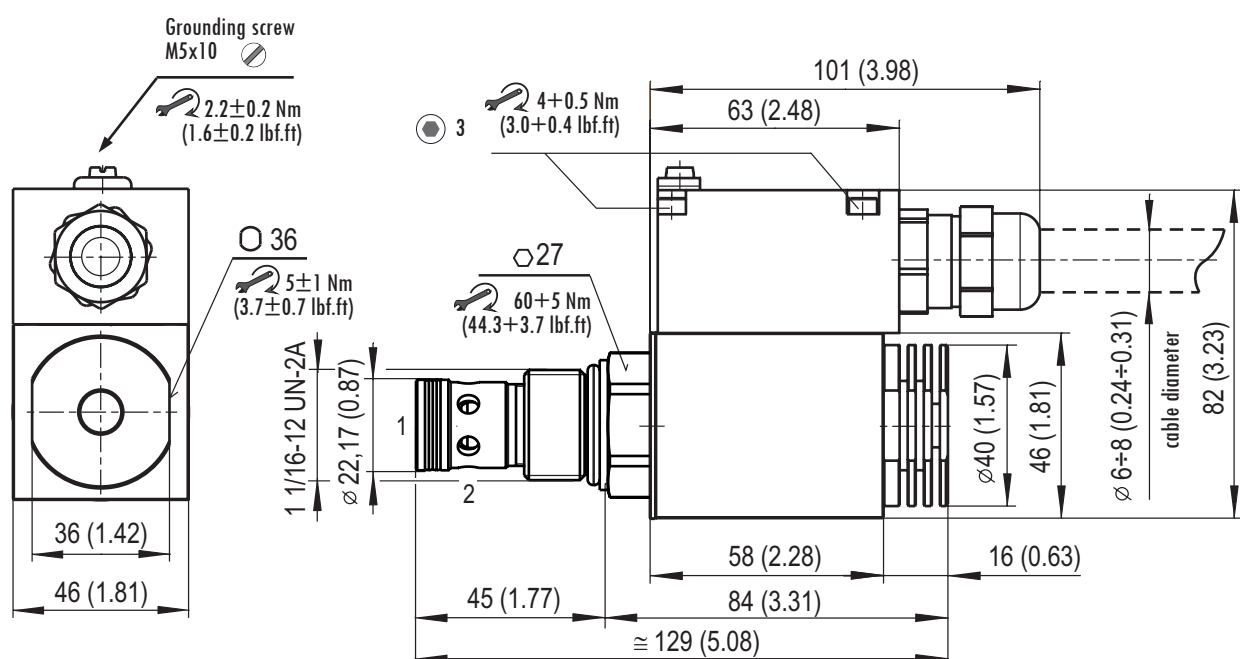
- Consult our technical department for their identification, feasibility and operating limits.

Manual Override in millimeters (inches)

| No designation - standard for 2O2 only | N7 - detent assembly for 2O2 only | N9 - without manual override |
|---|--|---|
|  |  |  |

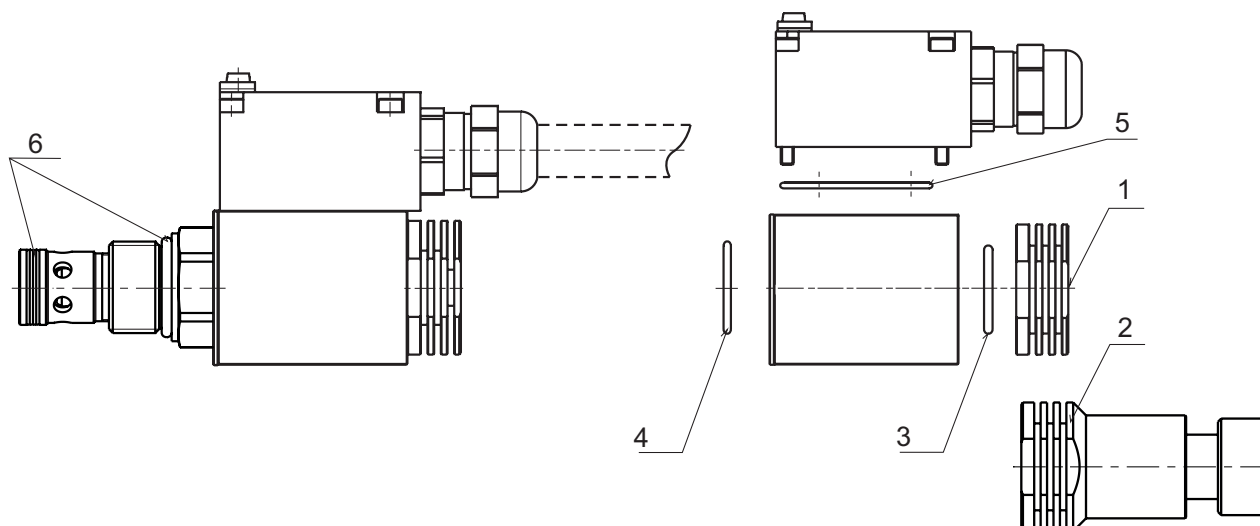
In case of solenoid malfunction or power failure, the valve poppet can be shifted by manual override under the condition that the pressure in the back line does not exceed 25 bar (363 PSI).

Dimensions in millimeters (inches)



Spare parts

| Position | | Component name | Description | Ordering number |
|----------|-----|------------------------------------|--|-----------------|
| 1 | Set | Coil nut | Nut | 45904300 |
| 3 | | Nut sealing | O-ring 21.89x2.62 VMQ 70 (silicone) | |
| 4 | | Sealing ring actuating system-coil | O-ring 22x1.5 VMQ 50 (silicone) | |
| 2 | Set | Coil nut with manual override N7 | Nut | 45904200 |
| 3 | | Nut sealing | O-ring 21.89x2.62 VMQ 70 (silicone) | |
| 4 | | Sealing ring actuating system-coil | O-ring 22x1.5 VMQ 50 (silicone) | |
| 5 | | Sealing ring of terminal box cover | O-ring 46x2 VMQ (silicone) | 34950700 |
| 6 | Set | Bush sealing | SP-SK-C2-N O-ring 23.47 x 2.95 NBR Dualeal 19.62 x 22.22 x 3.8 PU | 40730500 |



Information for customers

- › Before installing the product, please read the Product Instructions for Use, which is available in full on the manufacturer's website (www.argo-hytos.com) near the data sheet. Please also pay attention to the chapter describing the target user group, their professional qualifications and medical fitness to install, use and repair the product.
- › The product may only be used in the zones indicated, otherwise there is a risk of initiating an explosion

Area of application

| Equipment - group I – MINES | Equipment - group II (IIG) - GAS | | Equipment - group III (IID) - DUST | |
|--|----------------------------------|----------------|------------------------------------|------------------------------|
| Category M1 – NO | Zone 0 - NO | | Zone 20 - NO | |
| Category M2 (the device remains switched off) | Zone 1 | IIA (propane) | Zone 21 | IIIA (combustible particles) |
| | Zone 2 | IIB (ethylene) | Zone 22 | IIIB (non-conductive dust) |
| | | IIC (hydrogen) | | IIIC (conductive dust) |

- › For use in the temperature class, the maximum ambient temperature (see technical data table) must be observed for a given coil input (10 W), the maximum temperature of the working fluid 70 °C and the nominal voltage of the coil supply.
- › The user must ensure free heat dissipation from the valve surface. The surface must not be covered, exposed to a heat source or direct sunlight. When mounting the valves in groups, observe the minimum distances specified in the Instructions for Use.
- › A certified cable of temperature insulation class corresponding to the application temperature class must be used to the electrical connection of coil with DC supplying.
- › The rectifier and terminal block of coils with AC supplying are protected with encapsulation. Therefore, these coils are only supplied with mounted cable. No modification to the connected cable are allowed except for shortening the cable to a suitable length and fitting a connector to the free end.
- › The valve surface must be grounded using the screw on the terminal box cover of coil to prevent electrostatic discharge.
- › It is forbidden to install, dismantle or repair the product in an explosive atmosphere. Repairs to the product shall be carried out by the manufacturer, except for repairs permitted by the user under the conditions specified in the Instructions for Use.
- › Attention! The surface of the coil and the valve gets hot during operation. There is a risk of skin burns if touched.