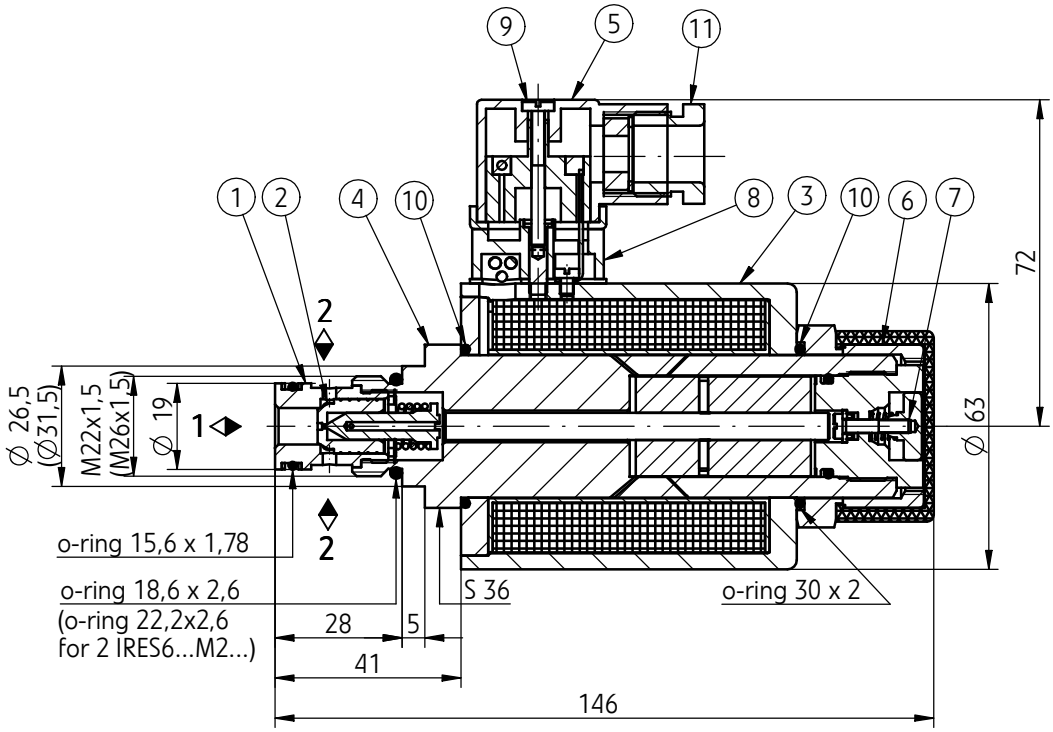
| PONAR wadowice | Two-way explosion proof directional control valve type 2IRES6 | | | WK 499 425 |
|---|---|---|---|---|
| | NS6 | up to 31,5 MPa | up to 30dm³/min | 11.2012 |

DATA SHEET - SERVICE MANUAL

## APPLICATION

The two-way directional control valve type **2IRES6**... is designed to control the direction of the flow of liquid (oil) in a hydraulic system. The valve is designed for use in potentially explosive atmospheres in underground mines (group **I**) and in equipment working near inflammable substances in the form of gas, vapor, mist (group **II**). The valve has been certified for intrinsic safety:
⟨Ex⟩ **I M1 Ex ia I Ma**; ⟨Ex⟩ **II 2G Ex ia II B T4 Gb**, it can work with the intrinsically safe circuit "**ia**" or "**ib**" with maximum parameters: **Ui** = **15 V**; **Ii = 1.6 A**; **Ci** = **0**; **Li** = **0**. For the group **II** of devices power supply should have the power limit **Pi**, according to the technical data table on page 2.

## OVERALL DIMENSIONS




## DESCRIPTION OF OPERATION

To open or close oil flow is done by changing position of cone (2) in the sleeve (1). The close of the port is secured by putting voltage on coil (3). The coil can be placed in each angle position to the solenoid sleeve. The flow in outlet position from port 1 to port 2 is possible (version A3). It can be made by using he ball stopping the hole in the cone (2). An optional emergency button (7) permits movement of the spool without solenoid. The valve is equipped with explosion proof solenoid type EMSGI – 45. Solenoid is assembled with solenoid sleeve (4) and emergency button (7). There is a coil (3) on the sleeve (4) Outside of coil mounted is socket (8) Inside the socket are diodes as well as safety device preventing excessive current increase. Electrical connection is realize by using plug (5). Power lead must be sealed and immobilized in both types using gland (11). Sealing rings (10) protect the coil against external impacts and prevent from tern of coil after tightening up the nut (6)

## TECHNICAL DATA

| | |
|---|---|
| Hydraulic fluid | mineral oil |
| **Required filtration** | **up to 16 µm** |
| Recommended Filtration | up to 10 µm |
| Nominal fluid viscosity | 37 mm $^2$/s at temperature 55 °C |
| Viscosity range | 2,8 up to 328 mm$^2$/s |
| Optimum working temperature | 40 up to 55°C |
| Relative humidity of air | up to 95% |
| **Maximum pressure** | **31,5 MPa** |
| **Maximum flow** | **30 dm$^3$/min** |
| Weight | 1, 5 kg |
| **Supply voltage Un** | **12 V** |
| Supply current In | 110 mA |
| **Scope of insulation** | **IP 64** |

ACCORDING TO DIRECTIVE 94/9/WE

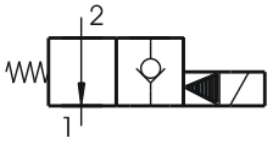
| | | |
|---|---|---|
| **Quality certificate** | **CE 1026** | **No. FTZU 05 ATEX Q 013** |
| **Inspection certificate** | **FTZU 05 ATEX 0068** | |
| **Type of protect ion** | **Ex I M 1 Ex ia I Ma** | **Ex II 2G Ex ia IIB T4 Gb** |
| Ambient temperature $T_a$ | - 20 up to 60 °C | - 20 up to 60 °C Pi ≤ 1,2 W<br>- 20 up to 40 °C Pi ≤ 1,3 W |

## ASSEMBLY AND OPERATION REQUIREMENTS

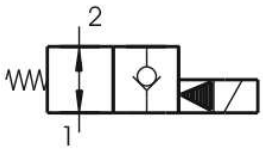
1. Electric connection of the valve must be made according to electric scheme.
2. Conductors of valve must be meet requirements applied in the mining machinery.
3. Only skilled workers can direct connect valve to an electrical system.
4. The plug must be supported by retains screw.
5. During the period of operation must be kept the fluid viscosity and filtration according to requirements defined in Service Manual
6. In order to ensure the failure free and safe operation must be check:
   - condition of the electrical connection,
   - the verity proper working of the valve,
   - cleanness of the hydraulic fluid.
7. Any valve repair in the mine condition is forbidden. A damaged valve must be supplied to the producer in order to repair. The address of service is shown on the last page of this Data sheet – Service Manual
8. A person that operates the valve has to acquaint with Service Manual.

## SCHEMES

graphical symbol

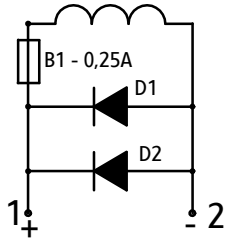



2IRES6 A1...

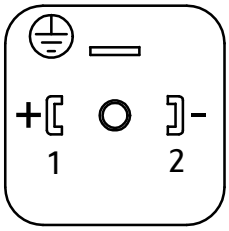



2IRES6 A3...

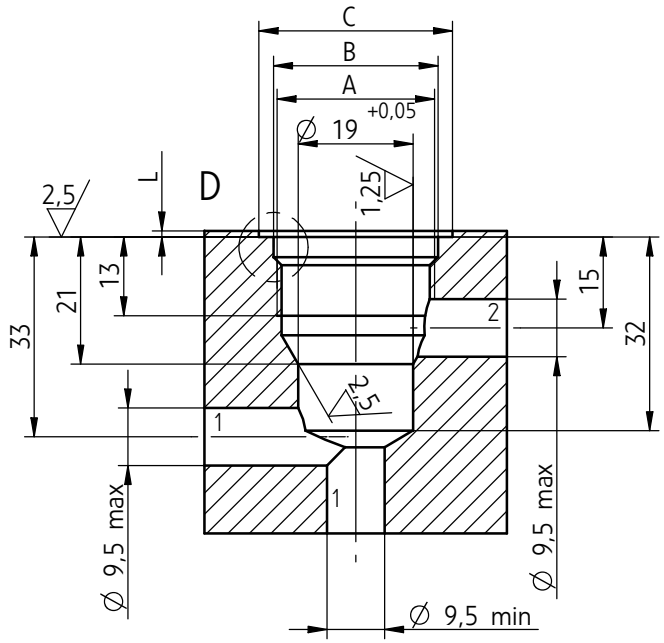
electrical scheme

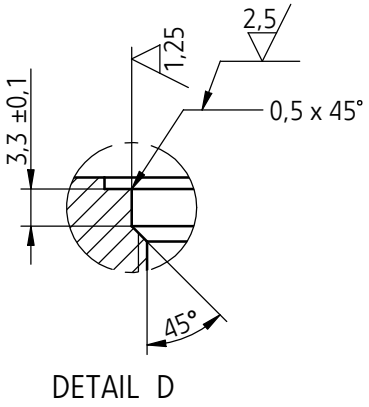



view of electrical connection



## DIMENSION OF CAVITY




DETAIL D

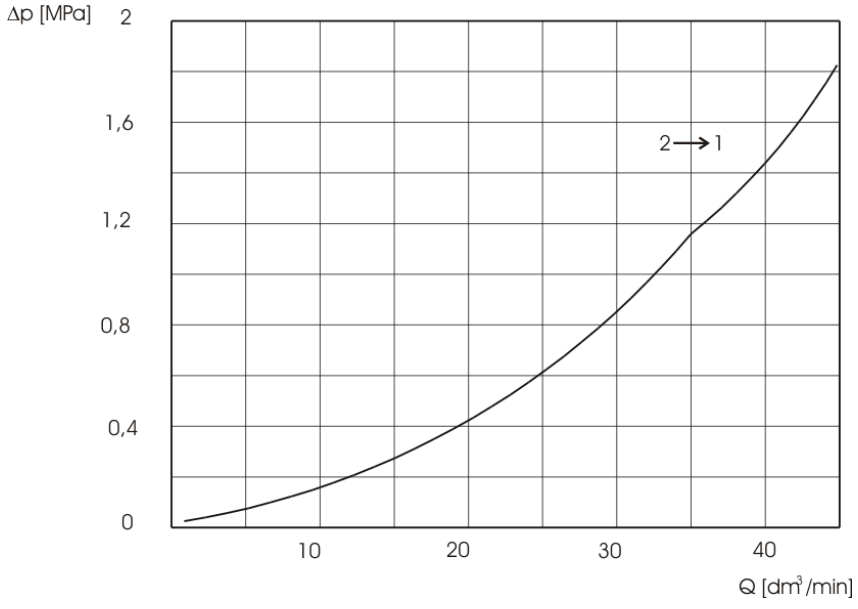
⌀ 0,025 - Applied to all main hole diameters and phase point
Tightening torque of valve 30 Nm.

| Port | A | B | C | L |
|---|---|---|---|---|
| M1 | M22 x 1,5 | ϕ 23 +0,15 | ϕ 28 | 1 |
| M2 | M26 x 1,5 | ϕ 27,4 +0,15 | ϕ 32 | 5 |

## PERFORMANCE CURVES

oil viscosity ν = 41 mm²/s at temperature 50°C

### Flow curves



## HOW TO ORDER

Order coded in the way showed below should be forwarded to the manufacturer.

| 2IRES6 | | – 02 | / 2 | | G12 | Z4 | | ★ |
|---|---|---|---|---|---|---|---|---|

**Hydraulic scheme**
Scheme A1 = A1
Scheme A3 = A3

**Series number**
(02-09) – connection and installation dimension unchanged = 02

**Number of position**
2 position = 2

**Mounting method**
Port M22 x 1,5 = M1
Port M26 x 1,5 = M2

**Control voltage solenoids**
12V DC = 12

**Electrical connection**
Plug in connector = Z4

**Sealing**
NBR (for fluids on mineral oil base) = no code
FPM (for fluids on phosphate ester base) = V

Additional requirements in clear text
(to be advanced with the manufacturer)

Coding example:

2IRES6 A1- 02/2 M1 G12 Z4

PONAR Wadowice S.A.
ul. Wojska Polskiego 29
34-100 Wadowice
tel. +48 33 488 29 00
fax.+48 33 488 21 03
www.ponar-wadowice.pl