

DATA SHEET - OPERATION MANUAL

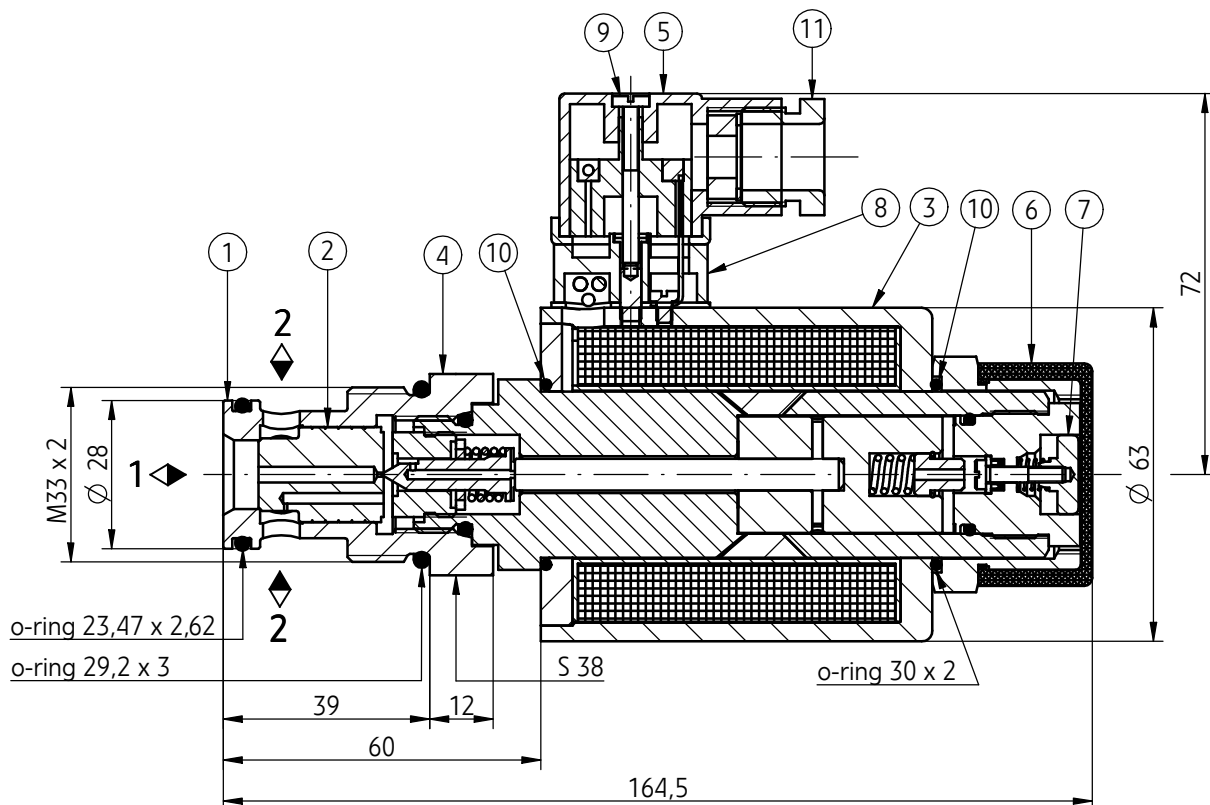
APPLICATION

The two-way directional control valve type 2IRES10... 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:

⊕ I M1 Ex ia I Ma; ⊕ II 2G Ex ia II B T4 Gb, it can work with the intrinsically safe circuit "ia" or "ib" with maximum parameters: $U_i = 15 V$; $I_i = 1.6 A$; $C_i = 0$; $L_i = 0$. For the group II of devices power supply should have the power limit P_i , according to the technical data table on page 2.



OVERALL DIMENSIONS




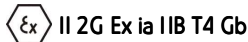
DESCRIPTION OF OPERATION

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. It can be made by using the ball stopping the hole in the cone (2). An manual override (7) permits movement of the spool without solenoid. The valve is equipped with explosion proof solenoid type EMSGI - 63. Solenoid is assembled with solenoid sleeve (4) and manual override (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 realized 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 turn 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 380 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	60 dm³/min
Weight	2 kg
Supply voltage Un	12 V
Supply current In	110 mA
Degree of protection	IP 64

COMPLIANCE WITH THE DIRECTIVE 94/9/WE

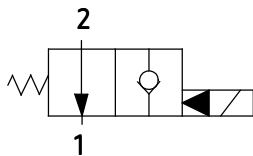
Quality assurance certificate	CE 1026	No. FTZU 05 ATEX Q 013
Certificate of examination type	FTZU 05 ATEX 0068	
Intrinsic safety feature	 I M 1 Ex ia I Ma	 II 2G Ex ia IIB T4 Gb
Ambient temperature T _a	- 20 up to 60 °C	- 20 up to 60 °C Pi ≤ 1,2 W - 20 up to 40 °C Pi ≤ 1,3 W

ASSEMBLY AND OPERATION REQUIREMENTS

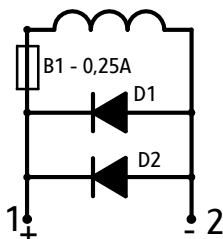
1. Electric connection of the valve must be made according to electric scheme.
2. Conductors of valve must be meet requirements applied in the mining machinery.
3. Only skilled workers can direct connect valve to an electrical system.
4. The plug must be supported by retains screw.
5. During the period of operation must be kept the fluid viscosity and filtration according to requirements defined in Operation 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 - Operation Manual
8. A person that operates the valve has to acquaint with Operation Manual.

SCHEMES

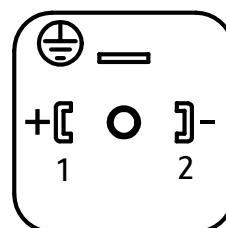
graphical symbol of the valve type 2IRES10...



electrical scheme



view of electrical connection

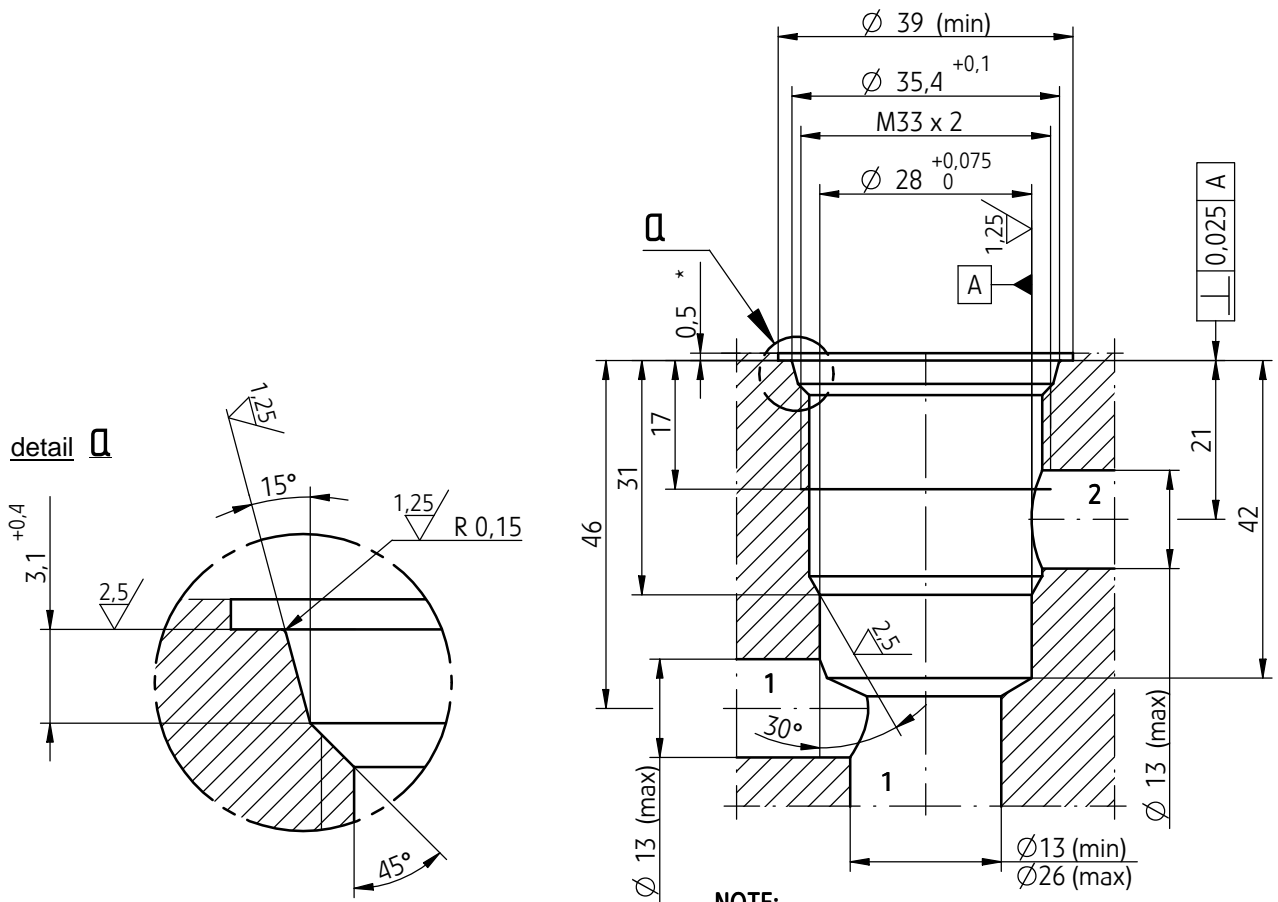


OVERALL AND CONNECTION DIMENSIONS

cavity M-10-2 (M33 x 2; 2-way)

tightening torque **Md = 50 - 55 Nm**

⊙ $\varnothing 0,025$ - refers to all diameters of the main hole and chamfers



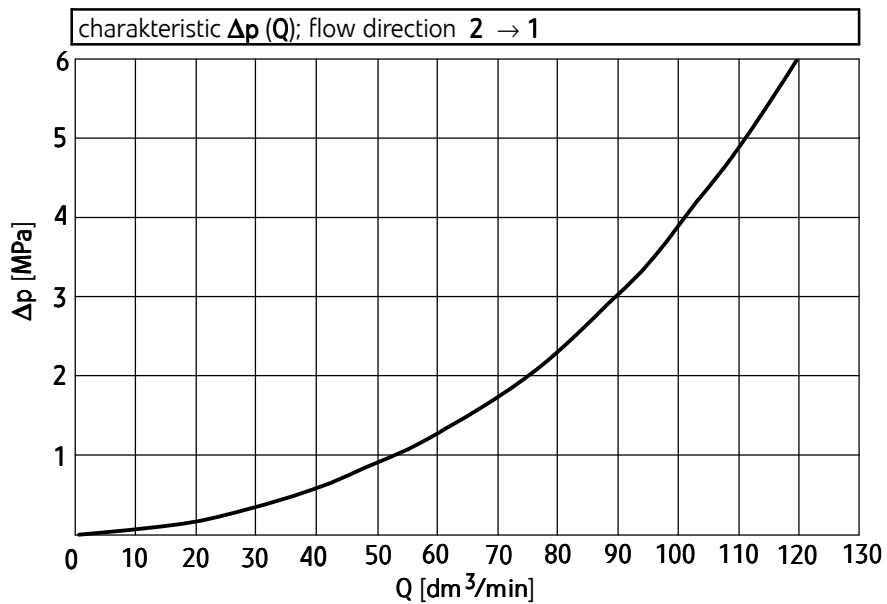
NOTE:

(*) - max depth hole 4,5

CHARACTERISTICS

for oil viscosity $\nu = 41 \text{ mm}^2/\text{s}$ at temperature $t = 50 \text{ }^\circ\text{C}$

Flow resistance characteristic



HOW TO ORDER

2IRES	10	A1	- 02	/ 2	M1	G12	Z4		*
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Nominal size (NS) NS10	= 10								
Spool type symbol A1	= A1								
Series number (02 - 09) - connection and installation dimensions unchanged series 02	= 0X = 02								
Number of position 2-position	= 2								
Mounting method cavity M33 x 2	= M1								
Control voltage for solenoids 12V DC	= G12								
Electrical connection plug-in-connector ISO 4400 type without LED	= Z4								
Sealing NBR (for fluids on mineral oil base) FKM (for fluids on phosphate ester base)	= no designation = V								
Further requirements in clear text (to be agreed with the manufacturer)									

NOTES:

Intrinsically safe valve should be ordered according to the above coding.

The symbols in bold are preferred versions in short delivery time.

Coding example: 2IRES10 A1 - 02/M1 G12 Z4

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