

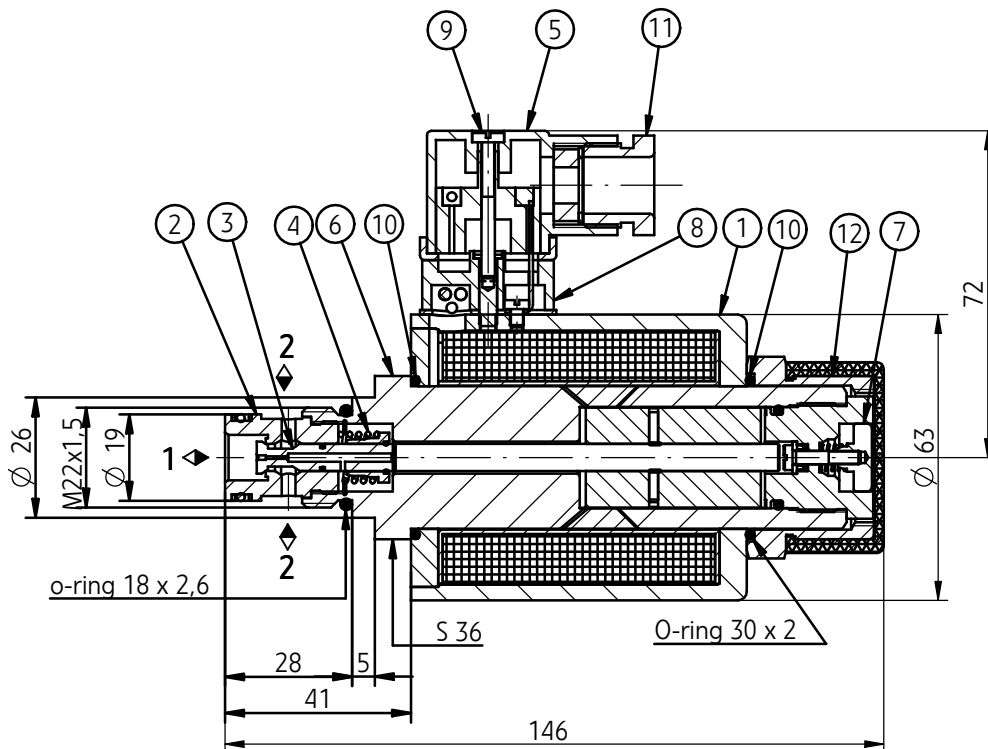
DATA SHEET - SERVICE MANUAL

APPLICATION

The two-way directional control valve type 2IRED6... 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

The directional valve is switched by changing position of the spool (3) with moving along its axis separates or connects port in the sleeve (2). Opening of flow is secured by putting voltage on coil (1) The return of the spool to dead position are secured by spring (4) and switching off the current. The coil can be placed in each angle position to the sleeve (6). 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 sleeve (6) and emergency button (7). There is a coil (1) on the sleeve (6). 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). Use bolt (9) to support the plug. 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 turning coil after tightening up the nut (12).

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	20 dm³/min
Weight	1, 6 kg
Supply voltage Un	12 V
Supply current In	110 mA
Scope of insulation	IP 64

ACCORDING TO DIRECTIVE 94/9/WE

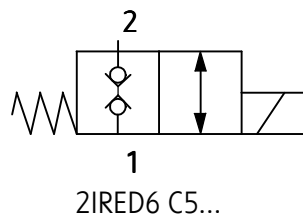
Quality certificate	CE 1026	No. FTZU 05 ATEX Q 013
Inspection certificate	FTZU 05 ATEX 0068	
Type of protection	⊕ I M 1 Ex ia I Ma	⊕ II 2G Ex ia IIB T4 Gb
Ambient temperature T _a	- 20 up to 60 °C	- 20 up to 60 °C Pi ≤ 1,2 W - 20 up to 40 °C Pi ≤ 1,3 W

ASSEMBLY AND OPERATION REQUIREMENTS

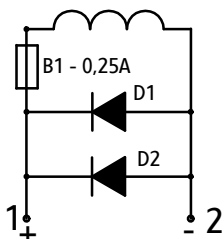
1. Electric connection of the valve must be made according to electric scheme.
2. Conductors of valve must be meet requirements applied in the mining machinery.
3. Only skilled workers can direct connect valve to an electrical system.
4. The plug must be supported by retains screw.
5. During the period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

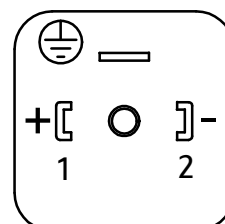
graphical symbol



electrical scheme



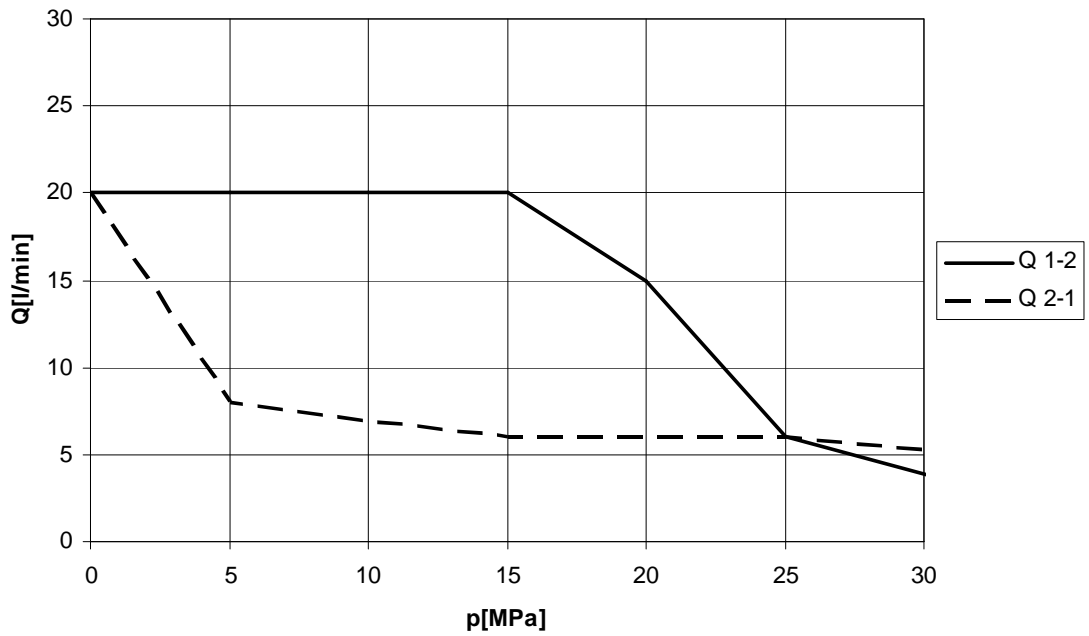
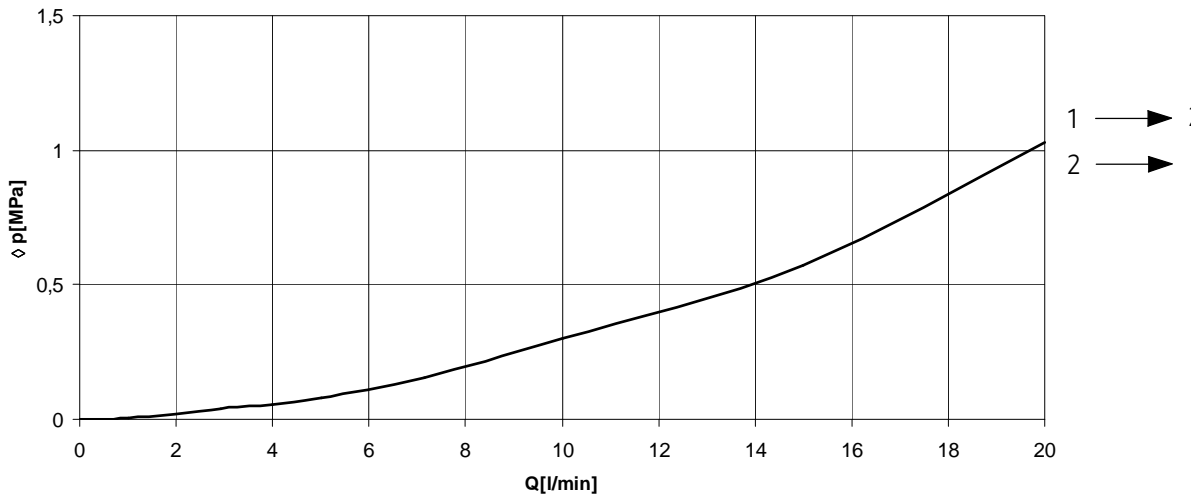
view of electrical connection



PERFORMANCE CURVES

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

Flow curves



HOW TO ORDER

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

2IRED6	C5	- 02 / 2	M1	G12	Z4		★
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Hydraulic scheme

Scheme C5 = C5

Series number

(02-09) - connection and installation dimension unchanged = 02

Number of position

2 position = 2

Mounting method

Port M22 x 1,5 = M1

Control voltage solenoids

12V DC = G12

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:

2IRED6 C5 - 02/2 M1 G12 Z4

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