

# Fluidea

*...we know how!*



## PRESSURE REDUCING VALVES ERP

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### Operating principle

The ERP proportional electro-hydraulic pressure reducing valves are used to remotely control servo-controlled power users, which require variable, gradual and precise regulation.

They are typically used for remote control, via cable or wireless, of directional control valves, proportional valves, devices for adjusting the displacement of variable hydraulic pumps and motors, clutches and brakes with variable adjustment.

Therefore, these are applications in which the efforts required for direct manual adjustment of the users are relatively high or which have a dislocation that makes the use of mechanical kinematic mechanisms inconvenient.

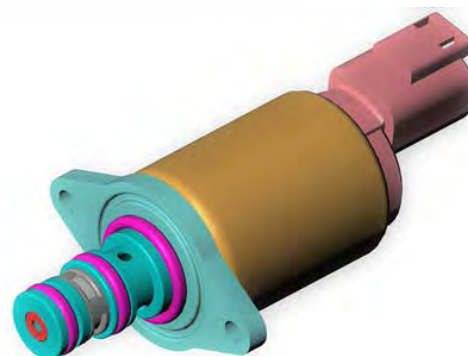
The valves are hydraulically powered at low flow (5-10 l / min.) and at a primary pressure normally with maximum values between 25 ÷ 50 bar, therefore they require a minimum absorption. The source of the pilot flow is a dedicated pump or a dedicated power supply unit (see HSU catalog) inserted as a derivation from the main hydraulic power circuit, which includes a reducing valve, a pressure relief valve and where necessary also a pneumatic oil accumulator. The reduced pressure is independent of the inlet pressure, provided that a minimum threshold value is ensured to compensate for pressure drops. A small flow of

drainage oil, compliant with the project data, is discharged directly into the tank and must not be subject to back pressure exceeding the maximum allowed values. An overload compensation mechanism is triggered when the secondary pressure tends to exceed the value set by the

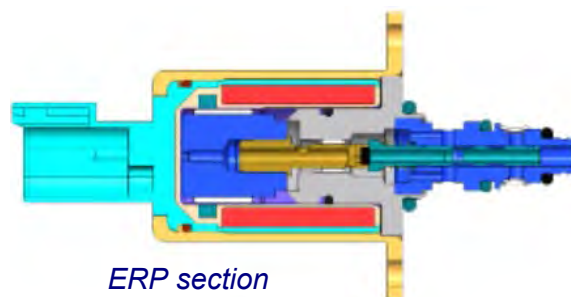
control, so that in a certain sense the reducing valve also acts as a secondary pressure limiting valve.

The supply pressure is reduced and adjusted to the desired output value, which varies linearly and proportionally to the variation of the electrical control signal of the ERP valve. Signal that normally consists of a pulsating PWM current generated by an electronic regulator (see ELR catalog)

controlled by the analog voltage signal generated from the joystick operated by the operator. The regulator can be set via PC or with interface kit and dedicated software.



*Hydraulic supply unit*



*ERP section*



*Proportional dual axis mini-joystick*

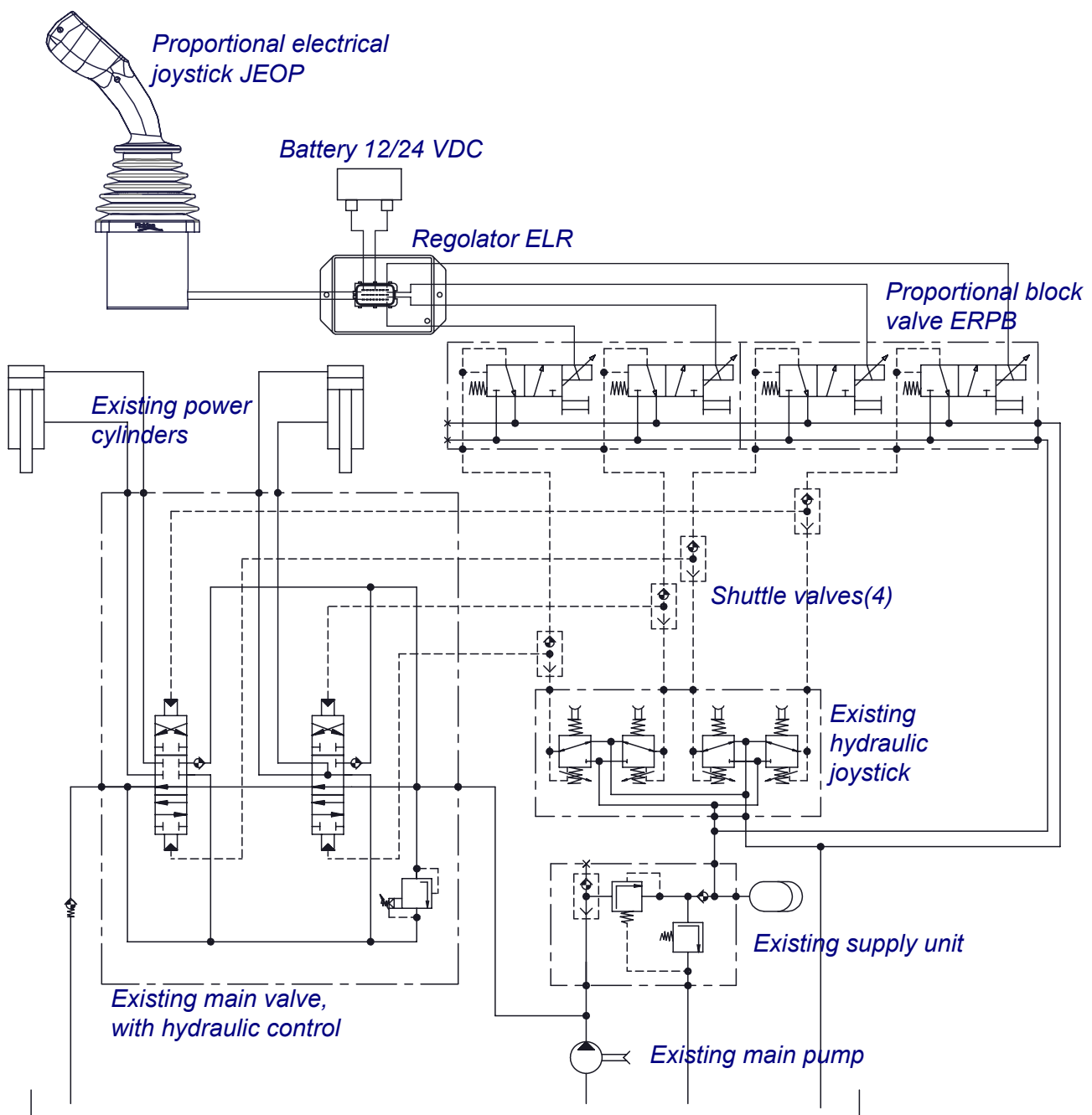


*PWM regulator*

### Applications

The double effect manifold modular version of electro-hydraulic pressure reducer valves **ERPB**, in conjunction with our proportional joystick series **JEOP**, **JEP2** and PWM electronic regulators **ELR**, can be used to implement existing hydraulic proportional systems with an electric remote control system via cable, especially when machines are operating in high safety conditions. It's very useful when the ground morphology or the ambient condition endangers the safety of the operator or people working in the site. They are available also in pouches with shoulder strap or pushbutton panels for housing of joystick and signalling and safety devices.

The following diagram can be applied for excavator, wheeled loaders, truck cranes and onboard cranes. It shows an electrical proportional remote control, via cable, that implements the existing hydraulic system as is required in those cases where there is a need for both hydraulic in cab and electric remote systems. The morphology of the ground or safety reasons requires it.





### Technical data:



In compliance with European  
Directive 2002/95/CE

- Maximum inlet pressure: 50 bar
- Maximum tank counterpressure: 5 bar
- Metering curves (ports A and B): 0÷20, 0÷25, 0÷32 bar
- Maximum inlet pressure: 4 l/min
- Viscosity range: 2,8 - 380 cSt
- Contamination class: 20/18/15 ISO 4406
- Ambient temperature range: From -35°C to +80°C
- Mounting position: Any
- Hydraulic fluids: Hydraulic mineral oils DIN 51524
- Supply voltage: 12 or 24 V DC
- Nominal supply current: 1600 mA @ 12 VDC, 800 mA @ 24 VDC
- Ramps: Adjustable to < 100 msec @ 50°C
- Hysteresis: < 3% of the maximum outlet pressure
- Resolution: < 0,5% (with "dither")
- Operation: Continuous 100%
- Seals: BUNA-N standard, Viton® optional
- Recommended "dither" frequency: 100 Hz
- Connectors: Deutsch or AMP Junior Timer
- Emergency device: Manual control integrated



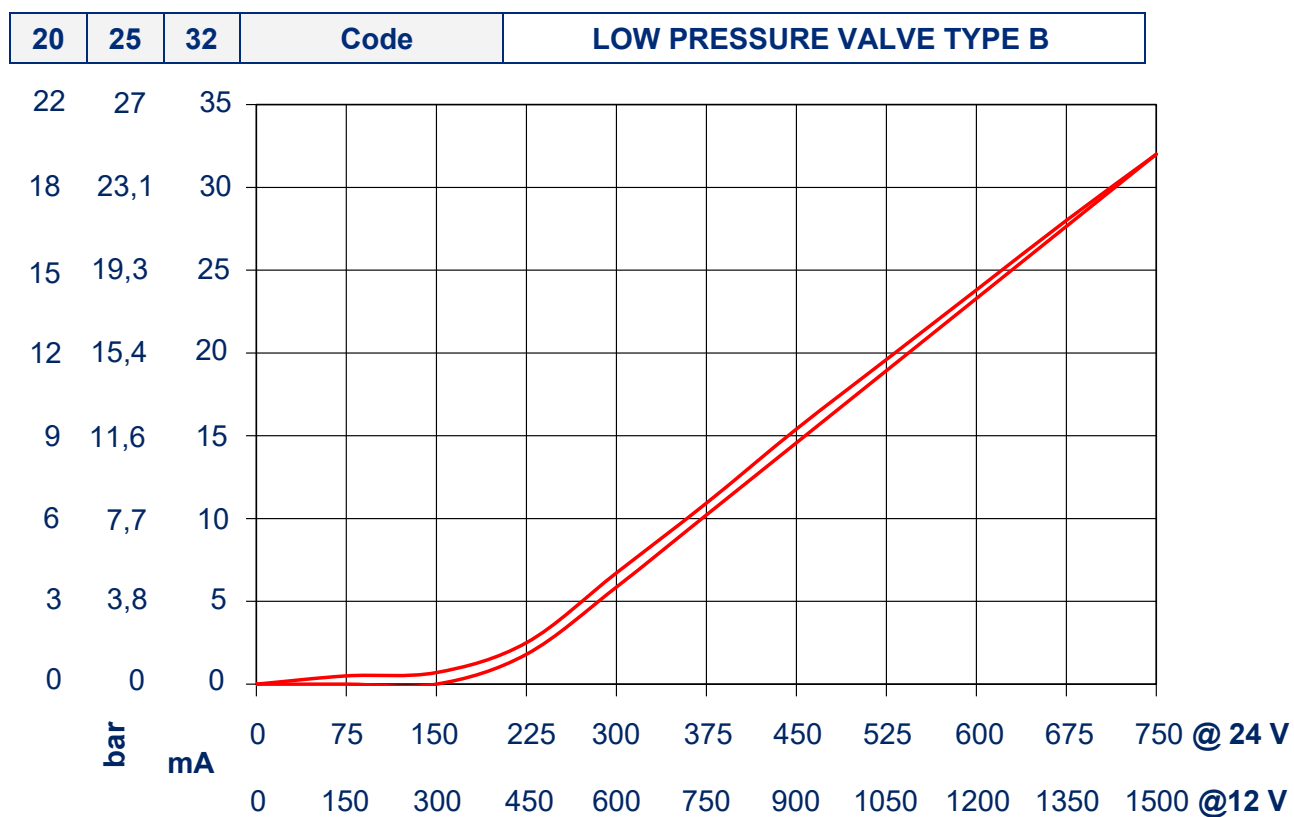
*ERP Valve, can be supplied on request the cartridge version, with JPT connector and emergency manual regulator.*



*Push button panel with 4 proportional controls and 8 channels with integrated PWM control unit and wire connection*

The data and the technical features in this catalogue are not binding. The manufacturer reserves the right to carry out modifications, by its unquestionable judgement and without prior notice, in order to improve its products. The manufacturer is not responsible for damage to people or properties caused by an improper use of the product.

### Metering curve



*Control box with customized wiring*

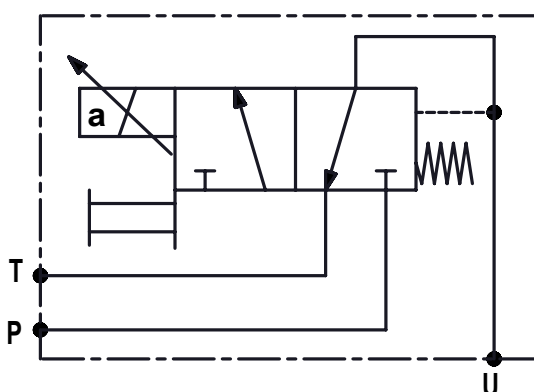


### VALVE BLOCK TYPE S1A - ONE SOLENOID

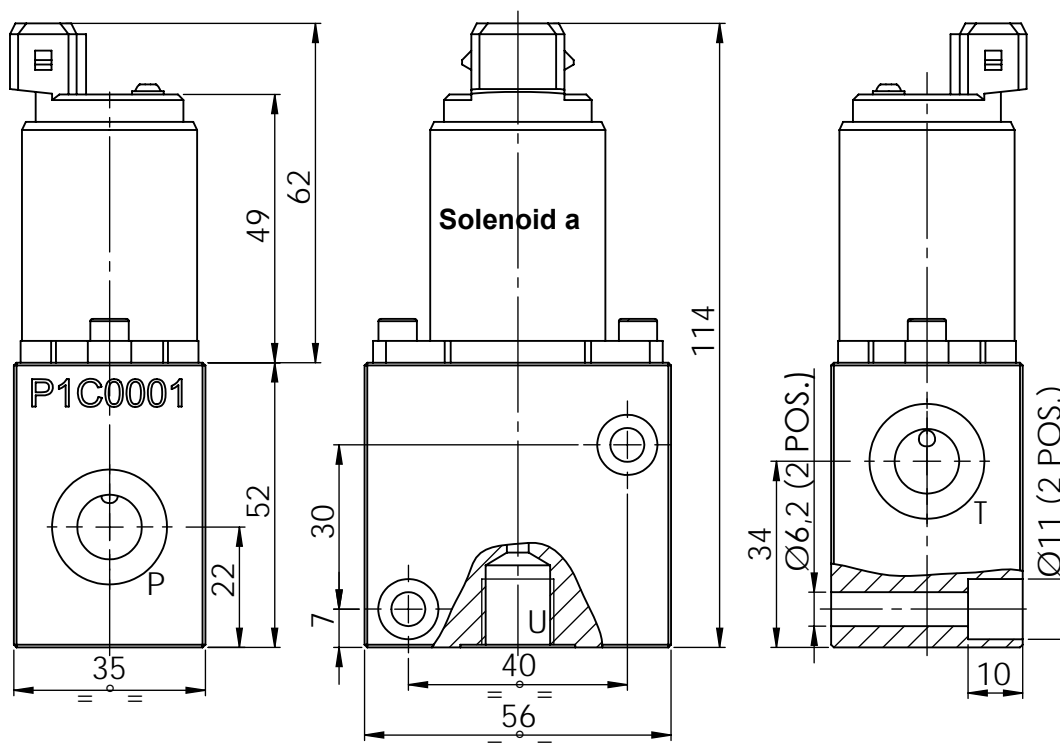
#### IN LINE MOUNTING - 1/4"BSP PORTS



#### HYDRAULIC DIAGRAM



#### OVERALL DIMENSIONS

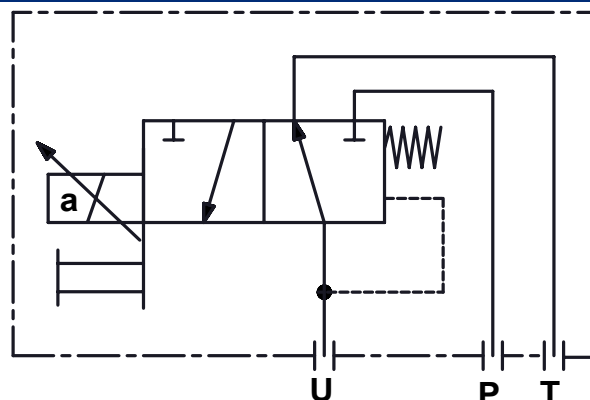


### VALVE BLOCK TYPE S1C - ONE SOLENOID

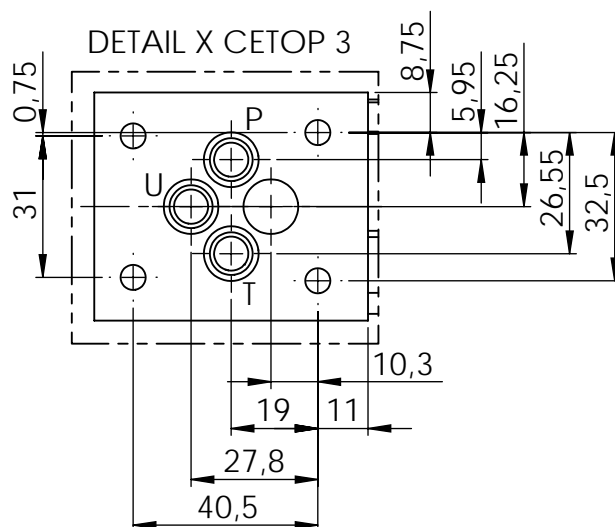
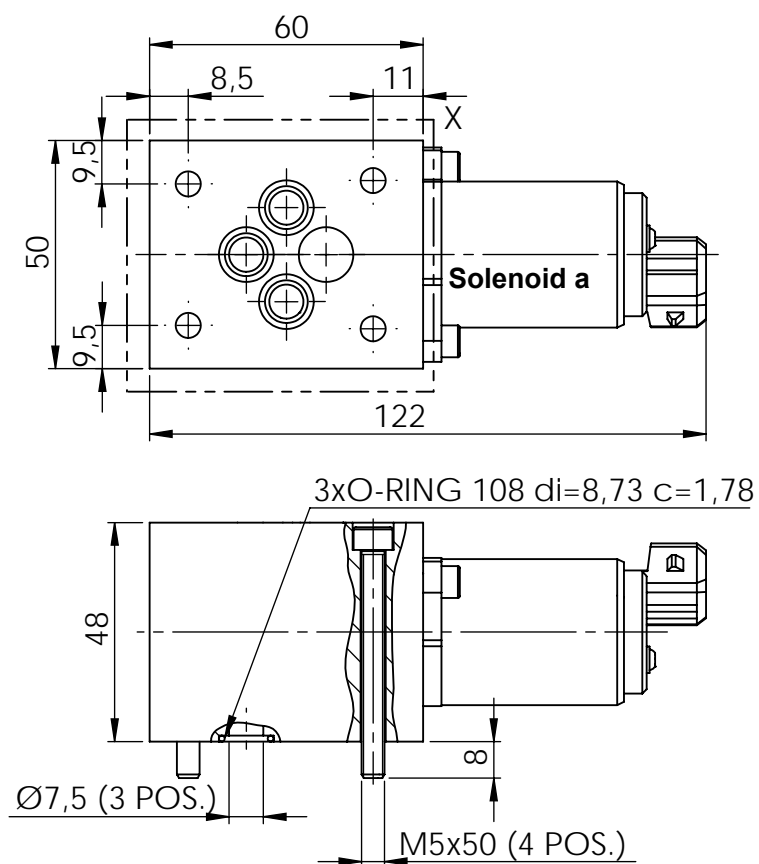
#### CETOP 3 FLANGE MOUNTING



#### HYDRAULIC DIAGRAM



#### OVERALL DIMENSIONS



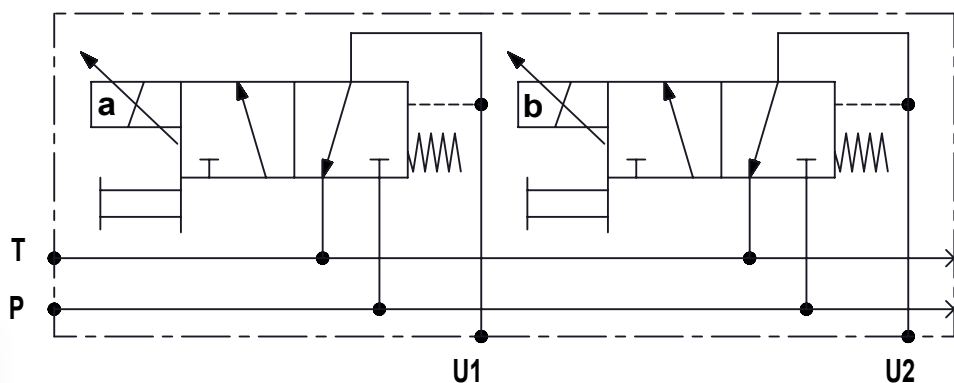


### VALVE BLOCK TYPE D1A - TWO SOLENOIDS

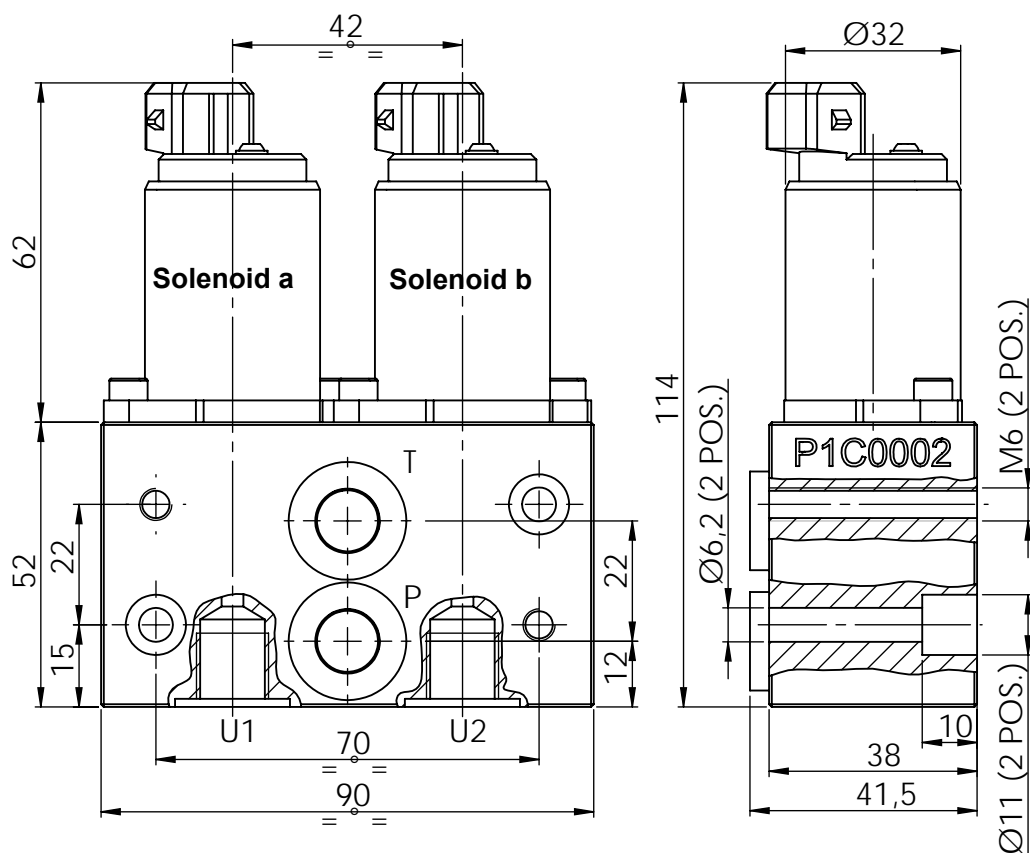
#### IN-LINE MOUNTING - 1/4" BSP PORTS



#### HYDRAULIC DIAGRAM



#### OVERALL DIMENSIONS

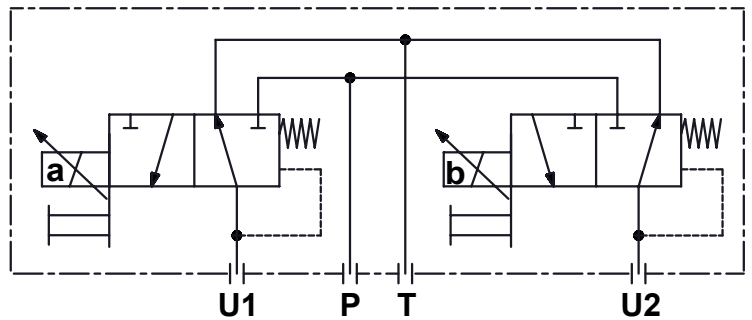


## VALVE BLOCK TYPE D1A - TWO SOLENOIDS

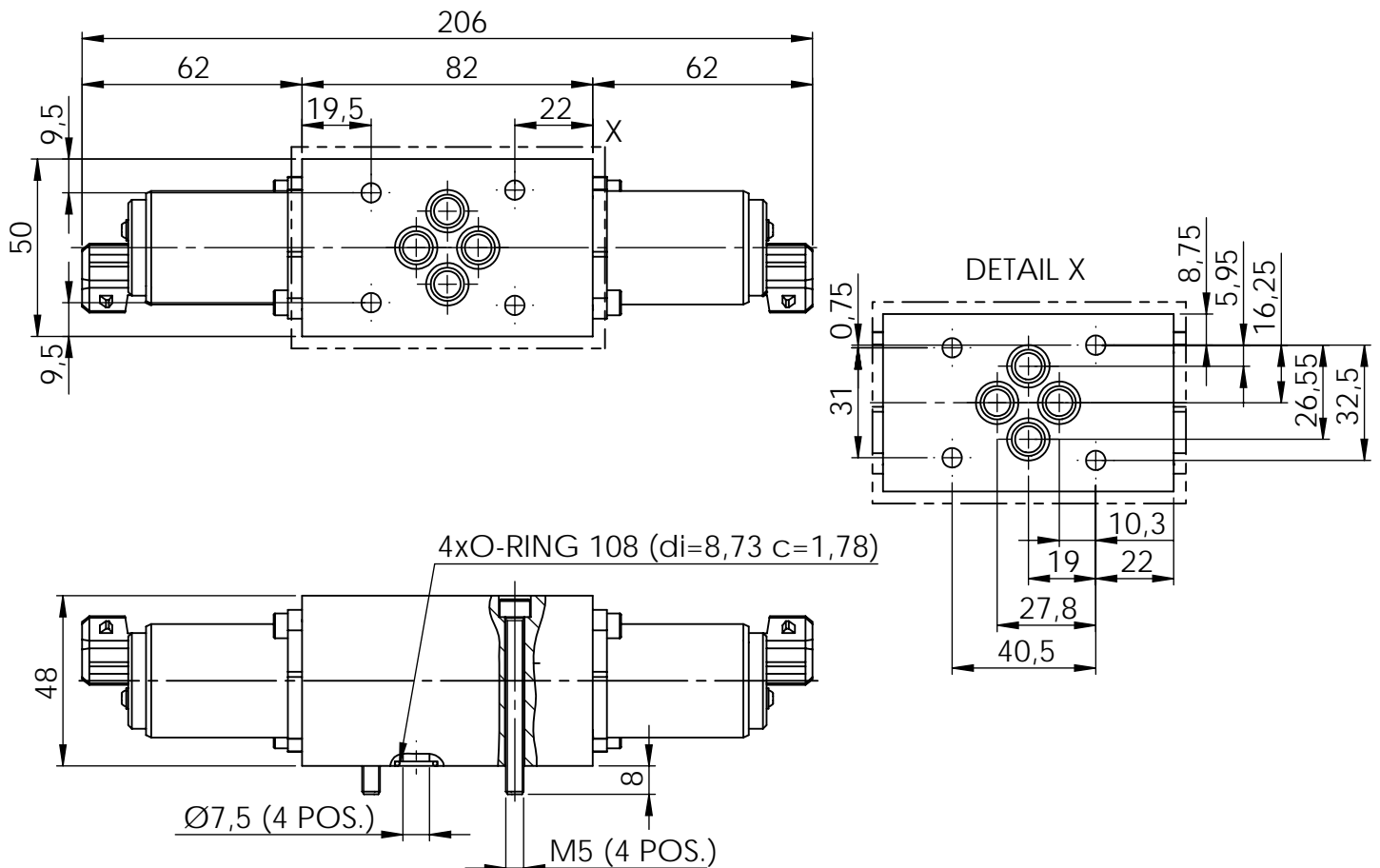
## CETOP 3 FLANGE MOUNTING



## HYDRAULIC DIAGRAM



## OVERALL DIMENSIONS

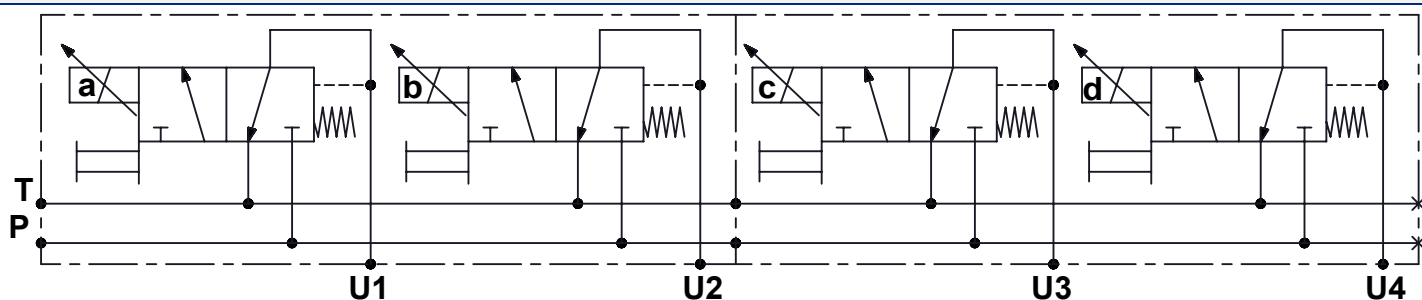


### MODULAR VALVES TYPE ERPBD\*A (UP TO 20 SECTIONS)

#### IN-LINE MOUNTING - 1/4"BSP PORTS

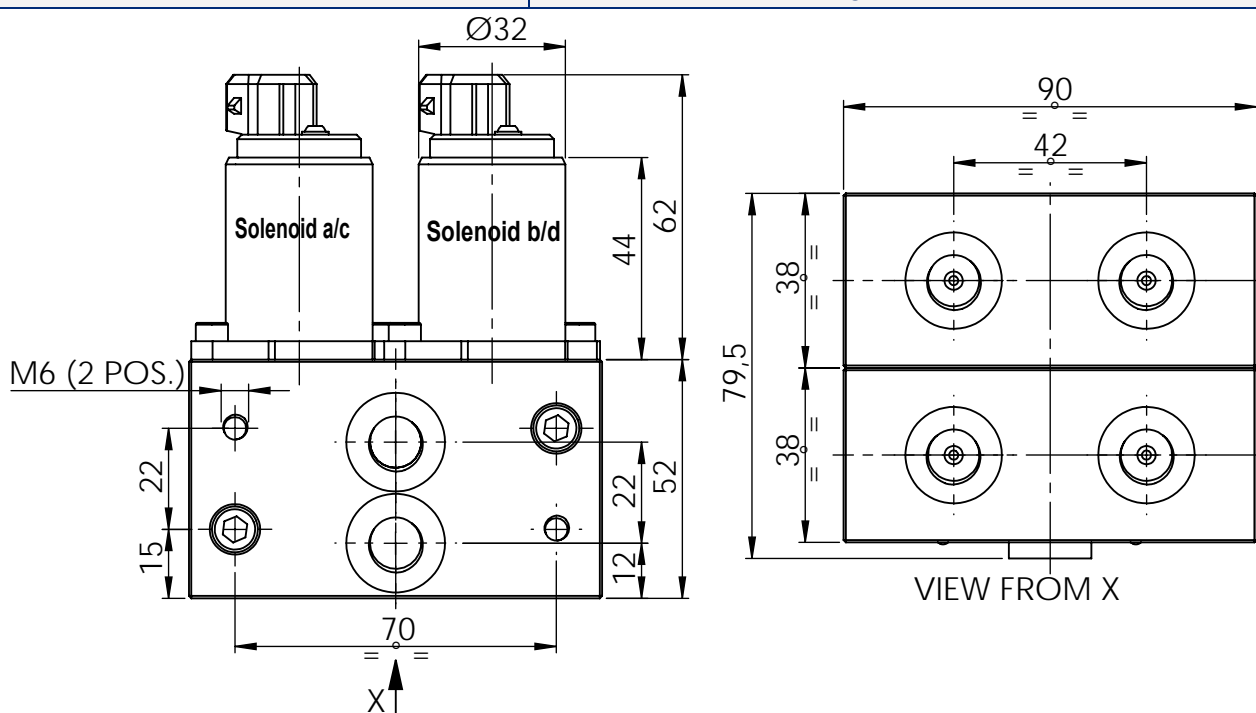


#### HYDRAULIC DIAGRAM



#### OVERALL DIMENSIONS

For the assemblies from 3 to 20 sections, add to the dimension 79,5 mm the fixed pitch 38 mm as many times as the number of the sections exceeding the two ones shown below.



## Ordering key

ERP	B	D	A	0	3	2	5	2	4	J
										<b>2 pin connector:</b> - J = Junior Power Timer (standard) - D = Deutsch
										<b>Input voltage:</b> - 12 = 12 Volt DC - 24 = 24 Volt DC
										<b>Metering curve (Port side B)</b> Omit for S1 configuration - 020 = 0-20 bar - 025 = 0-25 bar - 032 = 0-32 bar
										<b>Metering curve (Port side A)</b> - 020 = 0-20 bar - 025 = 0-25 bar - 032 = 0-32 bar
										<b>Mounting type</b> - A = In-line with 1/4" BSP ports - C = CETOP 3 flange
										<b>Valve configuration</b> - S1 = One solenoid valve - D* = Two solenoid valve * Insert the number of sections, from 1 to 20
										<b>Basic model:</b> - ERPB = Proportional electric reducer valve

For joystick JEP, JEP2, electronic regulators ELR , PC interface kit and calibration software, accessories and customized wiring, please refer to the corresponding catalogues or contact our sales department.

## THE COMPREHENSIVE RANGE OF MANUFACTURED AND MARKETING COMPONENTS INCLUDES:

- Hydraulic gear and axial piston pumps & motors
- Directional control valves & selector valves
- Proportional EH pressure reducing valves & manifold blocks
- Hydraulic, pneumatic and electric on-off & proportional joysticks
- Control electronics
- Radio controls, push buttons stations, dashboards and armrests
- Multifunction ergonomic, cylindrical & palm grips
- Hydraulic filters & contamination control system
- Heat exchangers and cooling system
- Fluid monitoring & diagnostic instrument
- Bell housings, driving flanges & elastic coupling



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