



# MZE

## PILOT OPERATED PRESSURE REDUCING VALVE WITH ELECTRIC PROPORTIONAL CONTROL SERIES 56

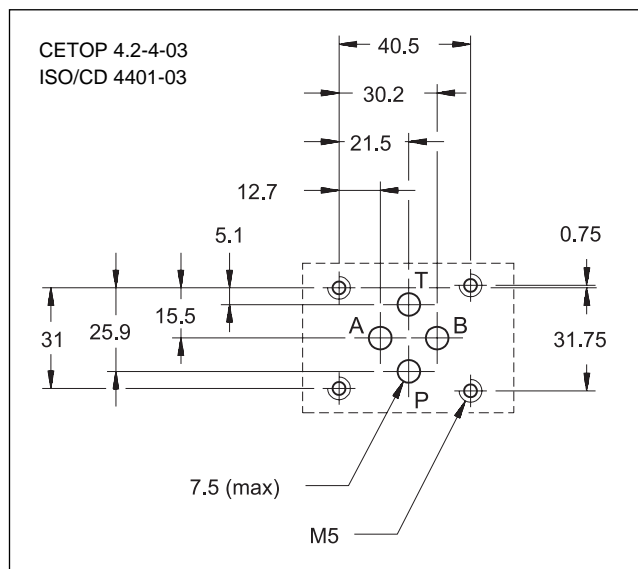
**MODULAR VERSION**

**CETOP 03**

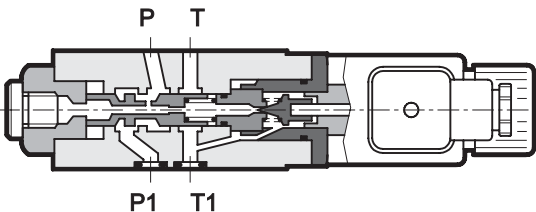
**p max 320 bar**

**Q max (see specification table)**

### MOUNTING INTERFACE



### OPERATING PRINCIPLE

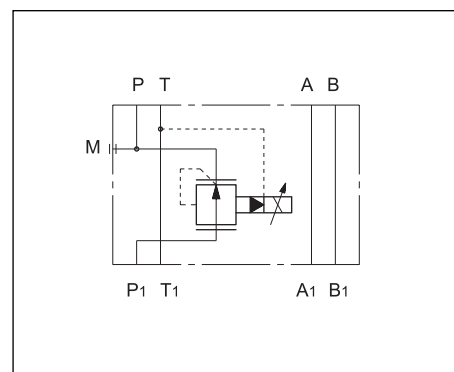


- MZE valves are pilot operated pressure reducing valves with electric proportional control designed as modular versions with mounting interface in compliance with CETOP and ISO standards.
- The valves are used to reduce pressure in the secondary circuit branches thus ensuring stability of controlled pressure in the event of variations of the flow rate through the valve.
- Pressure can be modulated continuously in proportion to the current supplied to the solenoid.
- The valve can be controlled directly by a current control supply unit or by means of the relative electronic control units to exploit valve performance to the full (see par. 8).
- The valve is available in four different pressure reduction ranges of up to 210 bar.
- The valve is available only with internal drain to the T line inside the valve.

**SPECIFICATIONS** (obtained with mineral oil with viscosity of 36 cSt at 50°C in conjunction with UEIK-11 electronic control unit)

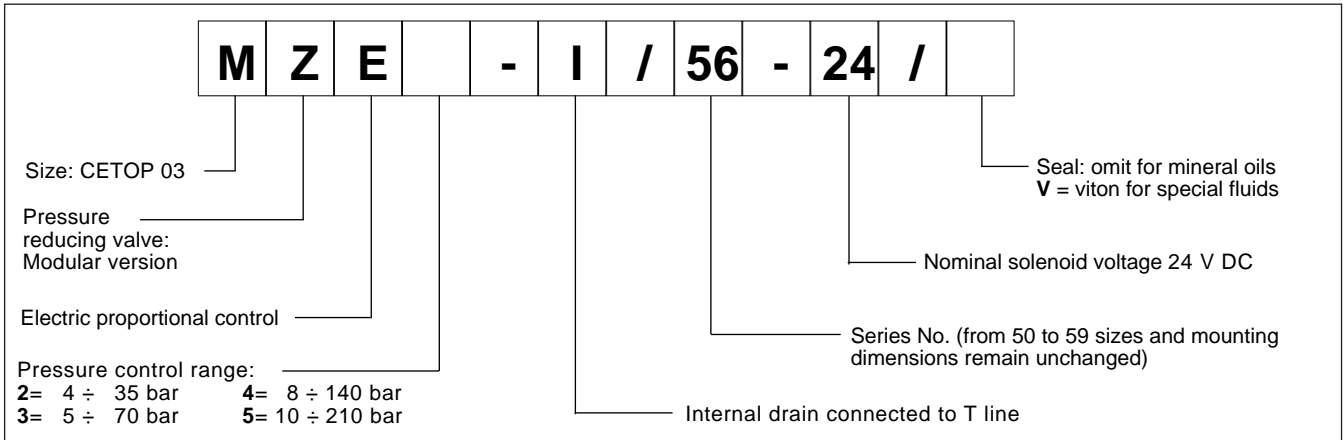
Maximum operating pressure:	– P-A-B port – T port	bar bar	320 2
Minimum controlled pressure	see diagram $\Delta p$ -Q		
Maximum flow in P line		l/min.	30
Maximum flow on passing lines		l/min.	50
Drain flow		l/min.	0,6
Step response	see par. 5		
Hysteresis	% of p range		< 6%
Repeatability	% of p range		< $\pm 2,5\%$
Electrical characteristics	see par. 4		
Ambient temperature range	°C		-10 ÷ +50
Fluid temperature range	°C		-20 ÷ +80
Fluid viscosity range	cSt		10 ÷ 400
Recommended viscosity	cSt		25
Degree of fluid contamination	According to NAS 1638 class 7 ÷ 9		
Mass	kg		1,7

### HYDRAULIC SYMBOL



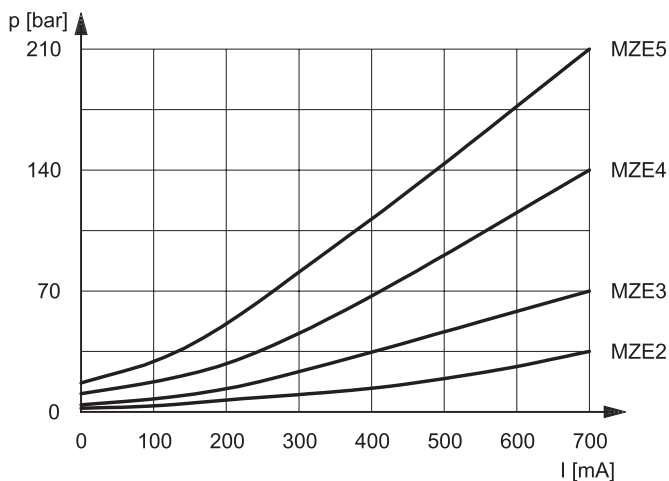


## 1 - IDENTIFICATION CODE



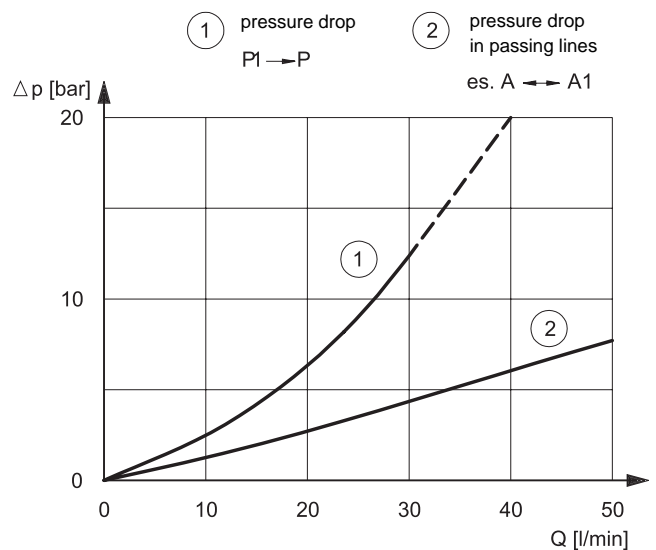
## 2 - CHARACTERISTIC CURVES (measured with viscosity 36 cSt at 50°C)

### PRESSURE CONTROL $p=f(I)$

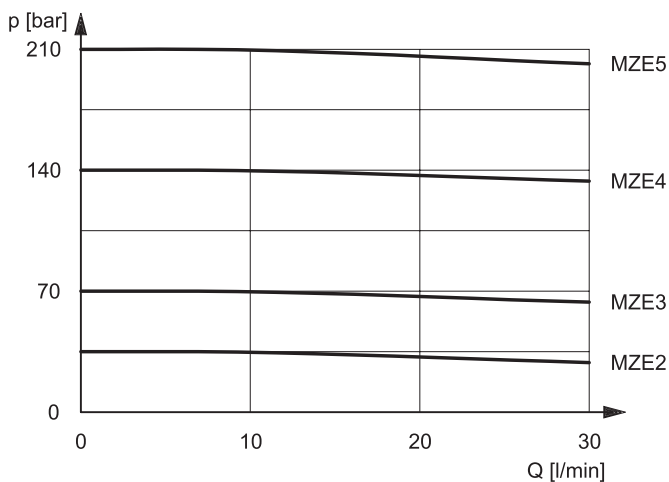


Typical control curves according to the current supplied to the solenoid for pressure control ranges: 2-3-4-5, measured with input flow rate  $Q=25$  l/min.

### PRESSURE DROP $\Delta p=f(Q)$



### PRESSURE CONTROL $p = f(Q)$





### 3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids with anti-foam and anti-oxidant additives. For use with other types of fluids (water glycol, phosphate esters and others) consult our technical department.

Operation with fluid temperature exceeding 70°C causes premature deterioration of the quality of the fluid and seals. The physical and chemical properties of the fluid must be maintained.

### 4 - ELECTRICAL CHARACTERISTICS

#### Proportional solenoid

The proportional solenoid comprises two parts: tube and coil.

The tube, screwed to the valve body, contains the armature which is designed to maintain friction to a minimum thereby reducing hysteresis.

The coil is mounted on the tube secured by means of a lock nut and can be rotated through 360° depending on installation clearances.

<b>NOMINAL VOLTAGE</b>	V DC	20
<b>COIL RESISTANCE (at 20°C)</b>	Ω	18,5
<b>CURRENT</b>	<b>nominal</b> <b>maximum</b>	A 0,7 0,82
<b>DUTY CYCLE</b>	100%	
<b>ELECTROMAGNETIC COMPATIBILITY (EMC)</b>	in compliance with 89/336 EEC	
- EMISSIONS	EN 50081-1	
- IMMUNITY	EN 50082-2	
<b>PROTECTION TO ATMOSPHERIC AGENTS (according to IEC 144 standards)</b>	IP 65	

#### 5 - STEP RESPONSE (with mineral oil with viscosity of 36 cSt at 50°C in conjunction with UEIK-11 electronic control unit)

Step response is the time taken for the valve to reach 90% of the set pressure value following a step change of reference signal.

The table illustrates typical step response times measured with input flow rate of Q = 25 l/min.

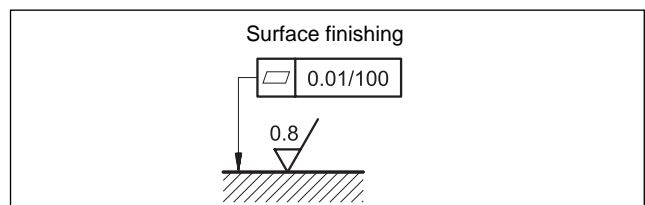
<b>REFERENCE SIGNAL STEP</b>	0→100%	100%→0	25→75%	75→25%
Step response [ms]	100	80	80	70

### 6 - INSTALLATION

MZE valves can be installed in any position without impairing correct operation. Ensure that there is no air in the hydraulic circuit.

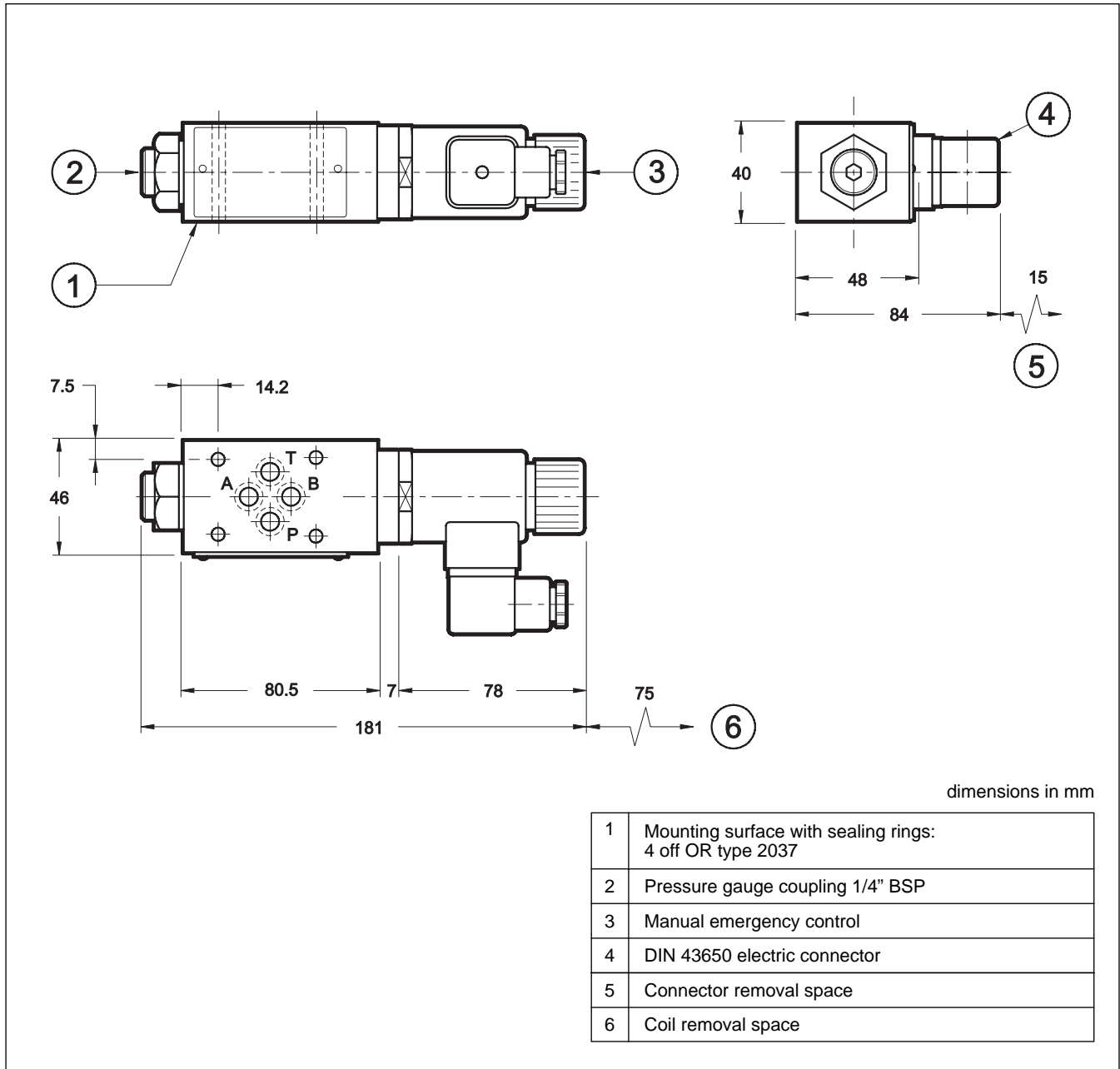
Connect the T port on the valve directly to the tank. Add any backpressure value detected in the T line to the controlled pressure value. Maximum admissible backpressure in the T line, under operational conditions, is 2 bar. In static conditions maximum admissible backpressure is 140 bar.

Valves are fixed by means of screws or tie rods on a flat surface with planarity and roughness equal to or better than those indicated in the relative symbols. If minimum values are not observed fluid can easily leak between the valve and support surface.





**7 - OVERALL AND MOUNTING DIMENSIONS**



**8 - ELECTRONIC CONTROL UNITS**

EPC-114 plug version	(see cat. 89 110)
EPA-M114 rail mounting	DIN EN 50022 (see cat. 89 220)
UEIK-11 Eurocard type	(see cat. 89 300)

<p><b>DIPLOMATIC</b> HYDRAULICS</p>	<p><b>DIPLOMATIC OLEODINAMICA SpA</b> 20025 LEGNANO (MI) - P.le Bozzi, 1 / Via Edison Tel. 0331/472111 - Fax 0331/548328</p>	
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