



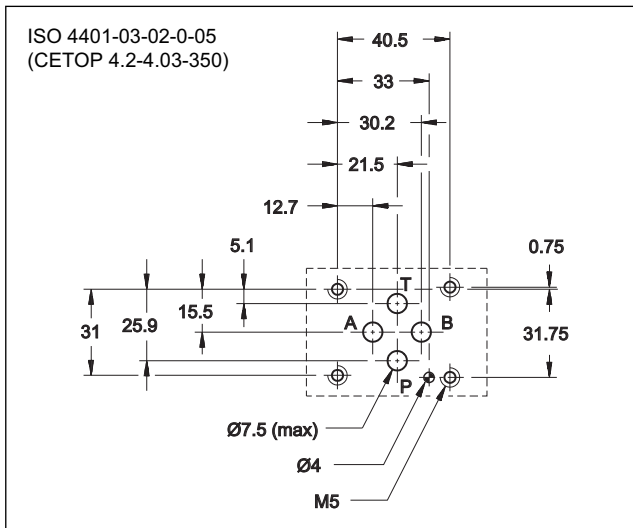
DXE3J

HIGH RESPONSE SERVO-PROPORTIONAL VALVE WITH FEEDBACK AND INTEGRATED ELECTRONICS SERIES 30

SUBPLATE MOUNTING ISO 4401-03 (CETOP 03)

p max 350 bar
Q max 70 l/min

MOUNTING INTERFACE



PERFORMANCES

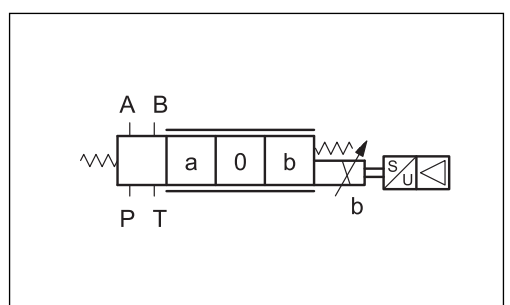
(with mineral oil of viscosity 36 cSt at 50°C)

Maximum operating pressure Ports P - A - B Port T	bar	350 250
Rated flow Q nom (with Δp 70 bar P - T)	l/min	5 - 10 - 20 - 40
Hysteresis	% In	< 0,2
Threshold	% In	< 0,1
Thermal drift (with $\Delta T = 40$ °C)	% In	< 1,0
Response time (0-100%)	ms	≤ 10
Vibration on the three axes	g	30
Ambient temperature range	°C	-20 / +60
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	5 + 400
Fluid contamination degree	according to ISO 4406:1999 class 17/15/12 (16/14/11 for longer life)	
Recommended viscosity	cSt	25
Mass	kg	2,6

OPERATING PRINCIPLE

- The DXE3J valve is a four-way (3 + fail-safe position) servo-proportional valve where the spool moves inside a sleeve. It is operated by a proportional solenoid highly dynamic, which achieves high performance and not requires pilot pressure. The spool position is controlled by a linear transducer (LVDT) in closed loop which ensures high precision and repeatability.
- It is available in four different flow ranges up to 40 l/min, with spools with zero overlap.
- The valve is featured by integral electronic based on SMD technology which ensures standard regulations and simplifies the electric wiring. The unit does not require any adjustment other than the possible electronic regulation of the zero.
- Suitable for control applications with closed loop of position, velocity and pressure. With a power down or without the enable input, the spool moves automatically at fail-safe position.

HYDRAULIC SYMBOL



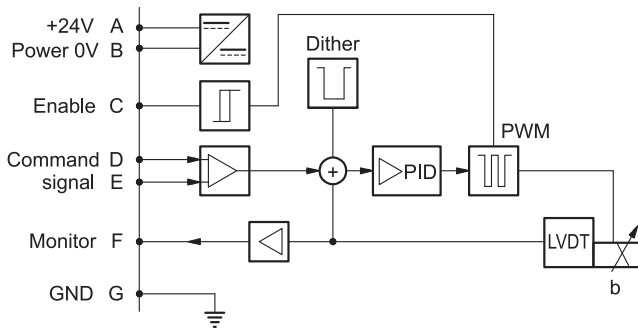
4 - ELECTRICAL CHARACTERISTICS

4.1 - Electrical on board electronics

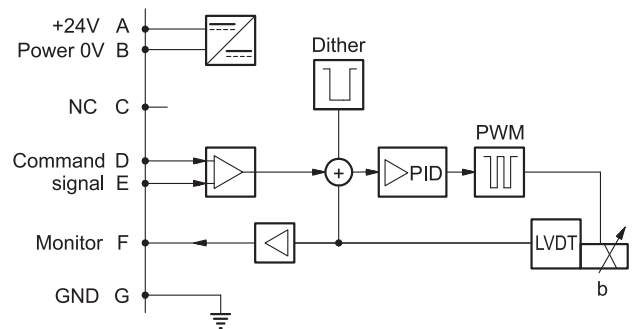
Duty cycle		100% (continuous operation)
Protection class according to EN 60529		IP65 / IP67
Supply voltage	V DC	24 (from 19 to 35 VDC), ripple max 3 Vpp
Power consumption	VA	35
Maximum solenoid current	A	2.6
Fuse protection, external		(fast), max current 4A
Command signals:	voltage (E0) current (E1)	V DC mA
		± 10 (Impedance $R_i > 11\text{ k}\Omega$) $4 \div 20$ (Impedance $R_i = 58\ \Omega$)
Monitor signals:	voltage (E0) current (E1)	V DC mA
		± 10 (Impedance $R_o > 1\text{ k}\Omega$) $4 \div 20$ (Impedance $R_o = 500\ \Omega$)
Managed breakdowns		Overload and electronics overheating, LVDT sensor error, cable breakdown, supply voltage failure
Communication		LIN-bus Interface (with the optional kit)
Connection		7 - pin MIL-C-5015-G (DIN-EN 175201-804)
Electromagnetic compatibility (EMC)		
emissions	EN 61000-6-4	
immunity	EN 61000-6-2	
		According to 2004/108/EC standards

4.2 - On-board electronics diagrams

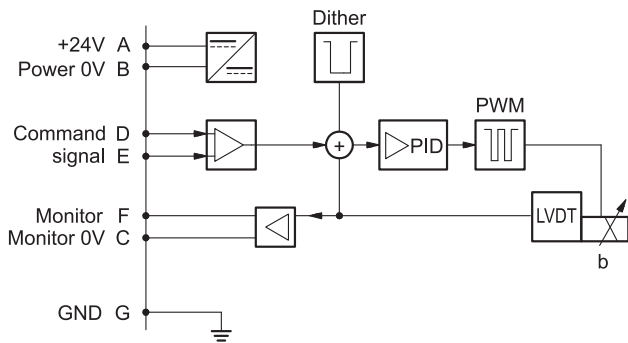
VERSION A - External Enable



VERSION B - Internal Enable

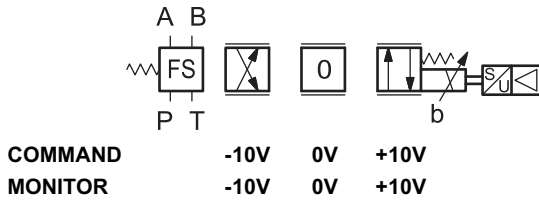


VERSION C - 0V Monitor



5 - VERSIONS WITH VOLTAGE COMMAND (E0)

The reference signal must be between -10V and +10V. The monitor feature of versions B and C becomes available with a delay of 0,5 sec from the power-on of the card.

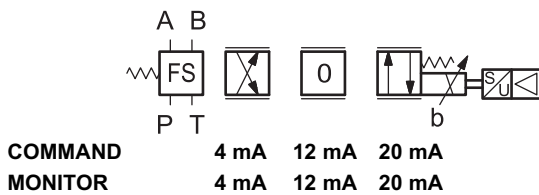


Pin	Values	version A	version B	version C
A	24V DC	Supply Voltage		
B	0V			
C		Enable 24V DC	not used -	PIN F reference 0V
D	± 10V	Command (differential input)		
E	0V	PIN D reference		
F	± 10V	Monitor (0V reference: pin B)		Monitor
PE	GND	Ground (Earth)		

6 - VERSIONS WITH CURRENT COMMAND (E1)

The reference signal is supplied in current 4 ± 20 mA. If the current for command is lower the card shows a breakdown cable error. To reset the error is sufficient to restore the signal.

The monitor feature of versions B and C becomes available with a delay of 0,5 sec from the power-on of the card.

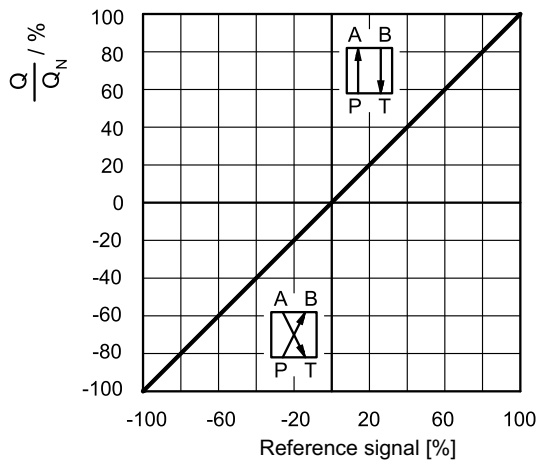


Pin	Values	version A	version B	version C
A	24V DC	Supply Voltage		
B	0V			
C		Enable 24V DC	not used -	PIN F reference 0V
D	4 ± 20 mA	Command		
E	0V	PIN D reference		
F	4 ± 20 mA	Monitor (0V reference: pin B)		Monitor
PE	GND	Ground (Earth)		

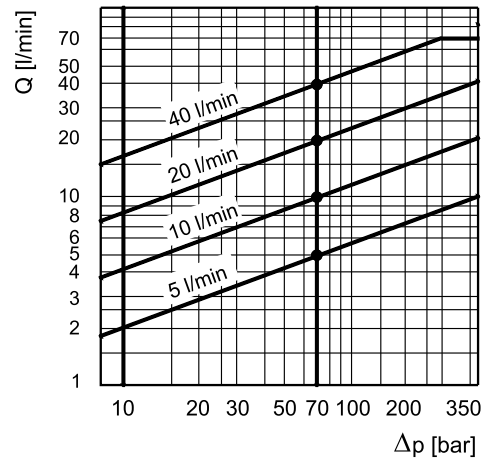
6 - CHARACTERISTIC CURVES

(measured with viscosity of 36 cSt at 50°C)

REFERENCE / FLOW RATE CURVE



FLOW RATE CURVE ACCORDING TO Δp

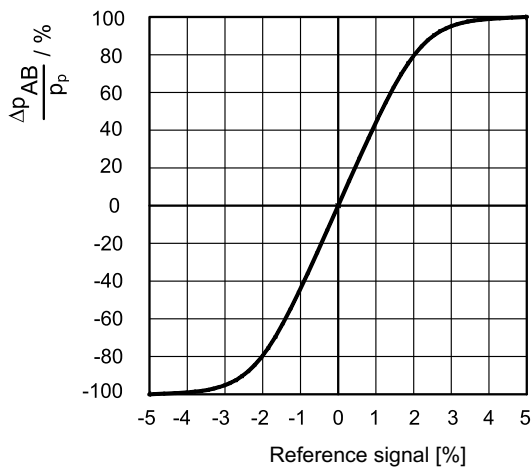


Typical flow rate curves at constant $\Delta p = 70$ bar P-T according to the reference signal.

NOTE: with positive reference signal connected to pin D the valve regulates P - A / B - T.

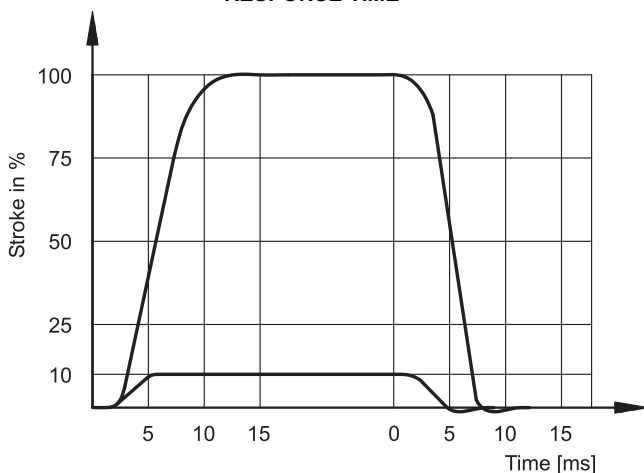
The diagram states the maximum valve controlled flow rate according to the pressure drop between the P and T ports.

PRESSURE GAIN (LZ)

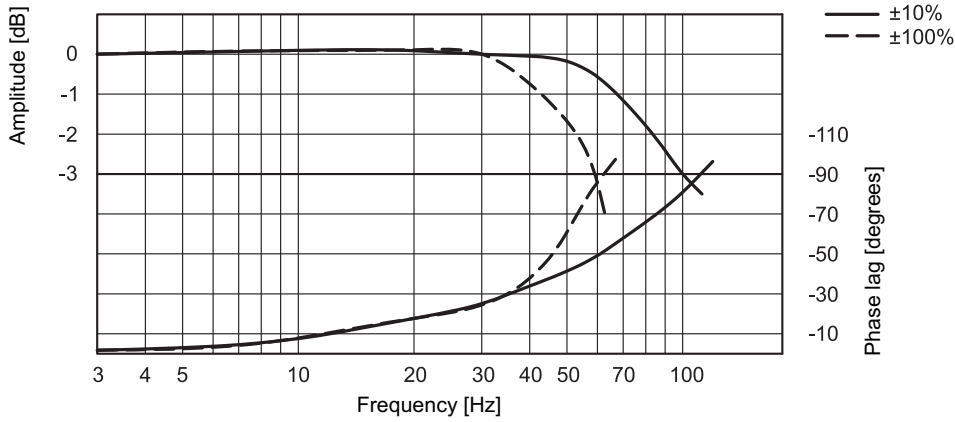


The diagram shows the valve pressure gain, expressed as % of the ratio between the port pressure variation in A or B (Δp_{AB}) and the P system pressure, according to the reference signal. In practice, the pressure gain states the valve reaction towards external disturbances aimed at changing the actuator position.

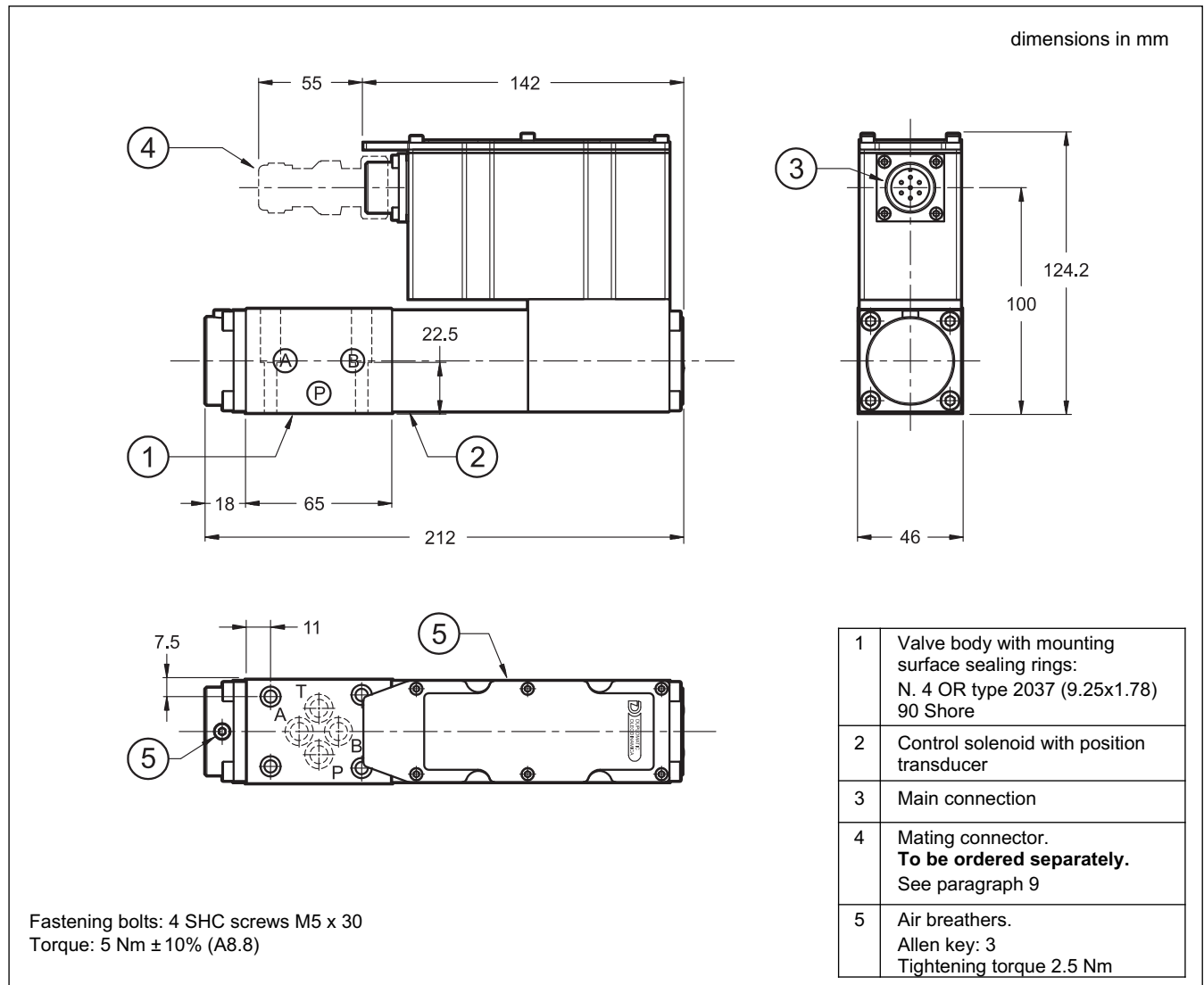
RESPONSE TIME



FREQUENCY RESPONSE



7 - OVERALL AND MOUNTING DIMENSIONS

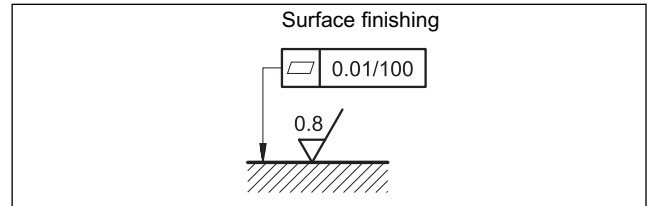


8 - INSTALLATION

The valves can be installed in any position without impairing correct operation.

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.

Take care to the cleanliness of the mounting surfaces and surrounding environment upon installation.



9 - ACCESSORIES

(to be ordered separately)

9.1 Mating connector

These valves have a plug for 7-pin mating connector, that is placed on the box of the integral motion control.

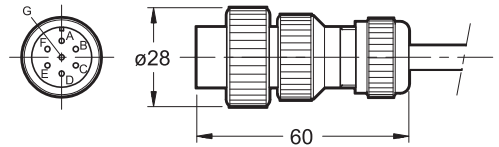


So as to avoid electromagnetic troubles and comply with the electromagnetic compatibility regulation EMC, it is recommended the use of a metal connector.

If a plastic connector is used, make sure that the protection characteristics IP and EMC of the valve are guaranteed.

Diplomatic can provide a metal cable connector type MIL-C-5015-G (EN 175201-804).

name: **EX7S/L/10** code **3890000003**



9.2 - Connection cables size

Power supply:

- up to 20 m cable length : 1,0 mm²
- up to 40 m cable length : 1,5 mm²

Signal: 0,50 mm²

A suitable cable would have 7 isolated conductors, a separate screen for the signal wires and an overall screen.

9.3 - Kit for start-up LINPC-USB

Device for service start-up and diagnostic, see catalogue 89850.



DXE3J

SERIES 30



DIPLOMATIC OLEODINAMICA S.p.A.
20015 PARABIAGO (MI) • Via M. Re Depaolini 24
Tel. +39 0331.895.111
Fax +39 0331.895.339
www.diplomatic.com • e-mail: sales.exp@diplomatic.com

