

CONTINENTAL HYDRAULICS

VEPO3MSV-PDRP

3-WAY PROPORTIONAL PRESSURE REDUCING/RELIEVING VALVES





3-WAY PROPORTIONAL PRESSURE REDUCING/RELIEVING VALVES



DESCRIPTION

The VEP03MSV-PDRP is a D03 modular three-way proportional pressure reducing/relieving valve conform to NFPA D03/ISO 4401 mounting standards.

OPERATION

These valves are designed to provide remote variable pressure control in the pressure port of a secondary circuit. The controlled pressure is proportional to the amount of current supplied to the solenoid.

As flow demands change, the valve opening will modulate to maintain the circuit pressure. The VEP03MSV-PDRP will also relieve the tank to vent a load induced pressure spike. In evento of a loss in electrical power, the valve spool will return to the low pressure condition.

The proportional solenoids can be driven by a variable current power supply or by use of external Power Amplifier Cards designed to maximize the valve performance.



TYPICAL PERFORMANCE SPECIFICATIONS

MAXIMUM	P - A - B Ports	4600 psi	320 bar			
PRESSURE	T Port	30 psi	2 bar			
	Controlled line	8 gpm	30 I/min			
MAXIMUM FLOW RATE	Free line	13.2 gpm	50 I/min			
	Drainage	24 in ³ /min	0.4 l/min			
MOUNTING SURFACE		NFPA D03 ISO 4401-03-02-0-05				
STEP RESPONSE	0 →100%	100 ms				
WITH Q = 6.6 gpm	100 →0%	80 ms				
HYSTERESIS WITH PWM 200	% of p nom	< 3%				
REPEATABILITY	% of p nom	<± 1.5%				
POWER SUPPLY		12V DC or 24V DC				
CONNECTION		DIN 43650				
PROTECTION	IEC 60529	IP 65				
WEIGHT		4 lbs	1.8 kg			



IDENTIFICATION CODE



CHARACTERISTICS - VARIABLE ADJUSTMENT

PRESSURE REGULATION



NOTES:

- 1. Curves obtained with mineral oil viscosity of 170 sus (36 cSt) at 122°F (50°C).
- The curves have been obtained with inlet pressure 725 psi (50 bar) higher than the nominal pressure. Pressure values in P1higher than 725 psi (50 bar) reduce flow values considerably.

CURVE	PRESSURE CODE
1	070
2	150
3	230



CHARACTERISTICS - VARIABLE ADJUSTMENT

PRESSURE CONTROL



CURVE	PRESSURE CODE
1	070
2	150
3	230

NOTES:

- 1. Curves obtained with mineral oil viscosity of 170 sus (36 cSt) at 122°F (50°C).
- 2. The curves have been obtained without flow on the A and B ports.

PRESSURE DROPS



NOTES:

- 1. Pressure drops $P \rightarrow P1$
- 2. Pressure drops on through ducts (ex: $A \leftrightarrow A1$)



Dimensions in mm [IN]



ELECTRICAL CHARACTERISTICS

The proportional solenoid consists of tube and coil. The coil is mounted on the tube and fastened to it by a ring retainer.

The coils may be mounted in any position depending on the installation requirements.

The declared IP degree is guaranteed for all valves only if the connector has been wired and mounted correctly on the coil.

ACCESSORY ELECTRONICS

Some external digital amplifiers are available to be coupled to the valve for better control and to improve the valve performances.

See Continental Hydraulics Control Amplifier Catalog for products to match your requirements.

VEA-3F-A: DIN Connector - Black

NOMINAL VOLTAGE	V DC	12	24	
RESISTANCE AT 68° F		3.66 Ω	16.6 Ω	
CURRENT AT 68° F		1.9 A	0.85 A	
DUTY CYCLE	100%			
ELECTROMAGNETIC COMPATIBILITY (EMC)	European Directive 2004/108/EC			
PROTECTION AGAINST ATMOSPHERIC AGENTS	IEC 60529	IP	65	
	Copper Wire	Class H (356° F)		
CLASS OF PROTECTION FOR INSULATION	Coil	Class F (311° F)		



FLUIDS

All pressure drops shown on these data pages are based on 170 SUS fluid viscosity and 0.87 specific gravity. For any other specific gravity (G1) the pressure drop (ΔP) will be approx. $\Delta P1 = \Delta P$ (G1/G). See the chart for other viscosities.

FLUID	Cst	10	14.5	32	36	43	54	65	76	86	108	216	324	400
VISCOSITIES	SUS	60	75	150	170	200	250	300	350	400	500	1000	1500	1900
MULTIPIER		0.77	0.81	0.97	1.00	1.04	1.10	1.15	1.20	1.24	1.31	1.56	1.72	1.83

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code G). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department.

Using fluids at temperatures higher than 180 degrees F causes the accelerated degradation of seals as well as degradation of the fluids physical and chemical properties.

From a safety standpoint, temperatures above 130 degrees F are not recommended.

PANGE TEMPERATURES.	Ambient	- 4 to +130°F	-20 to +54°C		
KANGE TEMT ENATORES.	Fluid	- 40 to +180°F	-20 to +82°C		
	Range	60-1900 SUS	10 - 400 cSt		
	Recommended	120 SUS	25 cSt		
FLUID CONTAMINATION		ISO 4406:1999 Class 18/16/13			

INSTALLATION

We recommend the VEP03MSV-PDR valve be installed either horizontally or vertically with the solenoid downwards. The minimum regulated pressure may vary from the graphs shown on page 3 if the valve is installed vertically with the solenoid upwards.

Bleed the air from the hydraulic circuit. Be sure that the solenoid tube is always full of oil. It may be necessary to vent entrapped air from the solenoid tube in certain applications or after a long shutdown period. The air bleed vent is located on the end of the solenoid tube. See page 4 for the location. Be sure to close the air bleed when the process is complete.

Connect the valve T port directly to the tank. Any back pressure from the tank line will add directly to the controlled pressure. The maximum allowable back pressure in the tank line under operational conditions is 2 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.

Surface finishing /7.0004/4.0

SEAL KIT

Buna Seal Kit	1013188
Viton Seal Kit	1013096



ABOUT CONTINENTAL HYDRAULICS

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