Proportional pressure reducing valves type PDM

The task of proportional pressure reducing valves in a hydraulic circuit is to maintain a rather constant outlet pressure (port A) despite a higher and changing inlet pressure (port P). They are used when an hydraulic circuit with a higher pressure level (primary side) is to supply another circuit with a lower pressure level (secondary side), without affecting the higher pressure in the primary circuit. There is a design related permanent leakage flow apparent at L, which has to be led back to the tank via a de-pressurized line. A reversal of the direction of flow is possible up to approx. 50% of Q_{max}. A by-pass check valve has to be provided for higher reversed flow. The pressure reducing valves size 11 and 21/22 feature an override compensation i.e. acting like a pressure limiting valve, if the pressure on the secondary side exceeds the set pressure e.g. due to external forces.

Features and benefits:

- With safety valve function

Intended applications:

- General hydraulics
- Jigs
- Test benches

Nomen-clature:	**Prop. pressure-reducing valve (directly controlled or piloted)**
Design:	**Individual valve for pipe connection Individual valve Manifold mounting**
Adjustment:	**Electro-proportional**
$p_{max\ P}$: $p_{max\ A}$:	**400 bar 5 ... 350 bar**
Q_{max}:	**120 lpm**

Design and order coding example

PDMP 2 PDM 4 G	**- 43**	**- G24**

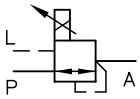
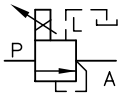
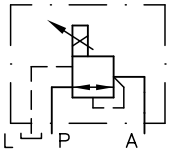
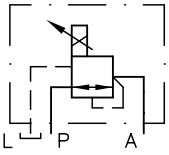
Nom. voltage prop. solenoid 12V DC, 24V DC, controls via prop. amplifier or PLVC

Pressure range Pressure ranges for pressure downstream at A

Basic type, size, design Type PDM (pipe connection), size 11, 21, 22
Type PDMP (manifold mounting), size 11, 22
Type PDM, size 3 to 5
Pipe connection (G), manifold mounting (P)

Function

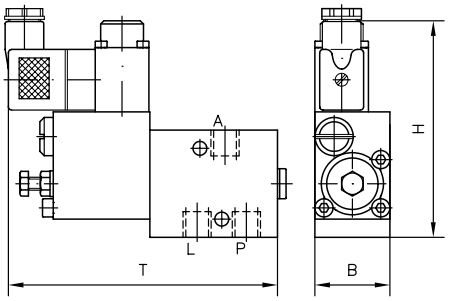
PDM

		Piloted	Piloted
Valve for pipe connection:		Manifold mounting valve:	
			

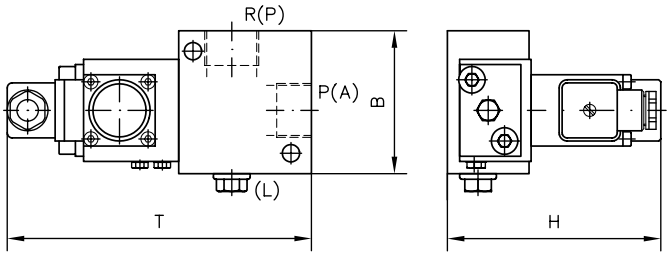
General parameters and dimensions

PDM 11, PDM 21, PDM 22

Valve for pipe connection

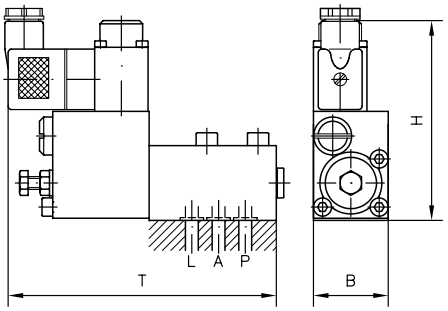


PDM 3 to 5

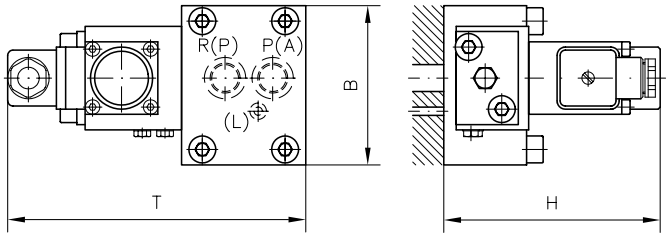


PDMP 11 and PDMP 22

Manifold mounting valve



PDM 4P and PDM 5P



		Q_{max} [lpm]	Pressure range $p_{max\ A}$ [bar]	Ports (BSPP)[1]	Leakage flow Q_{leak} [lpm]	Dimensions [mm]			m [kg]
						H	B	T	
PDM 11	Directly controlled	12	41: 80 42: 130 43: 200 44: 320	G 1/4	< 0.5	113	35	135	1.5
PDMP 11				-		108	35	135	1.4
PDM 21/22		20	41: 45 42: 70 43: 110 44: 180	G 1/4, G 3/8	< 0.5	113	35	142	1.6
PDMP 22				-		108	40	142	1.3
PDM 3 G	Piloted	40	N: 130 M: 200 H: 350	G 1/2	< 0.8	96	66	150	1.8
PDM 4 G		70		G 3/4		99.5	71	155	2.2
PDM 5 G		120		G 1		104.5	73	170	2.7
PDM 4 P		70		-	-	99.5	78	150	2.7
PDM 5 P		120		-	-	104.5	81	178	3.2

1) Version for pipe connection

Associated technical data sheets:

- Prop. pressure reducing valves type PDM: D 7486, D 7584/1

Similar products:

- Miniature prop. pressure reducing valves type PM, PMZ: D 7625

Prop. amplifier:

- Type EV1M (module): D 7831/1
- Type EV1G (module): D 7837
- Type EV1D (module): D 7831 D
- Type EV22K (card version): D 7817/1

Additional electrical components:

- Programmable logical valve control type PLVC: D 7845-41, D 7845 M

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