

10. Proportional Valves

Proportional Pressure Control Valve

Type	Series	Cetop	Max. Flow (GPM)	Ports Max. Pressure		Linearity	Hysteresis	Repeatability	Page
				P, A, B (PSI)	T (PSI)				
Pressure Control	4VP01 / VP01 ¹	03	1.3	5000	3000	≤ 2.8%	≤ 3.0%	-	10 - 2
Pressure Reducing	4RP01	03	3.4	1500	-	-	≤ 3.0%	≤ 1.0%	10 - 3
Pressure Relief	R1EP01	03	2.6	5000	Tank	≤ 1.5%	≤ 1.0%	≤ 0.5%	10 - 4
Pressure Relief	R4VP	05/08/10	24...160	5000	Tank	≤ 1.5%	≤ 1.0%	≤ 0.5%	10 - 5

Proportional Directional Valve

Type	Series	Cetop	Max. Flow ² (GPM)	Ports Maximum Pressure			Without Position Feedback		With Position Feedback		Page
				P A, B (PSI)	T Ext. drain Int. drain (PSI)	Drain Ext. drain Int. drain	Response ³ 0→100% 100%→0 (ms)	Hysteresis Repeatability	Response ² 0→100% 100%→0 (ms)	Hysteresis Repeatability	
Direct	4DP01	03	7.9	5000	3000 / 2300	145 / 2300	40 / 25	≤5.0% / ≤3.0%	30 / 20	≤1.0% / ≤0.5%	10 - 6
Operated	4DP02 ⁴	05	21.1	4600	3500 / 2300	145 / 2300	60 / 40	≤5.0% / ≤2.0%	50 / 35	≤1.0% / ≤0.5%	
Pilot	4DP03	07	53	5000	3500 / 3000	3000 / -	50 / 50	≤5.0% / ≤3.0%	50 / 25	≤1.0% / ≤0.5%	10-10
Operated	4DP06	08	106	5000	3500 / 3000	3000 / -	60 / 70	≤5.0% / ≤3.0%	50 / 50	≤1.0% / ≤0.5%	

Proportional Flow Control Valve

Type	Series	Size	Max. Flow ⁵ (GPM)	Max. Pressure		Page
				A, B Ports (PSI)	Other ports (PSI)	
Throttle Valve	C1FP	16	53	5000	1500 (Y port)	10 - 14
		25	106			
		32	169			
		40	240			
Flange Mounted Flow Control	F5C	¾"	25	4000	500 (drain)	10 - 16
		1"	50			
		1 ¼"	100			

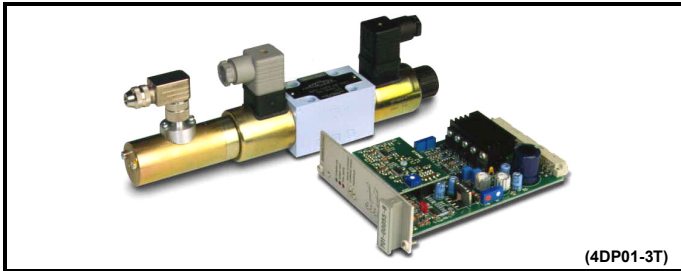
¹ See R4V/R4V...P2 and R5V/R5P...P2 : section 5.

² At 75 psi Δp per edge.

³ With 12 VDC coils.

⁴ Contact Denison Hydraulics for availability.

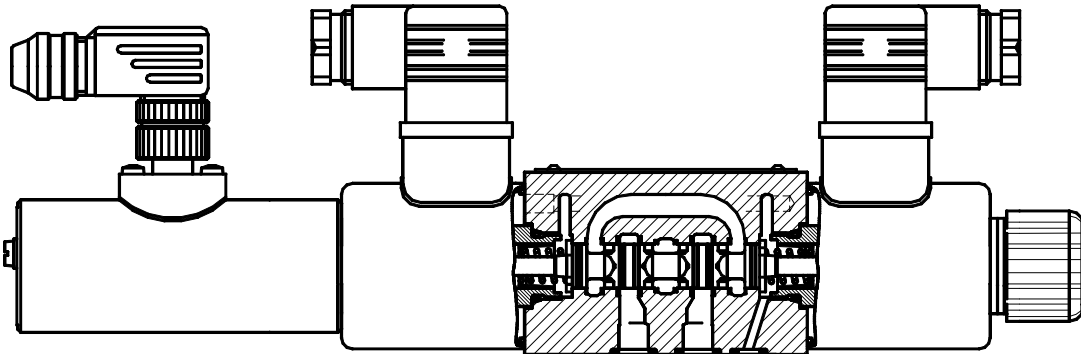
⁵ At 150 psi Δp.



**Direct Operated
Proportional Directional Valves**

4DP01 Series (CETOP 03) - 7.9 GPM - 5000 PSI
4DP02 Series (CETOP 05) - 21.1 GPM - 5000 PSI

(4DP01-3T)



(4DP01-3T)

Key sheet Example : **4DP01-3E02F20-03B1-G12-C1**

1. 4DP01-3E02F20-03B1-G12-C1 Series

Direct operated, CETOP 03	4DP01
Direct operated, CETOP 05 ¹	4DP02

2. 4DP01-3E02F20-03B1-G12-C1 Body

Standard	3
Drain port "L" (for T port > 2300 PSI)	L

3. 4DP01-3E02F20-03B1-G12-C1 Control

Without spool position feedback	E
With spool position feedback	T

4. 4DP01-3E02F20-03B1-G12-C1 Spool

5. 4DP01-3E02F20-03B1-G12-C1 Nominal Flow

0.35 psi ΔP per edge	4DP01		4DP02	
P→A;B→T Or P→B;A→T	2.6 GPM	F10	10.6 GPM	F40
	5.3 GPM	F20	15.9 GPM	F60
	7.9 GPM	F30	21.1 GPM	F80

6. 4DP01-3E02F20-03B1-G12-C1 Spool position

7. 4DP01-3E02F20-03B1-G12-C1 Design

8. 4DP01-3E02F20-03B1-G12-C1 Seal Class

Buna N : Mineral oil	1
Viton : Mineral oil & Fire resistant fluids	5

9. 4DP01-3E02F20-03B1-G12-C1 Voltage

12 VDC (recommended) ²	G12
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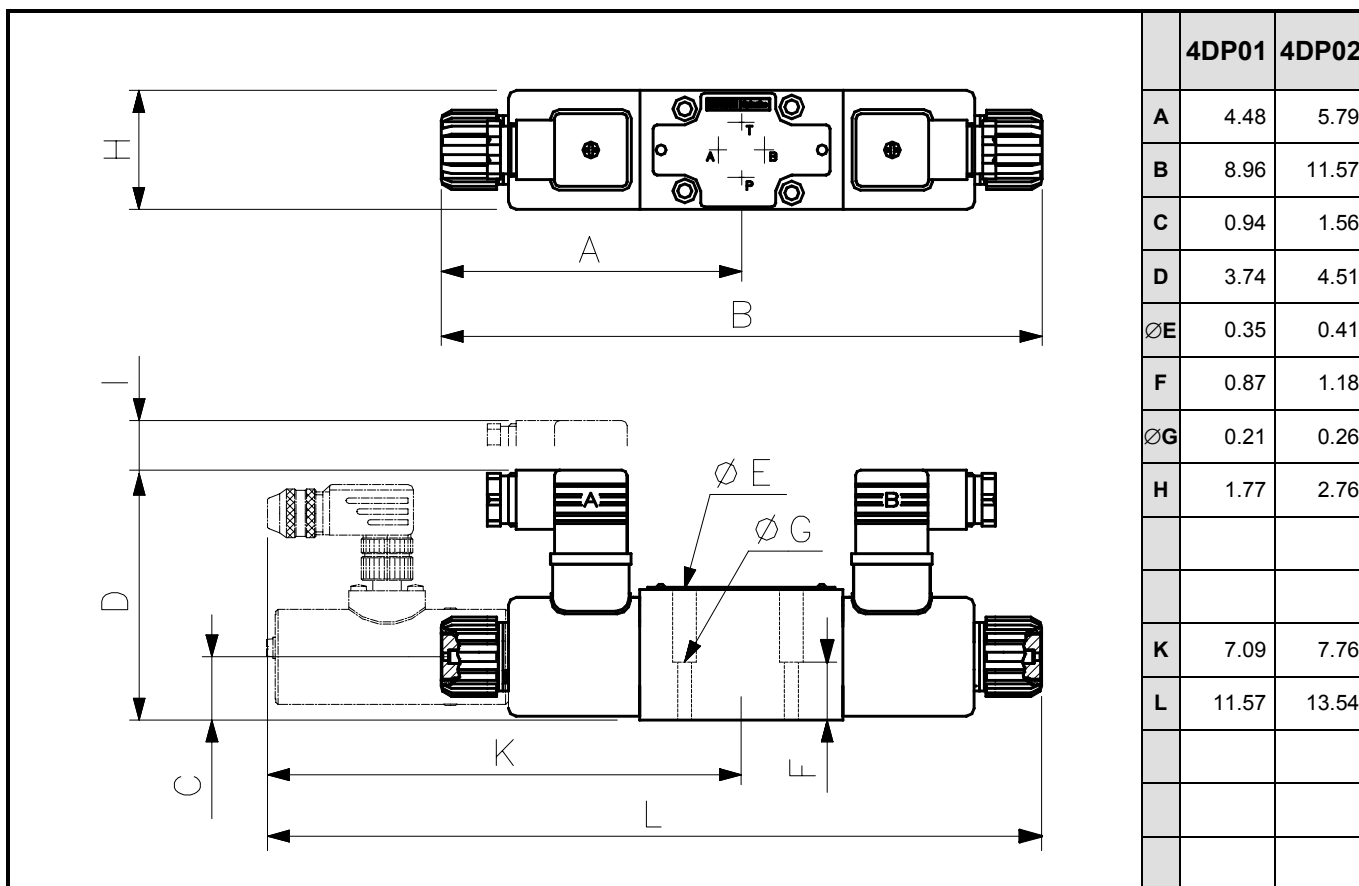
10. 4DP01-3E02F20-03B1-G12-C1 Connector

Connectors PG9 & PG11 included	C1
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² 24 VDC available : consult Denison Hydraulics.

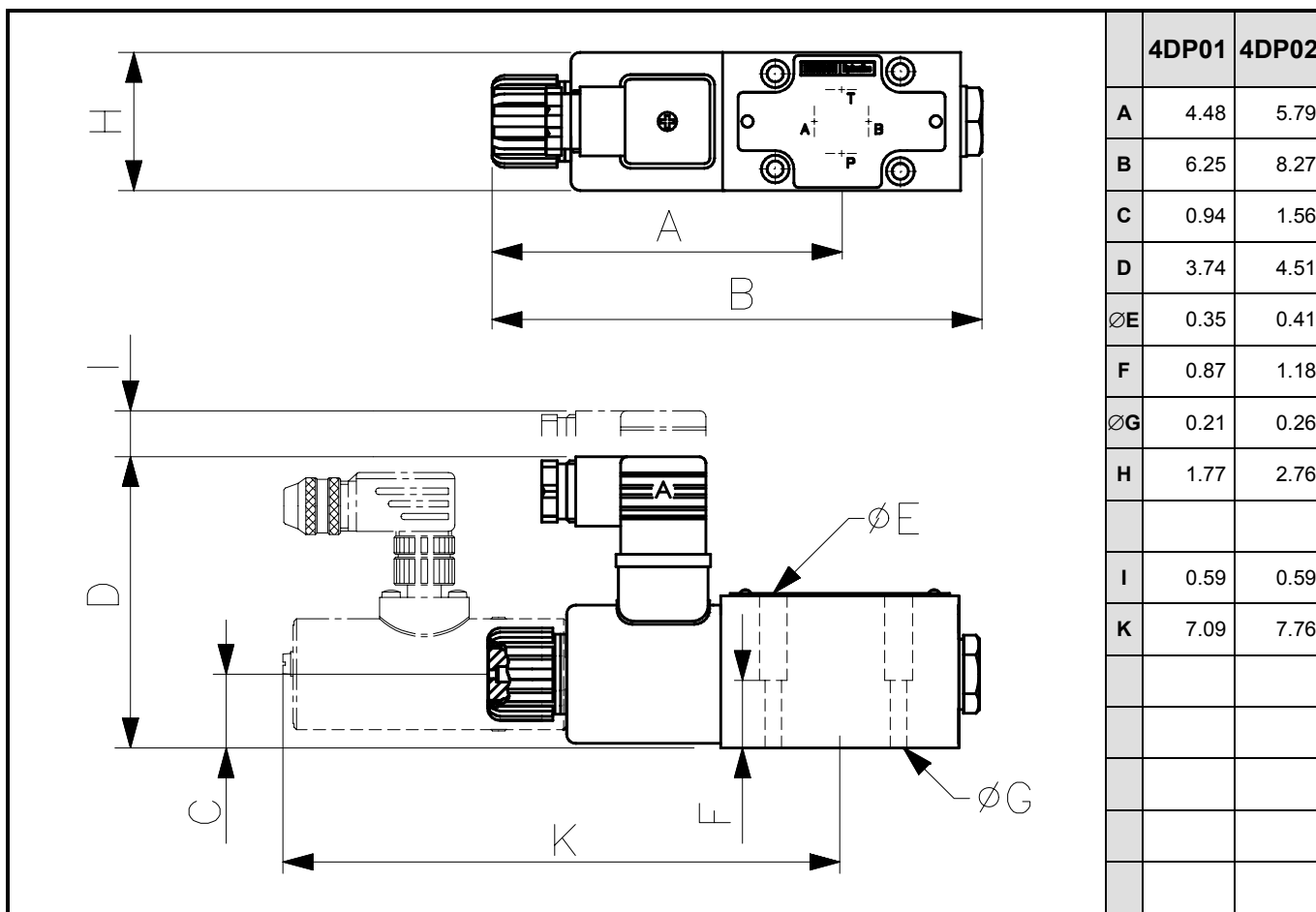
¹ Consult Denison Hydraulics for availability.

Proportional Amplifier				Accessories	
solenoid		4DP0*-3E... - Open Loop	4DP0*-3T... - Close Loop		
4DP01	1	EC01-A10 - 12 VDC : 701-00603-8	EC01-A1C - 12 VDC : 701-00620-8	Power supply (115/230 VAC)	701-00023-8
	2	EC01-A20 - 12 VDC : 701-00610-8	EC01-A2C - 12 VDC : 701-00630-8	Card holder	701-00066-8
4DP02	1	EC01-A10 - 12 VDC : 701-00602-8	EC01-A1C - 12 VDC : 701-00621-8	Potentiometer (360°)	701-00012-8
	2	EC01-A20 - 12 VDC : 701-00611-8	EC01-A2C - 12 VDC : 701-00631-8	Potentiometer (3600°)	701-00013-8
				Adjustment knob	701-00014-8



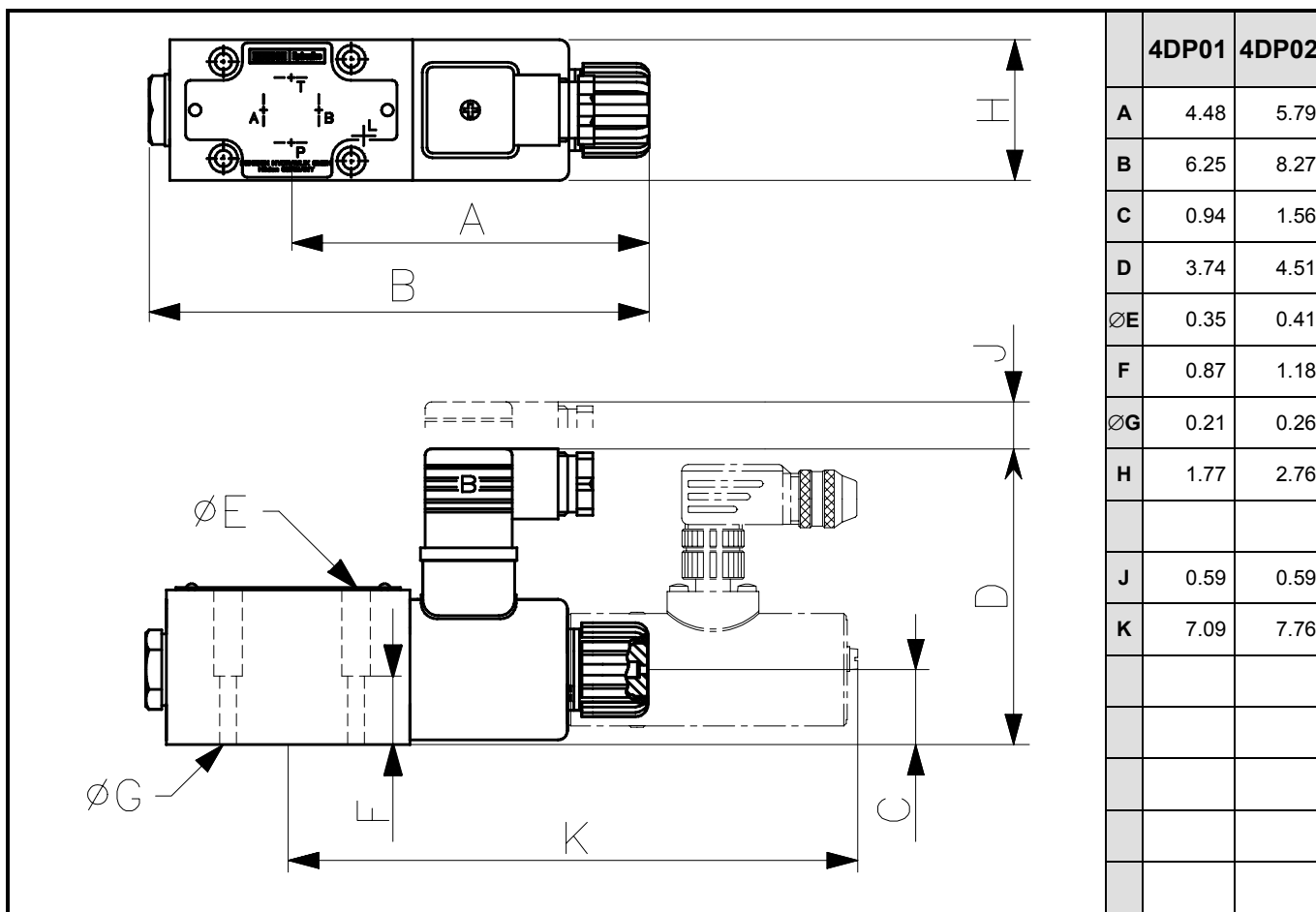
Symbol b ← Solenoid → a	4DP01		4DP02	
	GPM	Designation	GPM	Designation
	2.6	4DP01-3E02F10-03B1-G12-C1	10.6	4DP02-3E02F40-03B1-G12-C1
	5.3	4DP01-3E02F20-03B1-G12-C1	15.9	4DP02-3E02F60-03B1-G12-C1
	7.9	4DP01-3E02F30-03B1-G12-C1	21.1	4DP02-3E02F80-03B1-G12-C1
	2.6	4DP01-3E43F10-03B1-G12-C1	10.6	4DP02-3E43F40-03B1-G12-C1
	5.3	4DP01-3E43F20-03B1-G12-C1	15.9	4DP02-3E43F60-03B1-G12-C1
	7.9	4DP01-3E43F30-03B1-G12-C1	21.1	4DP02-3E43F80-03B1-G12-C1
	2.6	4DP01-3T02F10-03B1-G12-C1	10.6	4DP02-3T02F40-03B1-G12-C1
	5.3	4DP01-3T02F20-03B1-G12-C1	15.9	4DP02-3T02F60-03B1-G12-C1
	7.9	4DP01-3T02F30-03B1-G12-C1	21.1	4DP02-3T02F80-03B1-G12-C1
	2.6	4DP01-3T43F10-03B1-G12-C1	10.6	4DP02-3T43F40-03B1-G12-C1
	5.3	4DP01-3T43F20-03B1-G12-C1	15.9	4DP02-3T43F60-03B1-G12-C1
	7.9	4DP01-3T43F30-03B1-G12-C1	21.1	4DP02-3T43F80-03B1-G12-C1

Pressure Compensator Option	4DP01		4DP02	
	Aluminum (3000 PSI)	Steel (5000 PSI)	Aluminum (3000 PSI)	Steel (5000 PSI)
3-port, meter-in, shuttle valve P-A/B	SPC 01 01 051C3A 026-42581-0	SPC 01 01 051C5A 026-42584-0	SPC 02 01 051C3A 026-42587-0	SPC 02 01 051C5A 026-42590-0
2-port, meter-in, shuttle valve P-A/B	SPC 01 11 051C3A 026-42557-0	SPC 01 11 051C5A 026-42560-0	SPC 02 11 051C3A 026-42563-0	SPC 02 11 051C5A 026-42566-0
2-port, meter-out P-A	SPC 01 12 051C3A 026-42605-0	SPC 01 12 051C5A 026-42608-0	SPC 02 12 051C3A 026-42611-0	SPC 02 12 051C5A 026-42614-0



b ← Symbol Solenoid	4DP01		4DP02	
	GPM	Designation	GPM	Designation
	2.6	4DP01-3E12F10-06B1-G12-C1	10.6	4DP02-3E12F40-06B1-G12-C1
	5.3	4DP01-3E12F20-06B1-G12-C1	15.9	4DP02-3E12F60-06B1-G12-C1
	7.9	4DP01-3E12F30-06B1-G12-C1	21.1	4DP02-3E12F80-06B1-G12-C1
	2.6	4DP01-3E13F10-06B1-G12-C1	10.6	4DP02-3E13F40-06B1-G12-C1
	5.3	4DP01-3E13F20-06B1-G12-C1	15.9	4DP02-3E13F60-06B1-G12-C1
	7.9	4DP01-3E13F30-06B1-G12-C1	21.1	4DP02-3E13F80-06B1-G12-C1
	2.6	4DP01-3T12F10-06B1-G12-C1	10.6	4DP02-3T12F40-06B1-G12-C1
	5.3	4DP01-3T12F20-06B1-G12-C1	15.9	4DP02-3T12F60-06B1-G12-C1
	7.9	4DP01-3T12F30-06B1-G12-C1	21.1	4DP02-3T12F80-06B1-G12-C1
	2.6	4DP01-3T13F10-06B1-G12-C1	10.6	4DP02-3T13F40-06B1-G12-C1
	5.3	4DP01-3T13F20-06B1-G12-C1	15.9	4DP02-3T13F60-06B1-G12-C1
	7.9	4DP01-3T13F30-06B1-G12-C1	21.1	4DP02-3T13F80-06B1-G12-C1

Pressure Compensator Option	4DP01		4DP02	
	Aluminum (3000 PSI)	Steel (5000 PSI)	Aluminum (3000 PSI)	Steel (5000 PSI)
3-port, meter-in P-A	SPC 01 01 051A3A 026-42593-0	SPC 01 01 051A5A 026-42596-0	SPC 02 01 051A3A 026-42599-0	SPC 02 01 051A5A 026-42602-0
2-port, meter-in P-A	SPC 01 11 051A3A 026-42569-0	SPC 01 11 051A5A 026-42572-0	SPC 02 11 051A3A 026-42575-0	SPC 02 11 051A5A 026-42578-0



Symbol Solenoid → a	4DP01		4DP02	
	GPM	Designation	GPM	Designation
	2.6	4DP01-3E12F10-05B1-G12-C1	10.6	4DP02-3E12F40-05B1-G12-C1
	5.3	4DP01-3E12F20-05B1-G12-C1	15.9	4DP02-3E12F60-05B1-G12-C1
	7.9	4DP01-3E12F30-05B1-G12-C1	21.1	4DP02-3E12F80-05B1-G12-C1
	2.6	4DP01-3E13F10-05B1-G12-C1	10.6	4DP02-3E13F40-05B1-G12-C1
	5.3	4DP01-3E13F20-05B1-G12-C1	15.9	4DP02-3E13F60-05B1-G12-C1
	7.9	4DP01-3E13F30-05B1-G12-C1	21.1	4DP02-3E13F80-05B1-G12-C1
	2.6	4DP01-3T12F10-05B1-G12-C1	10.6	4DP02-3T12F40-05B1-G12-C1
	5.3	4DP01-3T12F20-05B1-G12-C1	15.9	4DP02-3T12F60-05B1-G12-C1
	7.9	4DP01-3T12F30-05B1-G12-C1	21.1	4DP02-3T12F80-05B1-G12-C1
	2.6	4DP01-3T13F10-05B1-G12-C1	10.6	4DP02-3T13F40-05B1-G12-C1
	5.3	4DP01-3T13F20-05B1-G12-C1	15.9	4DP02-3T13F60-05B1-G12-C1
	7.9	4DP01-3T13F30-05B1-G12-C1	21.1	4DP02-3T13F80-05B1-G12-C1

Pressure Compensator Option	4DP01		4DP02	
	Aluminum (3000 PSI)	Steel (5000 PSI)	Aluminum (3000 PSI)	Steel (5000 PSI)
3-port, meter-in P-A	SPC 01 01 051A3A 026-42593-0	SPC 01 01 051A5A 026-42596-0	SPC 02 01 051A3A 026-42599-0	SPC 02 01 051A5A 026-42602-0
2-port, meter-in P-A	SPC 01 11 051A3A 026-42569-0	SPC 01 11 051A5A 026-42572-0	SPC 02 11 051A3A 026-42575-0	SPC 02 11 051A5A 026-42578-0