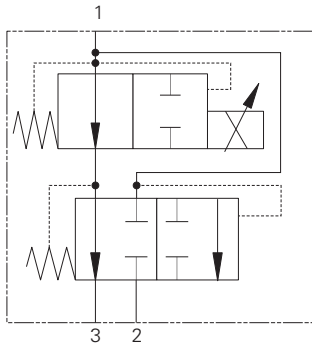


EFV2-12-O - Proportional Valve

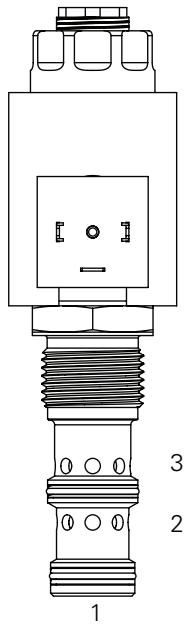
Proportional flow, normally open spool

Up to 114 L/min (30 USgpm) • 210 bar (3000 psi)

B



Sectional View



Operation

Current supplied to the coil controls the valve. At zero current, the valve is fully open from port 1 to port 3. At 1600 mA (12V coil) the valve is fully closed.

The valve will regulate flow out of port 3 regardless of downstream system pressure. As current is increased to the solenoid the flow out of port 3 will decrease.

Features

Hardened and ground working parts to give long life with good control; Compact design with low pressure drop. IP69K Tough coil compatibility, continuously rated.

Performance Data

Ratings and Specifications

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure	210 bar (3000 psi)
Cartridge endurance rating	1 million cycles
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi) NFPA rated
Rated flow	"A" Spool-max regulated flow (by-pass mode): 53 L/min (14 USgpm) max regulated flow (2 port mode): 42 L/min (11 USgpm) max input flow (input flow): 114 L/min (30 USgpm) "B" Spool-max regulated flow (by-pass mode): 38 L/min (10 USgpm) max regulated flow (2 port mode): 31 L/min (8 USgpm) max input flow (input flow): 114 L/min (30 USgpm) Note: Max regulated flow may decrease slightly during compensation.
Internal leakage (fully closed)	77-483 cm ³ /min (5-30 in ³ /min) @ 3000 PSID
Nominal supply voltage	12/24 V
Current to fully open valve	350 100 mA (12V coil), 800 100 mA (24V coil)
Current to fully close valve	1600 200 mA (12V coil), 800 100 mA (24V coil)
Recommended PWM frequency	200-400 Hz
Coil resistance	4.7v /12V, 19.0 /24V
Mass	Cartridge only 0,37 kg (0.82 lb), cartridge with coil and end nut 0,73 kg (1.62 lb)
Temperature range	-30° to 90°C (-22° to 194°F)
Maximum oil temperature	120°C (248°F)
Maximum internal coil temperature	200°C (392°F)
Cavity	C-12-3
Fluids	All general purpose hydraulics fluids such as: MIL-H-5606, SAE 10, SAE 20, DTE 24, etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Hysteresis	1.5 USgpm with 400Hz PWM driver
Seal kit	9900171-000 (Buna-N), 9900172-000 (Viton®)

Viton is a registered trademark of E.I. DuPont

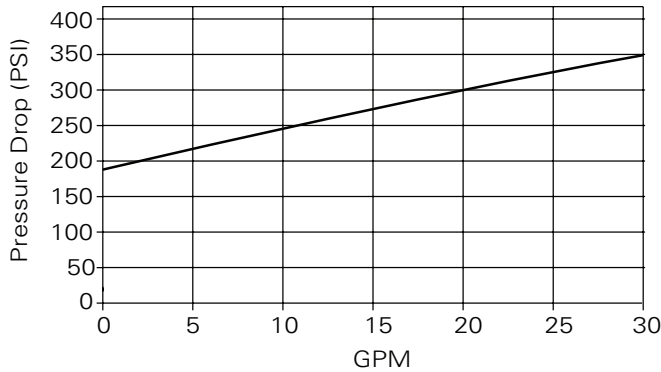
Description

This is a three port pressure compensated normally open proportional flow control screw in cartridge valve. The valve can be used as a priority or a restrictive style valve allowing the valve to control the outlet flow with the option of the excess flow being used for another system.

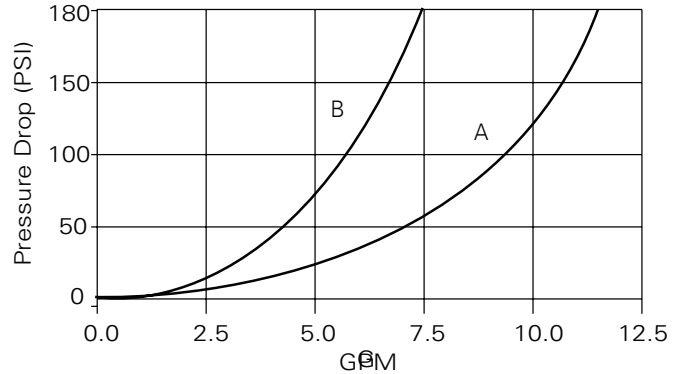
EFV2-12-O - Proportional Valve

Performance Curves

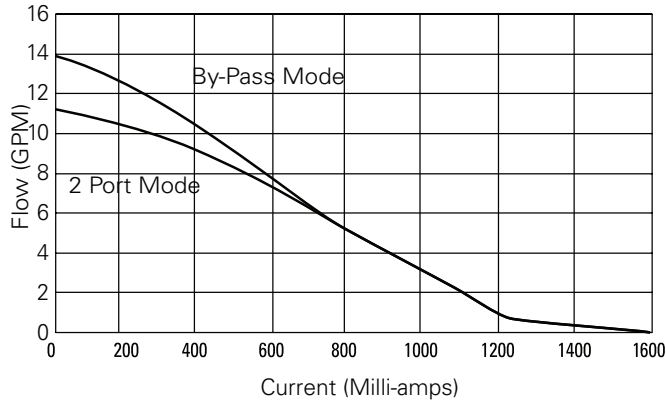
Pressure Drop Port 1 to Port 2



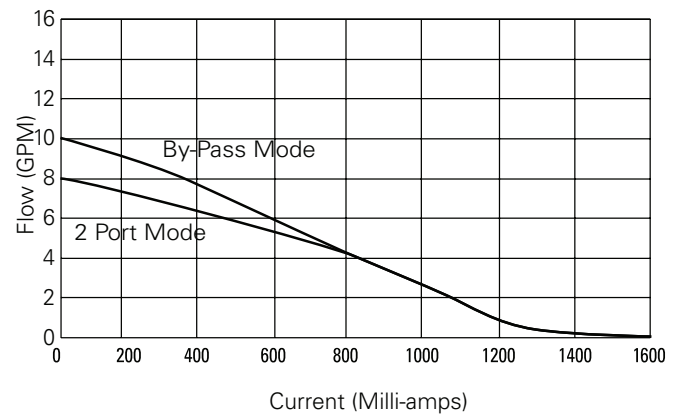
Pressure Drop Port 1 to Port 3



Flow vs Current - A Spool

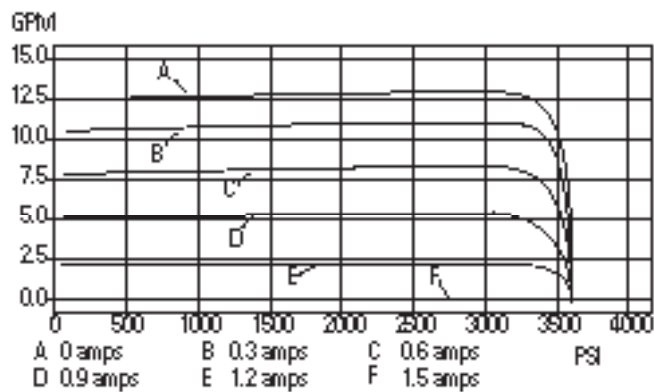


Flow vs Current - B Spool

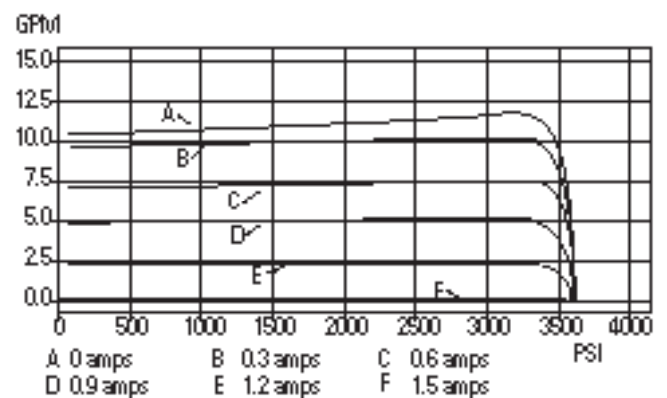


Parameters:
400 Hz PWM

Regulated Flow vs Pressure
Port 3 Pressure > Port 2 Pressure



Regulated Flow vs Pressure
Port 2 Pressure > Port 3 Pressure

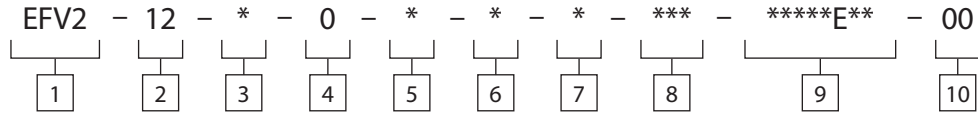


Note:
Pressure Compensation curves are shown for "B" spool valves.

EFV2-12-O - Proportional Valve

Proportional flow, normally open spool
Up to 114 L/min (30 USgpm) • 210 bar (3000 psi)

Model Code



B

1 Function
EFV2 - Electro proportional
flow control valve

2 Size
12 - 12 size

3 Seal Material
N - Buna-N
V - Viton®

4 Logic
0 - Normally open

5 Flow Rating
A - 14 USgpm @ 180 PSID
B - 10 USgpm @ 180 PSID
See specifications

6 Manual Override Option
0 - No core tube
special features
S - Screw-in

8 Port Size

Code	Port Size	Housing Number	
		Aluminium Single	Steel Single
0	Cartridge only		
4G	1/2" BSPP	02-161817	02-169815
6G	3/4" BSPP	02-161816	02-169814
10T	SAE 10	02-160642	02-161070
12T	SAE 12	02-160646	02-169816

Note: Both the manifold and port plug are required.
See section J for housing details.

7 Valve Housing Material
0 - Cartridge only
A - Aluminum
S - Steel

9 Coil Series
E - E series coils
*These model digits will not be
stamped on the valve.
For coil part numbers and
dimensions see section C.

10 Special Features
00 - None
Only required when valve has special
features, omitted if "00".

EFV2-12-O - Proportional Valve

Proportional flow, normally open spool
 Up to 114 L/min (30 USgpm) • 210 bar (3000 psi)

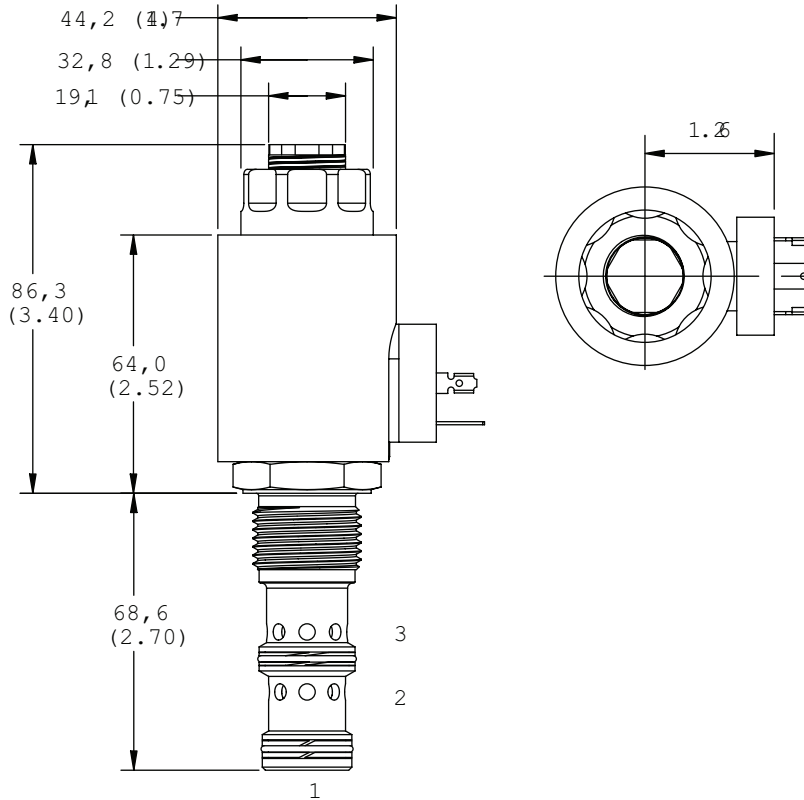
Dimensions

mm (inch)

Torque cartridge in housing
 S - 136-149 Nm (100-149 ft lbs)
 A - 108-122 Nm (80-90 ft lbs)

Note: EFV2-12 with DIN-43650 connector shown.

Cartridge Only



Installation Drawing (Aluminum)

