F16

Priority Flow Control Assembly With Relief & Unloading Valve

SOURCE FLUID POWER

Function
- Three port, bypass type, pressure compensated, relief valve and unloading valve with motorized flow control assembly for controlled flow adjustment.

Operation
- Maintains a constant flow rate at controlled port regardless of system pressure or flow variations. Relief valve to limit pressure and solenoid valve to unload flow without adjusting the motorized valve.
- **Note:** When unloading flow, the controlled port will see the pressure equal to the pressure drop through the unloading logic element.

Operating Pressure
- 3000 PSI maximum.

Flow Ranges
- **15** 0-15 gpm
- **20** 0-20 gpm
- **35** 0-35 gpm
- **50** 0-50 gpm
- Maximim inlet flow for all configurations is 50 gpm.
- Custom ranges are available upon request.

Construction
- Cage, body and spool: Steel, exposed parts plated.
- Motor housing assembly: Anodized aluminum.
- Manifold: Anodized aluminum.

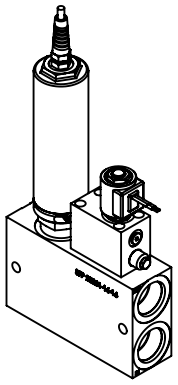
Seal Material
- Buna N and polyurethane standard.
- Viton optional.

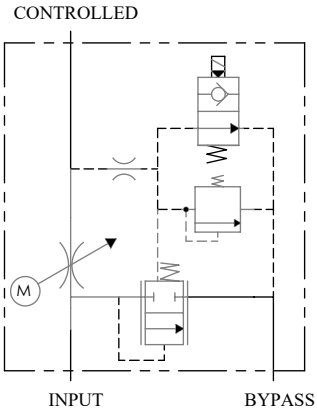
Voltage Options
- 12 VDC
- 24 VDC

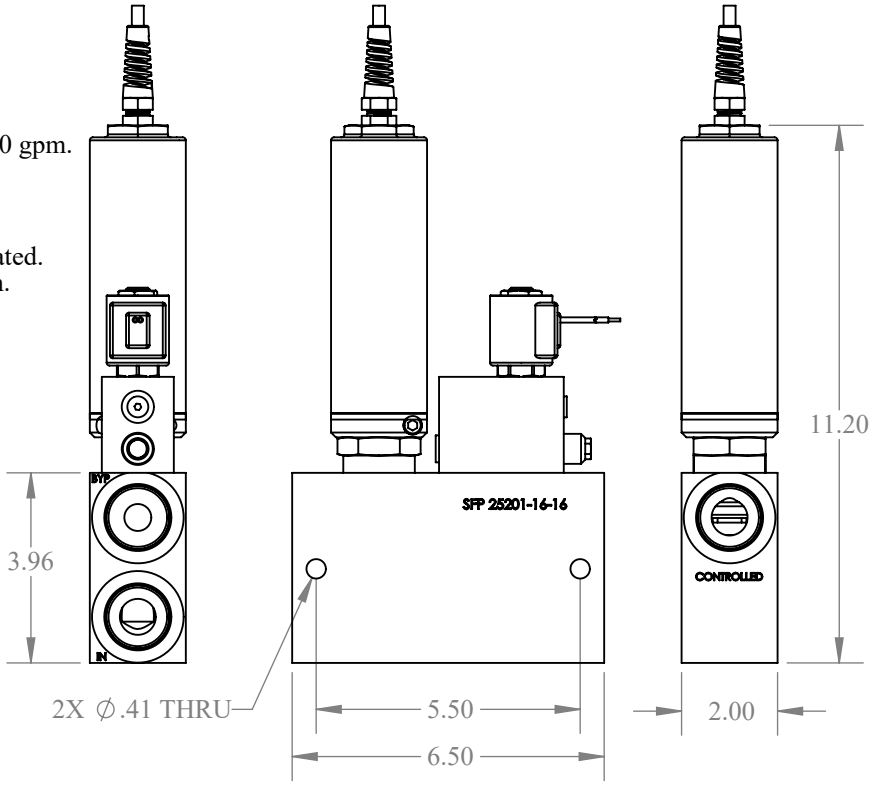
Current Draw
(Only while adjusting)
- 0.8 amp at 12 VDC
- 1.0 amp at 24 VDC

Temperature Rating
- -40 to 120°C

Package Weight
- 8.7 lbs.







NOTES:
* SHOWN WITH SAE -16 PORTS
** MANIFOLD SAME SIZE WITH SAE -12 PORTS

Flow Range
15 0-15 gpm
20 0-20 gpm
35 0-35 gpm
50 0-50 gpm

F16 □ □ □ 1 □ □ R □ S □ □

Solenoid Valve
S Normally open
C Normally closed

Operating Speed/Voltage
Select letter code from appendix page 1

Options
See appendix page 2 for available options

Port Size
12 SAE-12
16 SAE-16
O-ring Boss Ports

Bias Spring
06 60 psi spring
10 100 psi spring
15 150 psi spring

Relief Setting
Specify, for example:
10 1000 psi
25 2500 psi
* 3000 psi maximum

Coil Options
S Standard 12VDC lead wire
X Specify if other coil configurationis required

Appendix 1: Motor Specification Sheet

Operating speed letter code	Motor Speed	Motor voltage	Description	Where to use
12 VDC Motors				
A	< 1 sec	12 VDC	Basic motor, no electronic braking	For customers who provide their own closed loop control.
B	1.25 sec	12 VDC	Internal PWM speed control, no feedback	Soft start or on/off applications toggle switch control.
C	2.5 sec	12 VDC	Internal PWM speed control, no feedback	Soft start or on/off applications toggle switch control.
D	3.5 sec	12 VDC	Internal PWM speed control, no feedback	Soft start or on/off applications toggle switch control.
E	7 sec	12 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Quick" manual metering.
F	12 sec	12 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Normal" manual metering.
G	24 sec	12 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Fine" manual metering.
H	36 sec	12 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Extra fine" manual metering.
I	48 sec	12 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Extra fine" manual metering.
24 VDC motors				
J	1.25 sec	24 VDC	Internal PWM speed control, no feedback	Soft start or on/off applications toggle switch control.
K	2.5 sec	24 VDC	Internal PWM speed control, no feedback	Soft start or on/off applications toggle switch control.
L	3.5 sec	24 VDC	Internal PWM speed control, no feedback	Soft start or on/off applications toggle switch control.
M	7 sec	24 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Quick" manual metering.
N	12 sec	24 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Normal" manual metering.
O	24 sec	24 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Fine" manual metering.
P	36 sec	24 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Extra fine" manual metering.
Q	48 sec	24 VDC	Internal PWM speed control, no feedback	Toggle switch metering control, "Extra fine" manual metering.
Position Control				
S		12/24 VDC	2-10 volt postion control	Valve will adjust to your 2-10 volt input signal. No external driver card.
12 VDC MOTORS WITH POSITION FEEDBACK				
FB	0.9 sec	12 VDC	Motor with feedback for use with PEM-DMC controller card	When used with our PEM-DMC controller card it will adjust per your variable input command.

Appendix 2 Motorized Control Valve Options

Cable Length

Our standard cable length is 18 inches. To add additional cord length to your motorized flow control valve add the suffix: C__ (List the cable length in inches.) Omit if not required.

Example: F1015E**C80**10182 (Cable length is specified to 80 inches.)

Wire Connectors

We offer connectors crimped onto the end of our cords. We can do other styles of connectors for customers that require them. Consult factory. To add a standard connector to a motorized flow control add the suffix below.

WPT

Delphi Packard Weather-pack plug tower half. Pin lay out is for 2 pin connector: White wire to A terminal and Black wire to B terminal. Pin lay out for 6 pin connector: black #1 wire to A terminal, black #2 wire to B terminal, black #3 wire to C terminal, black #4 wire to D terminal, Green/yellow wire to E terminal and F terminal plugged. If ordered with a B-Q motor it will come with a 2 pin connector. If ordered with a FB motor it will come with a 6 pin connector.

WPS

Delphi Packard Weather-pack receptacle shroud half. Pin lay out is for 2 pin connector: White wire to A terminal and Black wire to B terminal. Pin lay out for 6 pin connector: black #1 wire to A terminal, black #2 wire to B terminal, black #3 wire to C terminal, black #4 wire to D terminal, Green/yellow wire to E terminal and F terminal plugged. If ordered with a B-Q motor it will come with a 2 pin connector. If ordered with a FB motor it will come with a 6 pin connector.

DT04

Deutsch connector, 2 pin receptacle. Pin layout is white wire to #1 terminal and black wire to #2 terminal.

DT06

Deutsch connector, 2 pin plug. Pin layout is white wire to #1 terminal and black wire to #2 terminal.

Example: F1015E**WPT**10182 (2 pin weather pack tower connector).

Special Flow Ranges

Valves can be supplied with different metering slots to fit special applications. Contact the factory for details and pricing.

Ordering Example F10 15 E C80 WPT 10182

F10 = Motorized flow control, 10-2 cavity size
15 = Gallons per minute at full open and 100 psi pressure differential.
E = Motor speed, 7 second full travel operating speed.
C80 = 80” cord length, 18 gauge cord.
WPT = Connector type
10182 = line body manifold

Motorized Control Valve Accessories

Double Pole- Double Throw Toggle Switch

- **44269** - Reversing metal toggle switch DPDP momentary ON-OFF-MOM ON
- **44214** - Toggle boot for toggle switches

Extension cable

- **SFP25657C-__FT** (List the cable length in feet). This extension cable is for use between our feedback motorized control valves and one of our control boxes. It includes WPT and WPS connectors on each end. The cable is housed in a abrasion resistant covering. This is to be used in conjunction with a WPT connector order on a feedback valve.

Seal kits - Replacement seal kits for the wet end (nose portion) of the motorized control valves

- **SFP25247** - Seal kit for the motorized flow control in the F10 size
- **SFP25148** - Seal kit for the motorized pressure control in the P10/PP10 size
- **SFP25674** - Seal kit for the motorized flow control in the F13A size
- **SFP25249** - Seal kit for the motorized flow control in the F16 size
- **SFP25675** - Seal kit for the motorized flow control in the F16A size
- **SFP25662** - Seal kit for the motorized flow control in the FPC16 size
- **SFP25673** - Seal kit for the motorized flow control in the F20 size

Special Seals / Material

- Optional Viton seals are available on special order.
- Stainless steel valves are suitable for use with water or other fluids and are also available on special order.

Specialty valves

- We take pride in innovation and creative solutions to meet customer needs. This catalog is only a sample of unique solutions that we have delivered. We can customize any one of these valves to best fit the customers needs.