

# F16

## Priority Flow Control Assembly With Relief & Unloading Valve



### 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 element.

### Operating Pressure

- 3000 PSI maximum.

### Flow Ranges

- 15 0-15 gpm
- 20 0-20 gpm
- 35 0-35 gpm
- 50 0-50 gpm
- Maximum 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

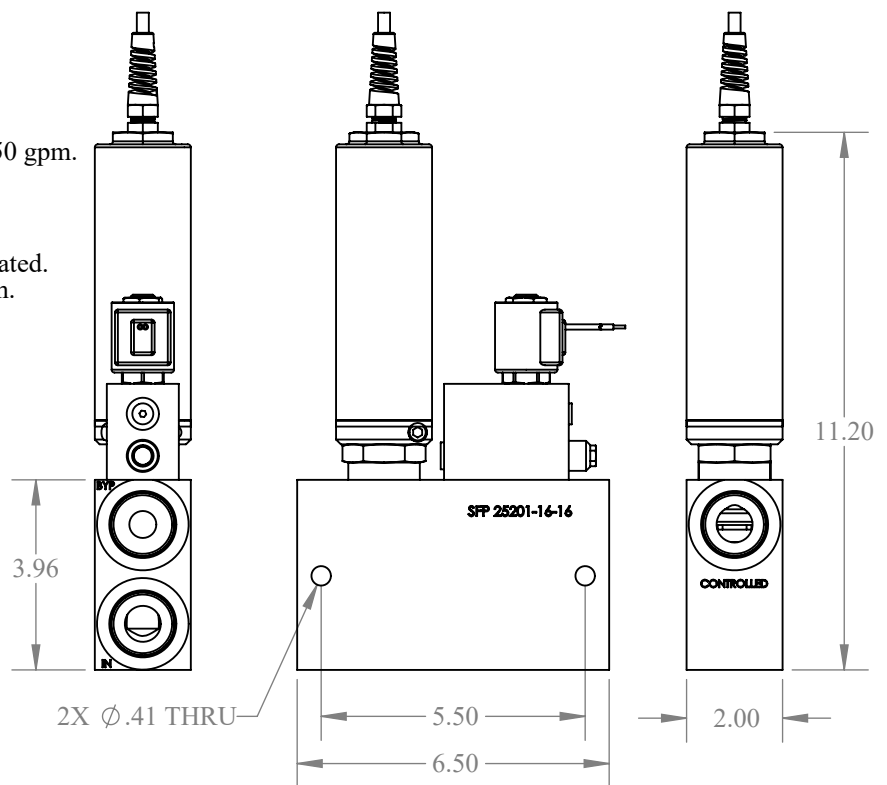
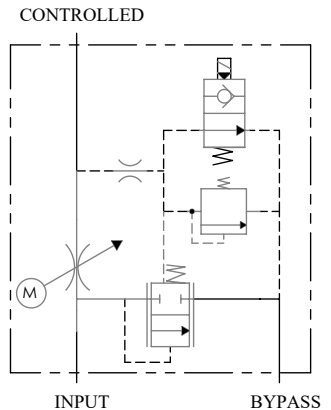
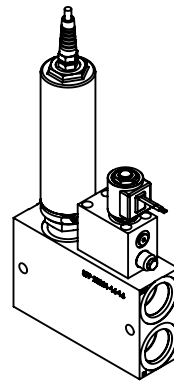
- (Only while adjusting)
- 0.8 amp at 12 VDC
  - 1.0 amp at 24 VDC

### Temperature Rating

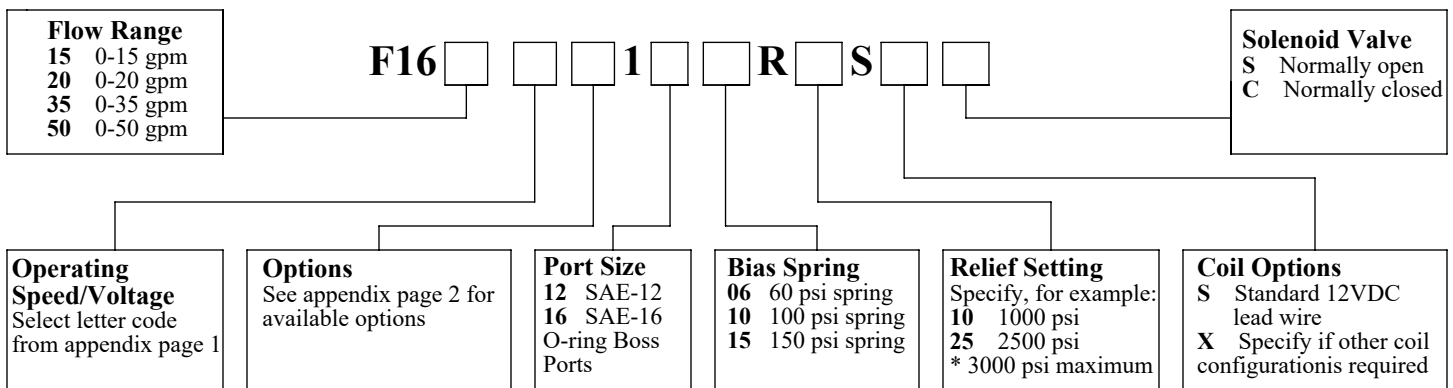
- -40 to 120°C

### Package Weight

- 8.7 lbs.



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



# 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 position 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.

OBSOLETE USE SERIES

## 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: F1015EC8010182 (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 or S 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 or S 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: F1015EWPT10182 (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

## 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 FB or S series 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 FB or S series 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.