

F16

Motorized Flow Control Valve



Function

- Motor driven, variable orifice, restrictive type, hydraulic flow control, non-pressure compensated. Pressure balanced, bi-directional flow.

Operating Pressure

- 3000 psi maximum differential
- Consult factory for higher operating pressures

Flow Ranges

Based on 100 PSI pressure differential with valve fully open. See pressure drop curves for additional application data

- 15 0-15 gpm (Equivalent to Ø.25" orifice at full open)
- 20 0-20 gpm (Equivalent to Ø.35" orifice at full open)
- 35 0-35 gpm (Equivalent to Ø.49" orifice at full open)
- 50 0-50 gpm (Equivalent to Ø.56" orifice at full open)
- Custom ranges are available upon request

Voltage

- 12 & 24 VDC

Construction

- Cage, body and spool: Steel, exposed parts plated
- Motor housing assembly: Anodized aluminum
- Standard line bodies are aluminum
- Steel bodies are available upon request

Seal Material

- Buna N and polyurethane standard
Viton optional

Current Draw

(only while adjusting)

- 0.8 amp when powered at 12 volts
- 1.0 amp when powered at 24 volts

Internal Leakage

- 5 cubic inch per minute per 1000 psi

Temperature

- -40 to 120°C

Operating Speed

- 1-48 seconds, See appendix page 1 for details

Cavity

- C 16-2 industry common cavity

Valve Installation Torque

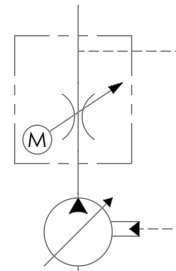
- 65 ft-lbs

Cartridge Weight

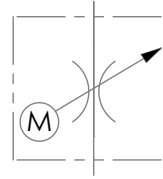
- F16 cartridge only = 3 lbs
- F16 with aluminum body = 5.8 lbs

Seal kit

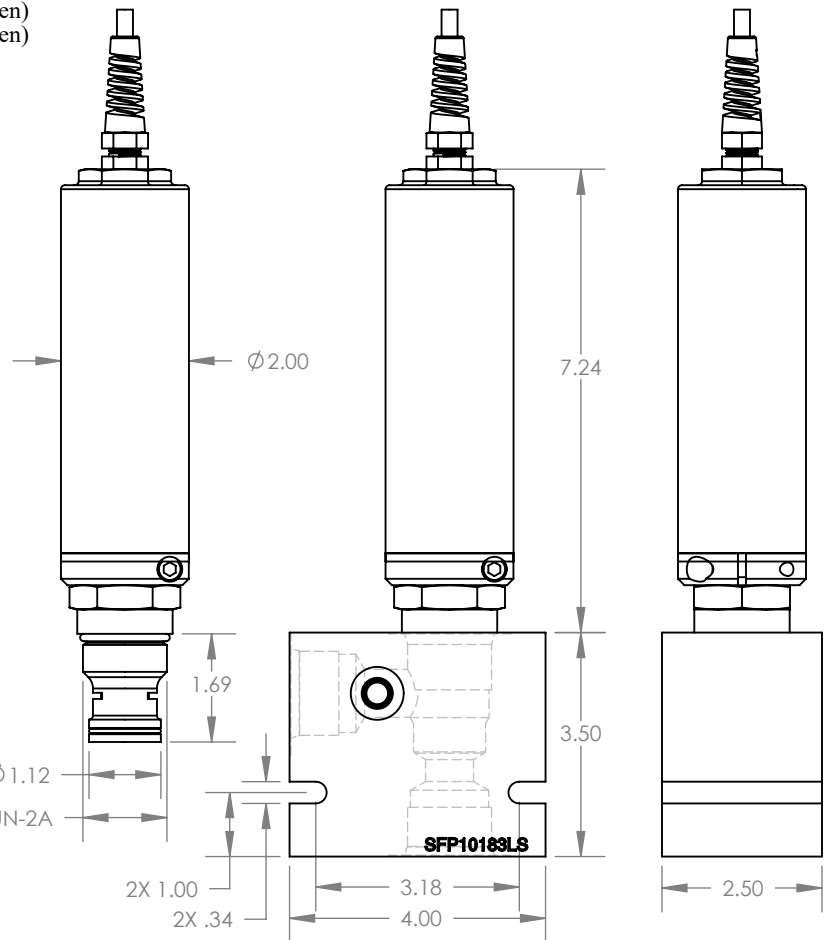
- SFP25249



Example Schematic with 10183LS Line Body.



Hydraulic Symbol



F16

Flow range:

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

Operating Speed/Voltage

Select letter code from appendix page 1.

Options:

See appendix page 2 for available options.

Line bodies:

- 10183 SAE-12 ports
- 10183LS SAE-16 ports and SAE-4 LS port

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.