

PROPORTIONAIR

FCV

ELECTRO-PNEUMATIC FLOW VALVE WITH INTEGRAL CLOSED LOOP POSITION FEEDBACK



Features

- **Integral Closed Loop Positioner**
- **Integral I/P**
- **0.3% Resolution**
- **Angled Seat Results in Maximum Cv**
- **Parabolic Valve Trim**
- **Heavy Duty 303 SS Valve Body**
- **Replaceable Seat and Trim**

FUNCTIONAL DESCRIPTION

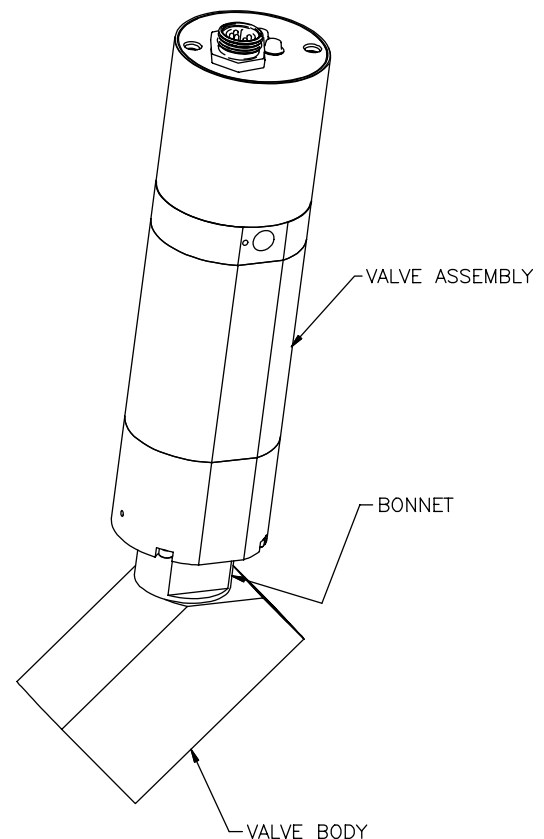
The Proportion-Air Electro-Pneumatic Proportional Flow Valve, FCV, employs a parabolic valve plug so that the area of valve opening is proportional to valve position.

For

example; if valve position is 50% of full stroke, Cv is 50% of maximum rating. Valve position is electronically closed loop controlled, with an LVDT that provides continuous feedback to the control module. LVDT and control module are integral to the valve actuator.

The FCV comes with a monitor output signal. This output is an electrical signal originating for the internal LVDT, 0-1" stroke. The output of this signal is field selectable, 0-10Vdc or 4-20mA.

The FCV valve features status indicating LEDs for power and TTL. The TTL signal is a conditional on/off signal to use for diagnostic purposes. When the valve is at position, within the deadband, the TTL is active low (0Vdc) and the green LED is ON.



GENERAL SPECIFICATIONS

SPECIFICATIONS

ELECTRICAL

| | |
|------------------------------|---|
| POWER REQUIREMENT _____ | 15-24 VDC |
| COMMAND SIGNAL _____ | Differential 4-20mA or 0-10Vdc (Field Selectable) |
| VALVE POSITION MONITOR _____ | 4-20mA sourcing or 0-10Vdc (Field Selectable) |
| FAILURE MODES _____ | Normally Closed and/or Hold to Last Position* |

MECHANICAL

| | |
|---------------------------------|--|
| MAXIMUM WORKING PRESSURE _____ | 250 PSIG (17.25 BAR) |
| ACTUATOR LOADING PRESSURE _____ | Minimum: 80 psig (5.5 bar), Maximum: 120 psig (8.25 bar) |
| VALVE Cv _____ | 19 |
| END CONNECTIONS _____ | 1" NPT Threaded |
| RESOLUTION _____ | 0.3% |
| MATERIALS _____ | Body – 303 SS; Trim - 316 SS with Reinforced PTFE Seals; Actuator - Aluminum Hard Coat Anodized |

PHYSICAL

| | |
|---------------------------------|------------------------|
| MEDIA WORKING TEMPERATURE _____ | Maximum: 356°F [180°C] |
| AMBIENT TEMPERATURE _____ | 32-158°F [0-70°C] |
| WEIGHT _____ | 10 lbs [4.5 Kg] |
| ACTUATOR HOUSING RATING _____ | NEMA 4X |

* On loss of DC electrical power, the unit will hold last position until air leakage causes the valve to move to its home position. On loss of pneumatic supply pressure, the valve will move to its home position.

DIMENSIONS

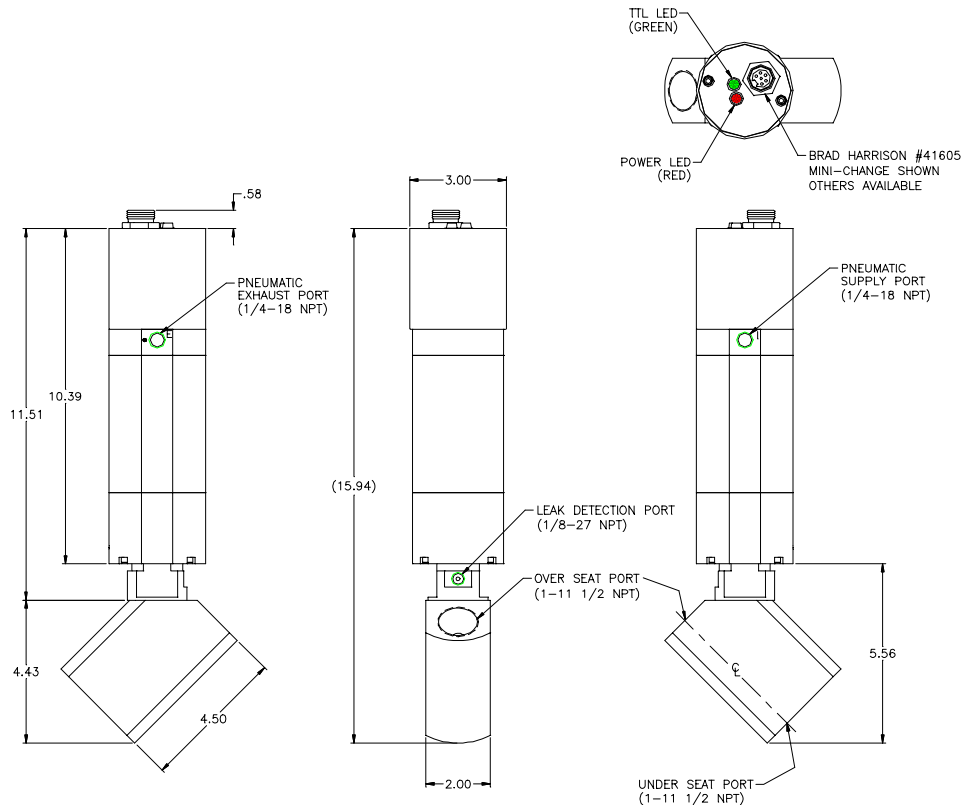


FIGURE 1

FCV CONNECTION PROCEDURE

Pneumatic Connections:

1. A typical 20 micron (minimum 40 micron) in-line filter is recommended on the pneumatic inlet port “I” of the FCV valve. (Figure 1)
2. Connect pneumatic supply pressure, 80 to 120 psig, to the inline filter on the “I” port. (Figure 1)
3. Install valve body in correct flow orientation. (Figure 2)
4. Tighten valve assembly down till bonnet is flush against valve body. (Figure 2)
5. Proceed with electrical connection.

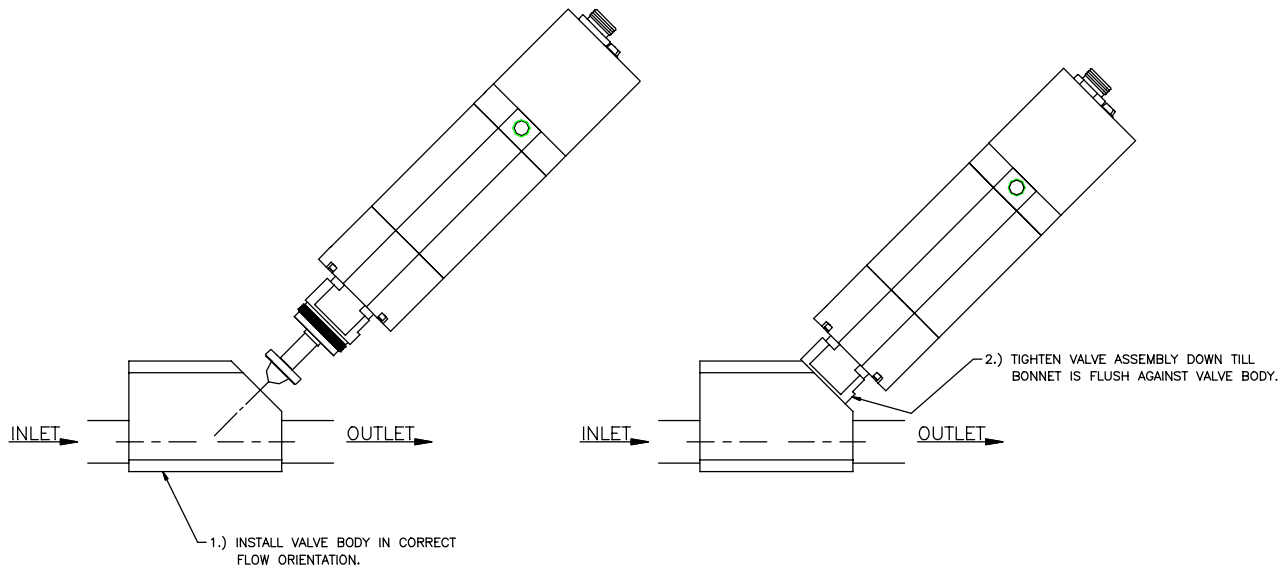


FIGURE 2

Electrical connections:

1. Ensure all power is off before making any electrical connections.
2. Figure 3 shows the location of the 6 pin electrical connector and figure 4 shows the connector. Table 1 identifies each connection
3. All valves come with a red LED light and a green LED light. The red light on the unit indicates power is supplied to the unit. Green light indicates the valve’s pressure status. A bright green glow indicates that desired position has been achieved.

Note: Both current and voltage command units require that both the command (+) and command (-) pins be connected.

**TABLE 1
FCV PIN DESIGNATORS**

| PIN | WIRE COLOR* | FUNCTION |
|-----|-------------|-----------------|
| 1 | WHITE | COMMAND (+) |
| 2 | RED | ANALOG OUTPUT |
| 3 | GREEN | DC COMMON |
| 4 | ORANGE | TTL OUT |
| 5 | BLACK | 15-24 VDC POWER |
| 6 | BLUE | COMMAND (-) |

* H6DC6 POWER CORD COLORS

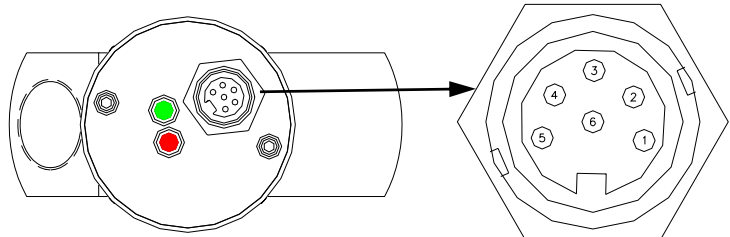
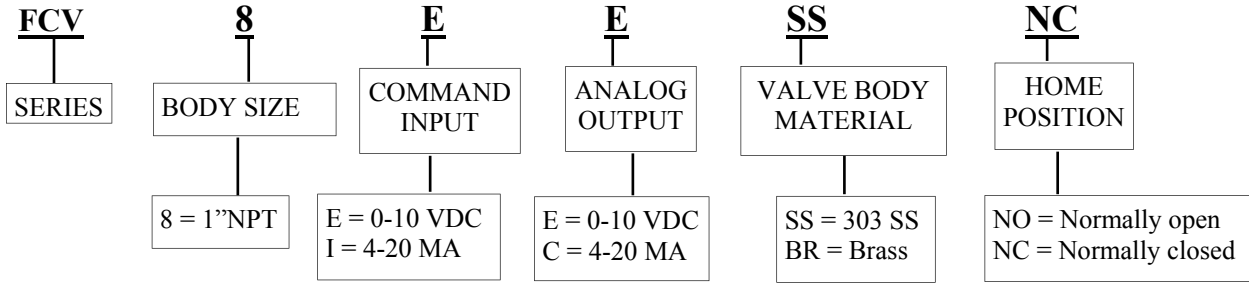


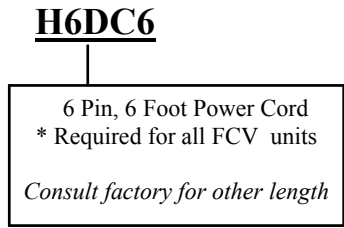
FIGURE 3

FIGURE 4

ORDERING INFORMATION



ACCESSORIES



WARRANTY

Proportion-Air products are warranted to the original purchaser only against defects in material or workmanship for one (1) year from the date of manufacture. The extent of Proportion-Air's liability under this warranty is limited to repair or replacement of the defective unit at Proportion-Air's option. Proportion-Air shall have no liability under this warranty where improper installation or filtration occurred.

All specifications are subject to change without notice. **THIS WARRANTY IS GIVEN IN LIEU OF, AND BUYER HEREBY EXPRESSLY WAIVES, WARRANTIES OR LIABILITIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY OBLIGATION OF PROPORTION-AIR WITH REGARD TO CONSEQUENTIAL DAMAGES, WARRANTIES OF MERCHANTABILITY, DESCRIPTION, AND FITNESS FOR A PARTICULAR PURPOSE.**

WARNING: Installation and use of this product should be under the supervision and control of properly qualified personnel in order to avoid the risk of injury or death.

PROPORTION-AIR, INC. BOX 218 MCCORDSVILLE, IN USA 46055

PHONE: (317)335-2602 FAX: (317)335-3853

web site: www.proportionair.com

email address: info@proportionair.com