

Model T7950 Analog Control
 Model T7950 DeviceNet™
 Communication



Features

The Model T7950 Series Electro-Pneumatic Transducers include the Model T7950 with Analog Output or Feedback Input and the Model T7950D with DeviceNet™ Communication.

The standard Model T7950 controls pressure in proportion to an analog electrical input signal. An internal feedback sensor monitors output pressure to achieve high accuracy.

The Model T7950D Transducer with DeviceNet™ Communications controls output pressure in response to a digital communication command.

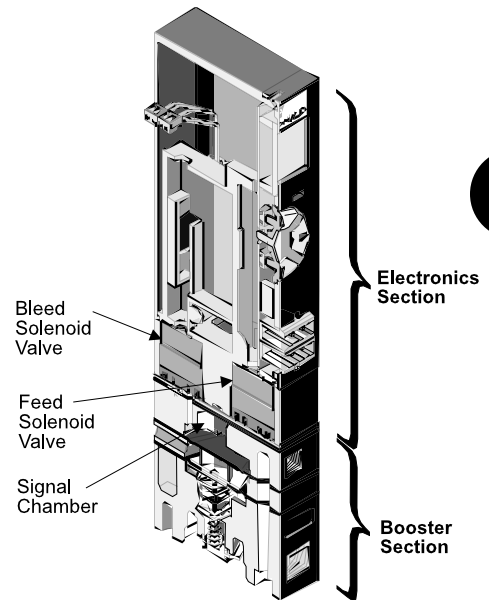
Common Features of the T7950 & T7950D

- RFI/EMI protection eliminates electromagnetic and radio interference.
- Output pressure displays in psig, BAR, kPa, or user-defined pressure units.
- Reverse acting capability for analog input and output signals.
- Select Current or Voltage mode for input signal or optional analog channels using the keypad.
- Independently adjustable PID tuning coefficients.
- Fully functional keypad and display.
- Backlit Liquid Crystal display screen.

Operating Principles

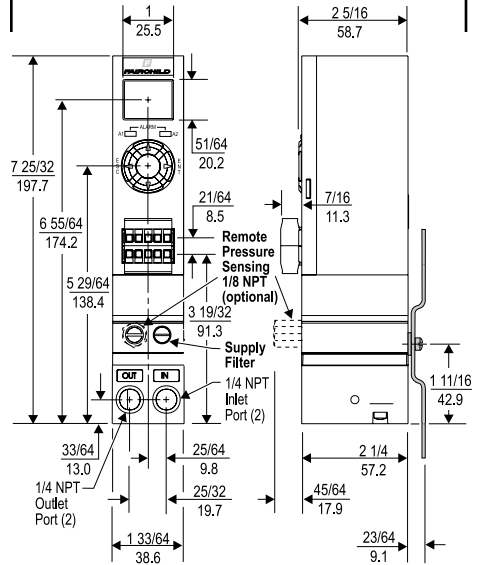
The Model T7950 Series Transducers have a closed-loop, integrated, microprocessor control system that regulates outlet pressure. You can control the output from the Model T7950 using the keypad or from an analog control signal. You can control the output from the Model T7950D using the keypad and through DeviceNet™ Communication network.

The Feed and Bleed Solenoid Valves control pressure in the Signal Chamber of the Booster Section. A pressure sensor measures the outlet pressure and provides a feedback signal to the Electronics Section. Any variation in pressure between the setpoint and the outlet pressure activates the Feed and Bleed Solenoid Valves to change the output pressure.

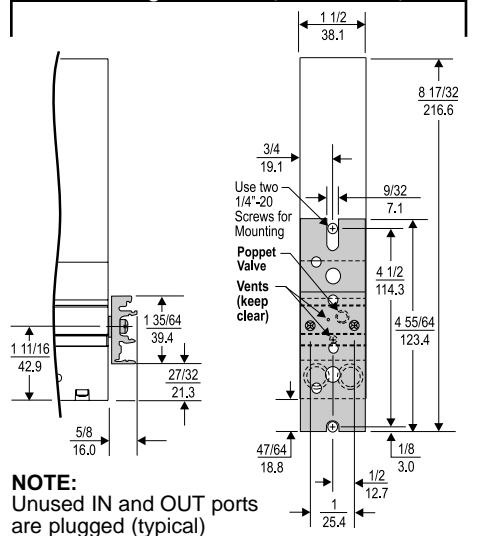


B
Model T7950

Shown with Mounting Kit 16799-1 (Included with unit)

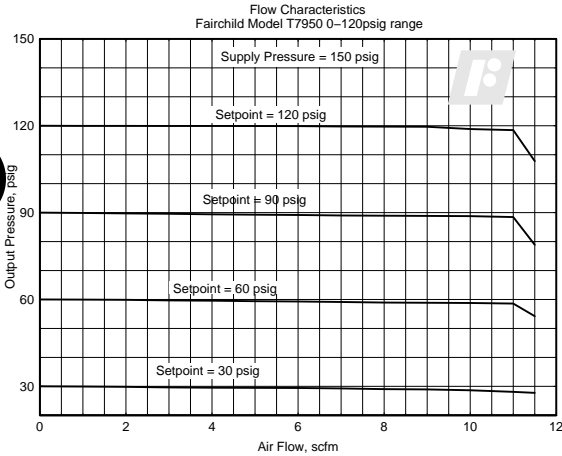


Shown with Din Rail Mounting Kit 16893 and Mounting Kit 16799-1 (Included with unit)



Model T7950 Electro-Pneumatic Transducer

Technical Information



Specifications

Supply Pressure¹

150 psig, [10 BAR], (1000 kPa) Maximum

Pneumatic Outputs

| | | | |
|--------|---------|---------|---------|
| psig: | 0-30 | 0-60 | 0-120 |
| [BAR]: | [0-2] | [0-4] | [0-8] |
| (kPa): | (0-200) | (0-400) | (0-800) |

Minimum Span

| | | | |
|--------|-------|-------|-------|
| psig: | 12 | 25 | 50 |
| [BAR]: | [0.8] | [1.5] | [3.0] |
| (kPa): | (80) | (150) | (300) |

Input Signal

4-20 mA, 0-10 VDC

Flow Rate (SCFM)

11.0 (18.7 m³/HR) @ 150 psig, [10 BAR], (1000 kPa) supply and midscale output.

Exhaust Flow (SCFM)

2 (3.4 m³/HR) downstream pressure @ 5 psig, [.35 BAR], (35 kPa) above 10 psig, [.70 BAR], (70 kPa) setpoint.

Air Consumption

0 @ steady state output with Deadband @ 1 % of Full Scale

Supply Pressure Effect

No Measurable Effect

Electrical Supply

24 VDC

Power Consumption

Less than 4 watts

Feedback Input Signal / Impedance

4-20 mA/246 ohms, 0-10 VDC/400 ohms

Analog Output Signal / Impedance

4-20 mA/500 ohms maximum, 0-10 VDC/400 ohms maximum

Deadband (ISA S51.1)

Adjustable from 0 to 10 % of Full Scale

Unit Accuracy (ISA S51.1)

Greater than 0.50% Full Scale

Frequency Response

-3 db @ 1 HZ per ISA S26.4.3.1 load Configuration A.

Vibration Effect

Less than 1 % of Span under the following conditions: 5-15 Hz @ 0.8 inches constant displacement 15-500 Hz @ 10 g's

RFI/EMI Effect

Less than 0.5%. EMC Directive 89/336/EEC European Norms EN-61326.

Temperature Range

0° F to + 160° F, (-18° C to + 71° C)

Materials of Construction

Booster BodyAluminum

CoverNylon Plastic

ElastomersFluorocarbon

¹ Supply Pressure must be no less than 10 psig, [0.70 BAR], (70 kPa) above maximum output.

Catalog Information

Catalog Number T7950

Input

0-10 VDC 0
4-20 mA 4
DeviceNet™ D

Output

0-30 psig 04
0-60 psig 05
0-120 psig 06
[0-2.0 BAR] 14
[0-4.0 BAR] 15
[0-8.0 BAR] 16
(0-200 kPa) 24
(0-400 kPa) 25
(0-800 kPa) 26

Pipe Size

1/4" NPT 02

Pipe Thread Type

NPT Thread O
BSPT Thread U

Option Type

No Option Board N
0-10 VDC Analog Output 0
4-20 MA Analog Output 4
0-10 VDC Feedback Input 5
4-20 MA Feedback Input 6

Option

External Pneumatic Feedback P

Unique Feature of the T7950D

- DeviceNet™ Communications that connect the Model T7950D to a digital network to increase functional flexibility, installation speed, and reduce system wiring cost.

Available Options for the T7950 Series Transducer

- Optional analog output channel configured as an output pressure monitor or as a user-defined output.
- External Pneumatic Feedback port to monitor downstream pressure.
- Optional Feedback Input Channel configurable to control setpoint, External process variable, or accept a user defined input.

Manifold Mounting

Optional manifolds are available to mount 3, 5, 10, or 15 Transducers. For more information about Manifold Mounting, see the *Fairchild Manifold and Rack Kit Catalog*, CS-4000MRKT.

Installation

For operating instructions, refer to the corresponding *Fairchild Model T7950 Electro-Pneumatic I/P, E/P Transducer Operation and Maintenance Instructions*, OM-5T7950FI, OM-5T7950AB, OM-5T7950AO, OM-5T7950DB, OM-5T7950DI, OM-5T7950DO.

For installation instructions, refer to the *Fairchild Model T7950 Electro-Pneumatic I/P, E/P Transducer Installation Instructions*, II-500T7950 and II-50T7950D.