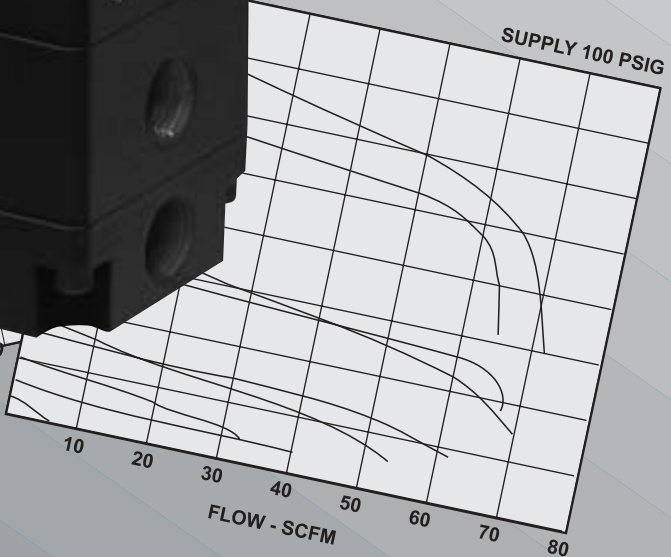
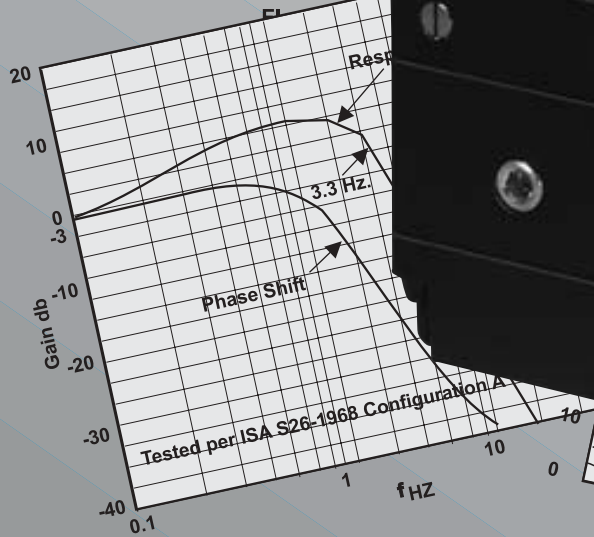
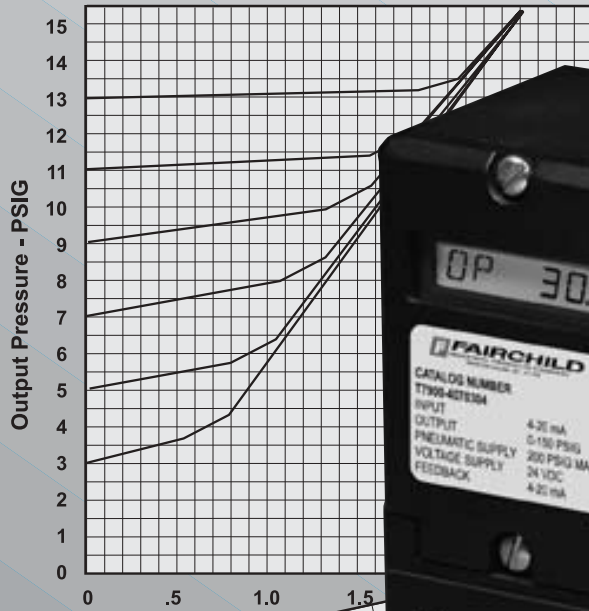


FAIRCHILD

ELECTRO-PNEUMATIC I/P, E/P TRANSDUCER

Model T7900



FAIRCHILD
INDUSTRIAL PRODUCTS COMPANY

CROSS SECTION

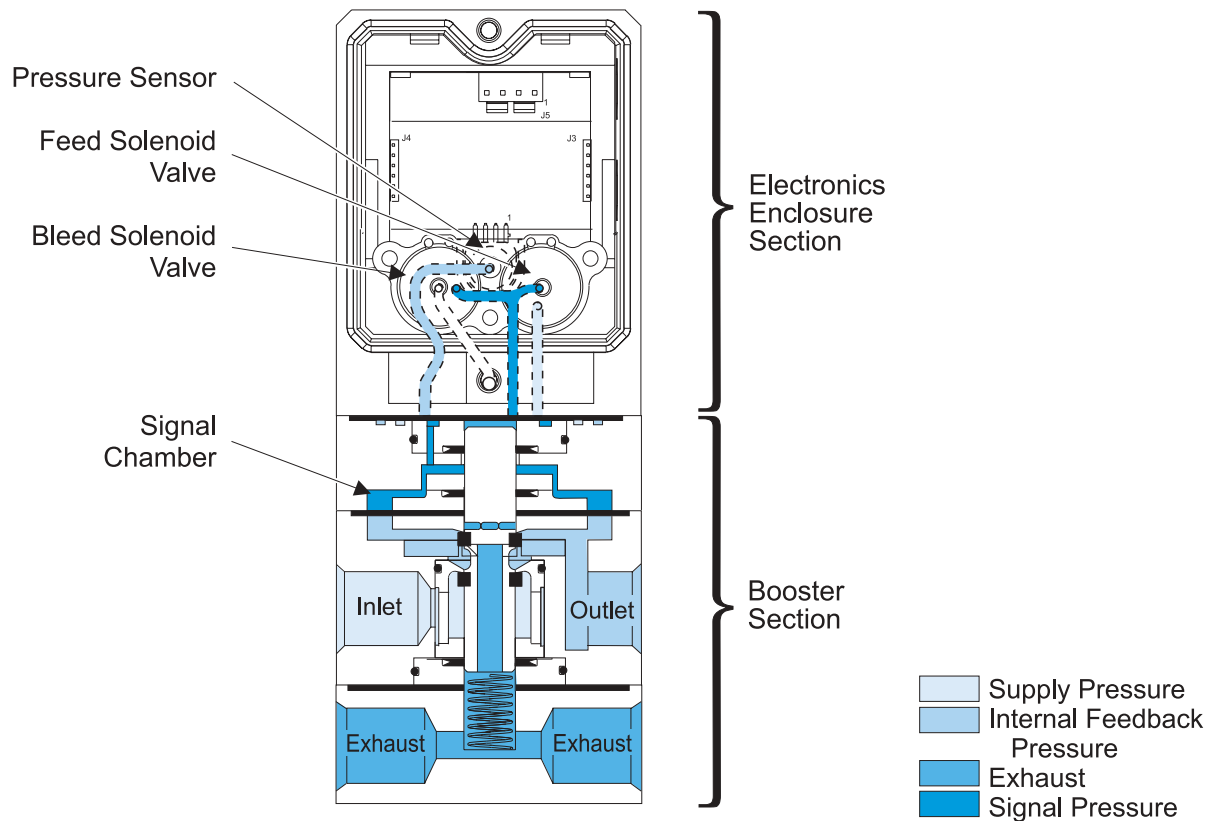


Figure 1. Model T7900 Detail Drawing

GENERAL INFORMATION

The Model T7900 I/P, E/P Electro-Pneumatic Transducer controls an output pressure in proportion to an analog electrical control signal. An internal feedback sensor monitors output pressure to achieve high accuracy. Model T7900 applications include machine tool automation and robotics.

The Model T7900 has the following features:

- RFI/EMI protection eliminates electromagnetic and radio interference.
- Output pressure displays in psig, BAR, or kPa.
- Reverse acting capability for input and feedback output signals
- Select Current or Voltage input signals using the keypad.
- Select Current or Voltage feedback output signal using the keypad.
- Independently adjustable PID tuning coefficients.
- Set operation parameters with the keypad.
- Liquid Crystal display screen.
- High and Low Alarm indicator lights.
- Backlit Liquid Crystal display screen.

The Model T7900 has the following options:

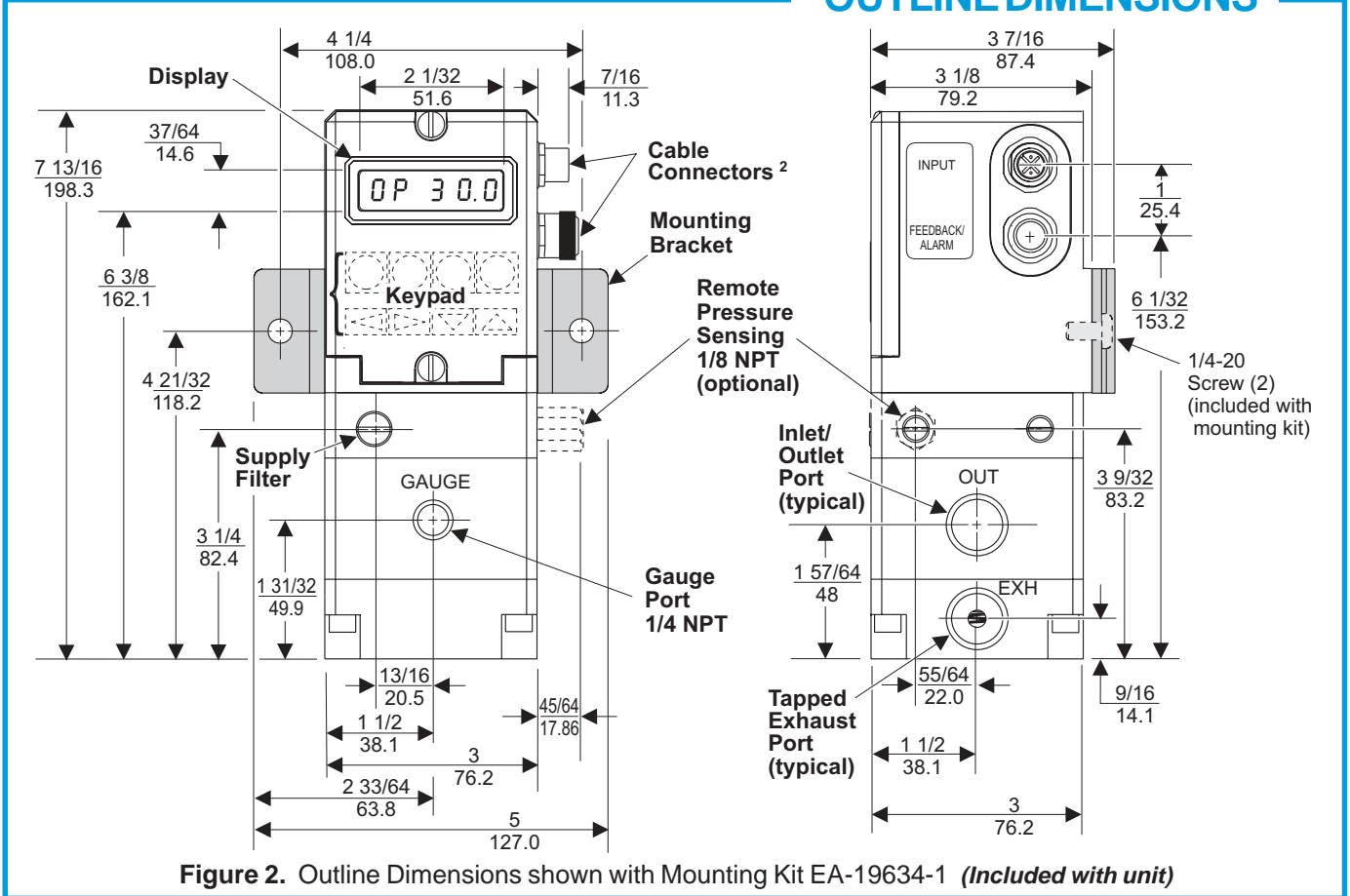
- Electronic Feedback Output closes the loop.
- External Pneumatic Feedback port is available.

OPERATING PRINCIPLES

The Model T7900 has a closed loop, integrated electronic control system that regulates outlet pressure in proportion to an electrical control signal.

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

OUTLINE DIMENSIONS



SPECIFICATIONS

FUNCTIONAL SPECIFICATIONS

Pneumatic Outputs [BAR] (kPa)	0-30 [0-2] (0-200)	0-75 [0-5] (0-500)	0-150 [0-10] (0-1000)
Input Signal	4-20 mA, 0-10 VDC		
Supply Pressure ¹	200 psig, [14 BAR], (1400 kPa) Max.		
Minimum Span [BAR] (kPa)	12 [0.8] (80)	30 [2.0] (200)	60 [4.0] (400)
Electrical Supply	24 VDC ± 10%		
Power Consump.	Less than 5 watts		
Analog Input Signal/Impedanc	4-20 mA/500 ohms maximum, 0-10 VDC/400 ohms minimum		
Air Consump. (SCFM)	0 @ steady state output		
Flow Rate (SCFM)	100 (17.0 m ³ /HR) @ 100 psig, [7 BAR], (700 kPa) supply @ 20 psig [1.5 BAR], (150 kPa) setpoint.		
Exhaust Flow (SCFM)	50 (85 m ³ /HR) @ 60 psig, [4 BAR], (350 kPa) downstream pressure @ 5 psig, [.35 BAR], (350 kPa) above setpt.		
Temp. Range	0° F to +160° F (-18° C to +71° C)		

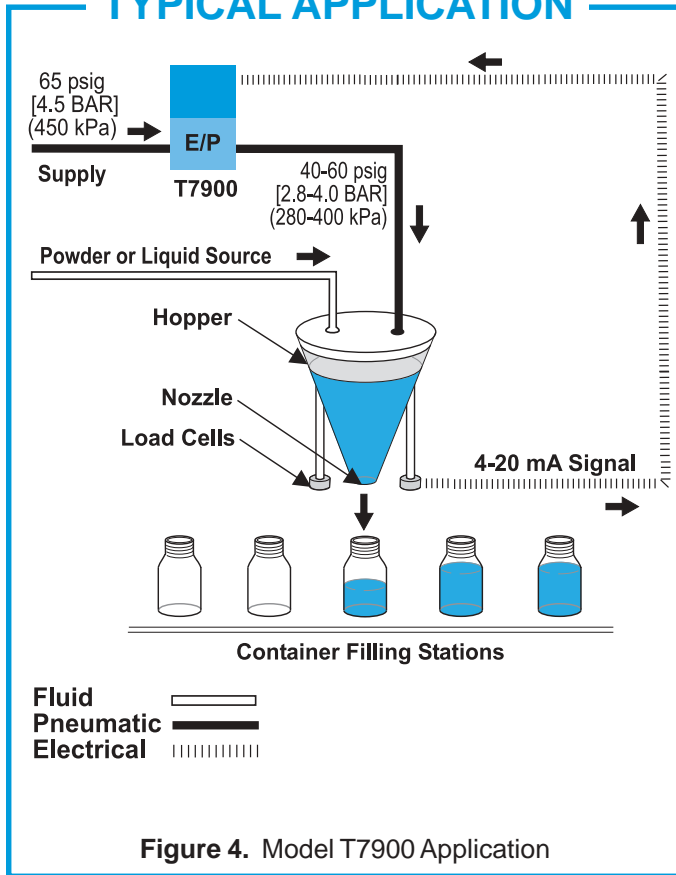
PERFORMANCE SPECIFICATIONS

Deadband (ISA S51.1)	Adjustable from 0 to 7% of Full Scale
Unit Accuracy (ISA S51.1)	Less than 0.50% Output Span
Frequency Response	-3 db @ 1 Hz per ISA S26.4.3.1 load configuration A.
Supply Pressure Effect	No Measurable Effect
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 50081-2 & EN 50082-2.
Materials of Construction	Body and Housing Chromate Treated Aluminum Cover and Pintle Acetal Plastic Trim Plated Steel Elastomers Fluorocarbon & Silicone Finish Epoxy

¹ Supply pressure must be no less than 5 psig, [0.35 BAR], (35 kPa), above maximum output.

² Connecting cables sold separately.

TYPICAL APPLICATION



TYPICAL APPLICATION

The Model T7900 transducer provides blanket air pressure to control the flow of powder (or liquid) in a Hopper. The T7900 output pressure in the Hopper maintains a constant flow rate into the containers as they fill. Load Cells continuously monitor the powder level in the Hopper and send a feedback signal to the T7900. The T7900 adjusts the pneumatic output to maintain a constant flow rate into the containers.

OPERATION

For operating instructions, see the *Model T7900 Electro-Pneumatic I/P, E/P Transducer (Feedback Output) Operation and Maintenance Instructions, OM-5T7900FO*.

ORDERING INFORMATION

Catalog Number T7900 -

Input

- 0-10 VDC (0)
- 4-20 mA (4)

Output

Select appropriate psig, [BAR], or (kPa) range.

- 0-30 psig (04)
- 0-75 psig (05)
- 0-150 psig (07)
- [0-2.0 BAR] (14)
- [0-5.0 BAR] (15)
- [0-10.0 BAR] (17)
- (0-200 kPa) (24)
- (0-500 kPa) (25)
- (0-1000 kPa) (27)

Pipe Size

- 1/4" (02)
- 3/8" (03)
- 1/2" (04)

Pipe Thread Type

- NPT Thread (O)
- BSPT Thread (U)
- BSPF Thread (H)

Feedback Type

- 0-10 VDC Feedback Output (0)
- 4-20 mA Feedback Output (4)

Option

- External Pneumatic Feedback (P)

T7900 Cables and Connectors (Sold Separately)

Part number	Description
055-IPI-089-M	Male connector (Feedback)
055-IPI-089-F	Female connector (Input)
032-IPI-009-3M	Male cable w/one connector (3 meter)
032-IPI-009-3F	Female cable w/one connector (3 meter)

INSTALLATION

For installation instructions, see the *Model T7900 Electro-Pneumatic I/P, E/P Transducer Installation Instructions, II-500T7900*.



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