

Model T5400 Digital-Pneumatic Transducer

B

Model T5400



Features

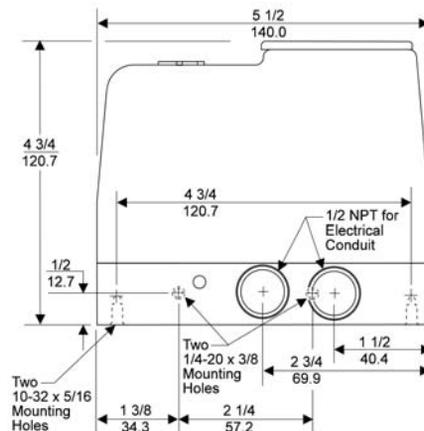
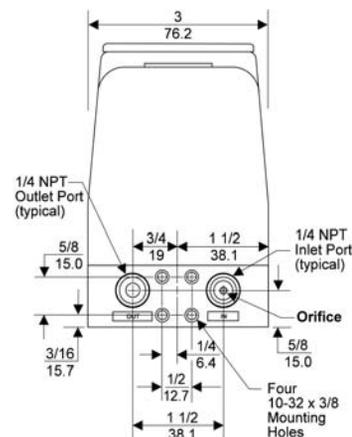
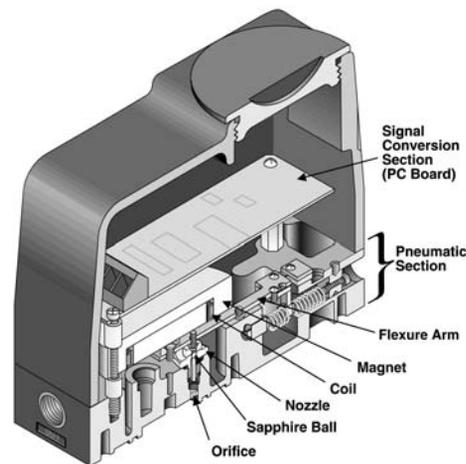
- Fail Safe High or Low will return the output to 3 psig for Direct Acting Mode or to 15 psig for Reverse Acting Mode if the power is lost, regardless of the logic selected.
- Field Reversible Feature provides output which is directly or inversely proportional to the input signal.
- 115 VAC, 230 VAC, and 24 VDC Power Options permit use with most power sources.
- Temperature Compensation provides stable operation during temperature changes.
- 5VDC or 15VDC Logic assures compatibility with most digital input systems.
- Vibration Resistance maintains set points, under adverse vibration conditions.
- Various Mounting Configurations allow installation flexibility for most applications.
- External Zero Adjustment provided for ease of calibration.

Operating Principles

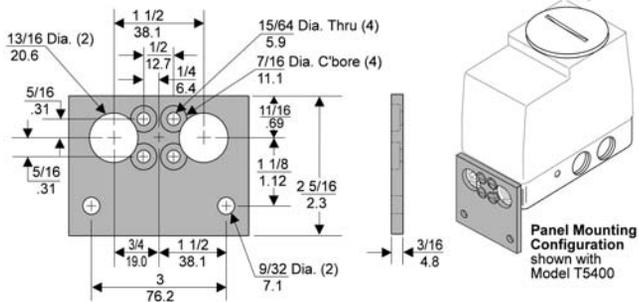
The T5400 Transducer is a digital-pneumatic device that provides a pneumatic output signal controlled by 8 bit digital data instructions from a central control room, a remote control location, or a local control station. This device is made up of two sections, the Signal Conversion Section and the Pneumatic Section.

The Signal Conversion Section (PC Board) accepts an 8 bit parallel wired digital signal. Full scale output is divided into 255 parts and the output level is based on the logic state (high or low) of the 8 bits. An enable line allows the unit to accept information from a parallel bus. The digital input signal is converted to an analog signal. The signal is then applied to a Coil which creates a magnetic force that moves a Flexure Arm.

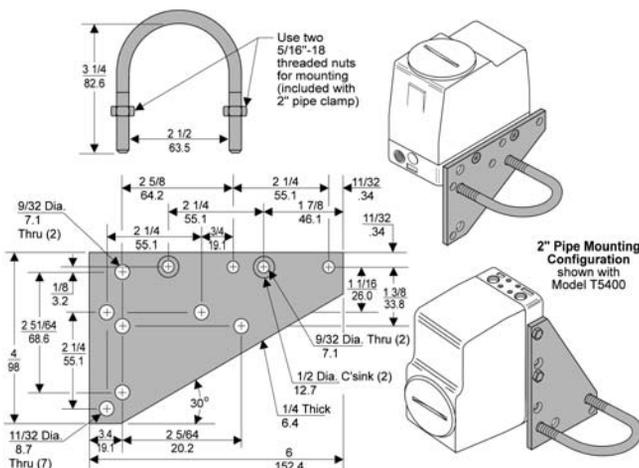
The Pneumatic Section operates as a force balance system. A Sapphire Ball floats inside a Nozzle and controls the output pressure by exhausting air supplied through an Orifice. This Sapphire Ball acts as a piston exerting a force which is balanced against the force of the Flexure arm.



Technical Information



Mounting Bracket: 15268



Mounting Bracket: 14596

Model T5400 Transducer Kits & Accessories

Mounting Bracket Kits.....15268 (sold separately)
14596 (sold separately)

Catalog Information

Catalog Number

T 5400

Option

Noise Suppression NS

Power

24 VDC - 3 Watts 24
115 VAC - 3 Watts 115
230 VAC - 3 Watts 230

Output

psig 0
[BAR] 1
(kPa) 2



Installation

For Installation Instructions, refer to the Fairchild *Model T5400 Digital-Pneumatic Transducer Installation, Operation and Maintenance Instructions, IS-500T5400*.

Specifications

Supply Pressure

20 ± 2 psig, [1.5 ± 0.15 BAR], (150 ± 15 kPa)

Output Capacity (SCFM)

0.15 (0.26 m³/HR) Maximum

Air Consumption (SCFM)

0.16 (0.27 m³/HR) Maximum

Output Range

3-15 psig, [0.2-1.0 BAR], (20-100 kPa)

Supply Pressure Effect

1% of Span for a 2 psig, [0.14 BAR], (14 kPa) supply change

Voltage Requirement

115/230 VAC ± 10% 50-60 Hz, 24 VDC ± 10%

Input Data¹

8 Bit Parallel, 1 Bit Enable (TTL or CMOS compatible)

Terminal Based Linearity

± 0.50% Full Scale

Independent Linearity

± 0.25% Full Scale

Resolution

0.4% of Span

Hysteresis

Within 0.2% Full Scale

Repeatability

Within 0.2% Full Scale

Sinking Current

5 VDC Logic – 0.5 mA per Bit, 15 VDC Logic – 1.5 mA per Bit

Ambient Temperature

-40° F to +150° F, (-40° C to +65.5° C)

Materials of Construction

Body and Housing Aluminum
Ball and Orifice Sapphire
Nozzle Stainless Steel

¹ Data must be on line 0.5 microseconds before enable strobe and 0.5 microseconds during enable period to start output pressure change.