

# Model T5400 Digital-Pneumatic Transducer

**B**

**Model T5400**



## Features

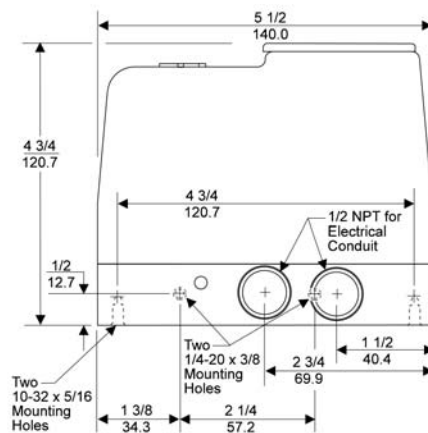
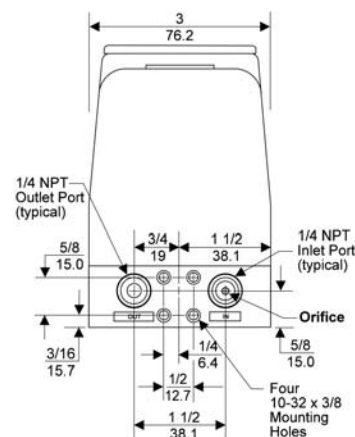
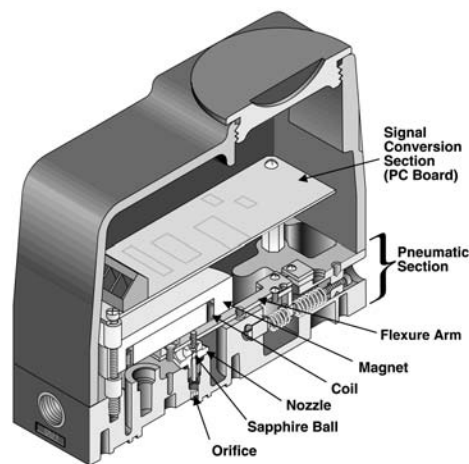
- Fail Safe High or Low will return the output to 3 psig for Direct Acting Mode or to 15 psig for Reverse Acting Mode if the power is lost, regardless of the logic selected.
- Field Reversible Feature provides output which is directly or inversely proportional to the input signal.
- 115 VAC, 230 VAC, 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

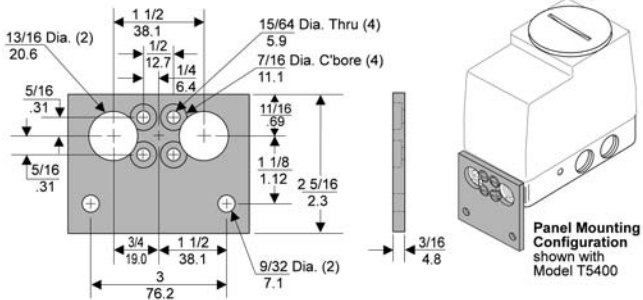
The T5400 Transducer is a digital-pneumatic device that provides a pneumatic output signal controlled by 8 bit digital data instructions from a central control room, a remote control location, or a local control station. This device is made up of two sections, the Signal Conversion Section and the Pneumatic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

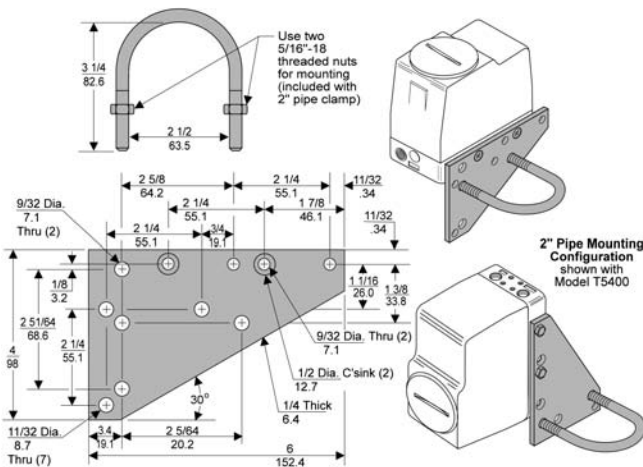
The Pneumatic Section operates as a force balance system. A Sapphire Ball floats inside a Nozzle and controls the output pressure by exhausting air supplied through an Orifice. This Sapphire Ball acts as a piston exerting a force which is balanced against the force of the Flexure arm.



## Technical Information



Mounting Bracket: 15268



Mounting Bracket: 14596

## Model T5400 Transducer Kits & Accessories

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

## Catalog Information

<b>Catalog Number</b>	T	<input type="checkbox"/> 5400	<input type="checkbox"/>	<input type="checkbox"/>
<b>Option</b>				
Noise Suppression .....	NS			
<b>Power</b>				
24 VDC - 3 Watts .....			24	
115 VAC - 3 Watts .....			115	
230 VAC - 3 Watts .....			230	
<b>Output</b>				
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 m<sup>3</sup>/HR) Maximum
- Air Consumption (SCFM)**  
0.16 (0.27 m<sup>3</sup>/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 Data<sup>1</sup>**  
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

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