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

Catalog Information

Catalog Number: T 5400

Option
Noise Suppression: NS

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

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 Data
- 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

Noise Suppression: NS

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

Model T5400 Digital-Pneumatic Transducer

Installation

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