Features

- Fast Response to Input Signal changes results in faster loop control and savings in process materials.
- Minimal Air Consumption allows use in systems where operating gas is expensive.
- Five Input Signal Ranges meet most process and machine requirements.
- Temperature Compensation provides stable operation during temperature changes.
- Compact Size permits use in space restricted areas.
- Vibration Resistance maintains set points under adverse vibration conditions.
- Various Mounting Configurations allow installation flexibility for most applications.
- NEMA 3R Enclosure available for outdoor and indoor installations.

Operating Principles

The T5200 Transducer is an electro-pneumatic device that is controlled by a 4-20 mA current in a control loop. This device is made up of two sections, the Signal Conversion Section and the Pneumatic Section.

The Signal Conversion Section (PC Board) accepts a 4-20 mA current from the control loop. This signal current is 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.
## Hazardous Area Specifications

<table>
<thead>
<tr>
<th>Factory Mutual (FM) Approvals</th>
<th>Explosion-Proof</th>
<th>Intrinsically Safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFXPD5200</td>
<td>Class I, Division 1, Groups B, C and D; Class II, Division 1, Groups E, F, and G; Maximum Ambient 65° C.</td>
<td>TF15200</td>
</tr>
<tr>
<td>TFXPDI5200</td>
<td>Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class III, Division 1, Fibers; NEMA 3R Enclosure. (Upright Position ONLY)</td>
<td>TFN5200</td>
</tr>
<tr>
<td>TFN5200</td>
<td>NEMA 4X Enclosure.</td>
<td><strong>Entity Parameters</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Voc</strong> = 40 VDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Isc</strong> = 125 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>La</strong> = 0 mH</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Ca</strong> = 0 F</td>
</tr>
</tbody>
</table>

**Entity Parameters**

- Voc: Open Circuit Voltage
- Isc: Short Circuit Voltage
- La: External Inductance
- Ca: External Capacitance

**Approvals are valid when connected through a Shunt Zener Diode Safety Barrier meeting the following parametric requirements:**

- Rated: 28V Maximum 300 Ohm Minimum

**Canadian Standards Association (CSA) Approvals**

- TCI5200 | Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Type 3 Enclosure; Rated 1-5 mA, 4-20 mA, 10-50 mA, 1-5 VDC, 1-9 VDC; Temperature Code T4A.
Model T5200 Electro-Pneumatic I/P, E/P Transducer

Mounting Kits

Catalog Information

Catalog Number: T5200
Underwriting Group:
Canadian Standard: C
Factory Mutual: F
Approval Class:
Explosion-Proof: XPD
NEMA 4X/IP65: N
Intrinsically Safe: I

Input
1-5 mA
4-20 mA
10-50 mA
1-5 VDC
1-9 VDC

Output
psig
[BAR]
(kPa)

Options
Valve Mount: V

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
+ 0.3% of Span for a 1 psig, [0.1 BAR], (10 kPa) supply change

Impedance / Input Signal

<table>
<thead>
<tr>
<th>Input</th>
<th>OHMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 mA</td>
<td>2000</td>
</tr>
<tr>
<td>4-20 mA</td>
<td>120</td>
</tr>
<tr>
<td>10-50 mA</td>
<td>50</td>
</tr>
<tr>
<td>1-5 VDC</td>
<td>2550</td>
</tr>
<tr>
<td>1-9 VDC</td>
<td>375</td>
</tr>
</tbody>
</table>

Shock & Vibration Effect
Negligible up to 2 g's between 5 Hz and 200 Hz

Terminal Based Linearity
+ 0.50% Full Scale

Independent Linearity
+ 0.25% Full Scale

Temperature Coefficient
Less than 1% of Span / 50° F (10° C)

Hysteresis
Within 0.1% Full Scale

Frequency Response
-3 dB @ 20 Hz (unloaded)

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

Materials of Construction
Body and Housing: Aluminum
Ball and Orifice: Sapphire, Brass
Nozzle: Stainless Steel

Installation
For Installation Instructions, refer to the Fairchild T5200 Series Electro-Pneumatic Transducer Installation, Operation and Maintenance, IS-500T5200.

Model T5200 Transducer Kits & Accessories

Mounting Bracket Kits: 15268 (sold separately)
14596 (sold separately)
14140 (sold separately)

1 Factory Mutual Approval Only.
2 Intrinsically Safe Units cannot be set for Reverse Acting Mode in field.
3 Units shipped calibrated 4-20 mA; 10-50 mA units must be calibrated in field.

1 Add 332 OHMS for CSA Units.