

**Engineered for  
High Performance  
Even in the  
Toughest  
Environments  
Air or Gas Media**

When your application demands precision pressure and flow control in a tough, moist environment, you can rely on Fairchild's new TXI7850 line of Electro-Pneumatic transducers. Through improved design, the TXI7850 is engineered for both moisture and vibration resistant performance in an Explosion-proof NEMA 4X package.

Specify a TXI7850 to solve your application problems.

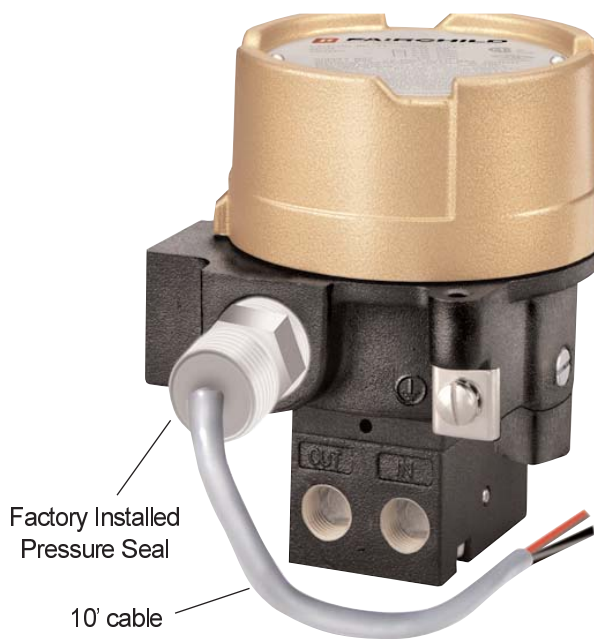
Contact your local distributor or Fairchild's Application support Team today at (336) 659-3400 to discuss the Model TXI7850 and our complete line of precise and reliable process and control products for both Air and Natural gas media.

**Model TXI7850 Moisture Resistant Electro-Pneumatic Transducer**



*Fairchild's new TXI7850 Transducer features internally protected critical performance components, specifically designed to make these units moisture and vibration resistant for high performance in rough service.*

*The TXI7850 is NEMA 4X Rated and provides versatility and durability for your precision indoor or outside Electro-Pneumatic applications.*



Unit shown: Natural Gas Approved TXI7850-401-EN



(ATEX Approval-Pending)



## Specifications

		SET POINT			
		3 [0.2] (20)	9 [0.6] (60)	15 [1.0] (100)	30 [2.0] (200)
Maximum Air Consumption All Ranges	SCFH	3.5 (.10 m <sup>3</sup> /HR)	7.0 (.20 m <sup>3</sup> /HR)	9.5 (.27 m <sup>3</sup> /HR)	13.5 (.38 m <sup>3</sup> /HR)
Flow Rate (SCFM)		2.5 (4.25 m <sup>3</sup> /HR) @ 25 psig, [1.7 BAR], (170 kPa) supply & 9 psig, [0.6 BAR], (60 kPa) Output		OR	9.0 (15.3 m <sup>3</sup> /HR) @ 120 psig, [8.0 BAR], (800 kPa) supply & 9 psig, [0.6 BAR], (60 kPa) Output
Temperature Range (ISA S51.1)	Operating Storage	-40°F to +160°F (-40°C to +71.2°C) -40°F to +180°F (-40°C to +82.2°C)			
Span/Zero Adjustments		Screwdriver adjustments located under cover			
		OUTPUT RANGE			
		3-15 [0.2-1.0] (20-100)	3-27 [0.2-1.8] (20-180)	6-30 [0.4-2.0] (40-200)	
Input Range		4-20 mA			
Supply Pressure <sup>1,2</sup>		20-120 [1.5-8.0] (150-800)	32-120 [2.2-8.0] (220-800)	35-120 [2.4-8.0] (240-800)	
Minimum Span		5 [0.35] (35)	10 [0.7] (70)	10 [0.7] (70)	
Frequency Response		-3 db @ 5 Hz per ISA S26.4.3.1 load configuration A.			
Required Operating Voltages		7.2 VDC @ 20 mA (4-20 mA signal)			
Accuracy (ISA S51.1)		0.25% Full Scale Guaranteed 0.15% Full Scale Typical			
Hysteresis (ISA S51.1)		≤ 0.1% Full Scale			
Deadband		≤ 0.02% Full Scale			
Repeatability (ISA S51.1)		≤ 0.1% Full Scale			
Position Effect		No Measurable Effect			
Vibration Effect		Less than ±1% of Span under the following conditions: 5-15 Hz @ 0.75 inches constant displacement 15-500 Hz @ 10 Gs.			
Reverse Polarity Protection		No damage occurs from reversal of normal supply current (4-20 mA) or from misapplication of up to 60 mA.			
RFI/EMI Effect		Less than 0.5% of span @ 30 <sup>v</sup> /m class 3 Band ABC (20-1000 mHz) per SAMA PMC 33.1 1978 and less than 0.5% of Span @ 10 <sup>v</sup> /m level, to 2 GHz Band per EN 61000-4-3:1998 +A1 EMC Directive 89/336/EEC European Norms EN 61326			
Supply Pressure Effect		No Measurable Effect			
Temperature Effect		[±0.5% +0.04% / °F Temperature Change] of Span typical			
Materials of Construction		Body and Housing .....Chromate Treated Aluminum Orifice .....Aluminum & Sapphire Trim .....Stainless Steel & Zinc Plated Steel Elastomers .....Nitrile Finish .....Epoxy Powder Coating			

<sup>1</sup> Supply Pressure must be no less than 5 psig, [0.35 BAR], (35 kPa), above maximum output.

<sup>2</sup> Atex Approved unit 40 psig, [2.8 BAR], (280 kPa). Atex Approved unit with "N" option 120 psig, [8.0 BAR], (800 kPa) for Air or Group IIA gases.

## TXI7850 Features

- Explosion-proof NEMA 4X, IP65, Type 4 enclosure for outdoor and indoor installations.
- Optional tapped exhaust port vents exhaust gas.
- Canadian Registration Numbers (CRN) certification for all territories and provinces.
- Does not contain copper-based metals.
- Compact size for use in restricted areas.
- Internal electronic feedback maintains precise output pressure control.
- Piezoelectric actuator disk provides stability regardless of vibration or position.
- RFI/EMI protection eliminates susceptibility to electromagnetic interference.
- Optional version approved for use with Natural Gas or Industrial Methane as a supply media.

## HAZARDOUS AREA Classifications

### Factory Mutual (FM) Approvals



#### Explosion-Proof:

##### Air as supply pressure media

Class I, Division 1, Groups B, C and D;  
Class II, Division 1, Groups E, F and G;  
Class III, Division 1, Fibers;  
Class I, Division 2, Groups A, B, C and D;  
NEMA 4X Enclosure;  
Max. Ambient 65°C; Temperature Code T5.

##### Explosion-Proof: Group D gases, including Natural Gas as supply pressure media

Class I, Division 1, Groups C and D;  
Class II, Division 1, Groups E, F and G;  
Class I, Division 2, Groups A, B, C and D;  
Class II, Division 2, Groups E, F and G.

#### Intrinsically Safe:

##### Air as supply pressure media

Class I, Division I, Groups C and D;  
Class II, Division 1, Groups E, F and G;  
Class III, Division 1; Fibers;  
NEMA 4X Enclosure;  
Max. Ambient 65°C; Temperature Code T4.

#### Entity Parameters

$V_{max}^1 = 30 \text{ VDC}$ $I_{max}^2 = 200 \text{ mA}$	$C_i^3 = 0 \mu\text{F}$ $L_i^4 = 0 \text{ mH}$
<sup>1</sup> $V_{max} = \text{Max. Voltage}$ <sup>2</sup> $I_{max} = \text{Max. Current}$	<sup>3</sup> $C_i = \text{Capacitance}$ <sup>4</sup> $L_i = \text{Inductance}$

### Canadian Standards Association (CSA) Approvals



#### Explosion-Proof:

##### Air as supply pressure media

Class I, Division 1, Groups B, C and D;  
Class II, Division 1, Groups E, F and G;  
Class I, Division 2, Groups A, B, C and D;  
Class II, Division 2, Groups E, F and G.  
Type 4X Enclosure; Temperature Code T5;  
Max. Ambient 65°C.

##### Explosion-Proof: Group D gases, including Natural Gas as supply pressure media

Class I, Division 1, Groups C and D;  
Class II, Division 1, Groups E, F and G;  
Class I, Division 2, Groups A, B, C and D.  
Class II, Division 2, Groups E, F and G.

#### Factory Sealed

#### Intrinsically Safe:

##### Air as supply pressure media

Class I, Division 1, Groups C and D;  
Class II, Division 1, Groups E, F and G;  
Type 4X Enclosure; Temperature Code T4;  
Rated 4-20 mA, 30 VDC maximum.

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

System Type 1:	Single Channel Polarized Rated: 28.5V Max. 300 Ohm Min.
System Type 2:	Dual Channel Polarized Rated 28.5V Max. 300 Ohm Min. and 28V Diode return per channel
System Type 3:	Dual Channel Polarized Rated: 28.5V Max. 300 Ohm Min. and 10V Max. 50 Ohm Min.

### Explosive Atmospheres Directive (ATEX) Approvals \*

#### \* Transducer Parameters

$U_{max}^1 = 28 \text{ V}$ <sup>1</sup> $U_{max} = \text{Max. Voltage}$	$I_{max}^2 = 100 \text{ mA}$ <sup>2</sup> $I_{max} = \text{Max. Current}$
$P_i^3 = 0.7 \text{ W}$ <sup>3</sup> $P_i = \text{Max. Power}$	$C_i^4 = 0$ <sup>4</sup> $C_i = \text{Capacitance}$
	$L_i^5 = 0$ <sup>5</sup> $L_i = \text{Inductance}$

#### Flame-Proof:

##### Air as supply pressure media

$\text{Ex}$  II 2 GD  
EEx d IIB + H<sub>2</sub>, T5 (-20°C to +65°C) Ambient;  
IP65 Enclosure.

##### Flame-Proof: Group IIA gases, including Natural Gas as supply pressure media

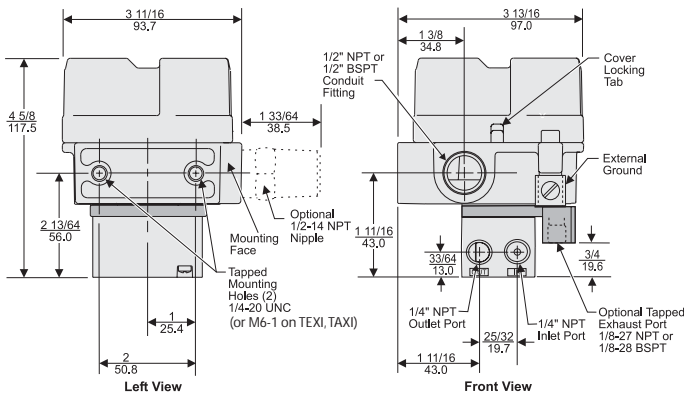
$\text{Ex}$  II 2 GD  
EEx d IIB, T5 (-20°C to +65°C) Ambient;  
IP65 Enclosure.

#### Intrinsically Safe:

##### Air as supply pressure media

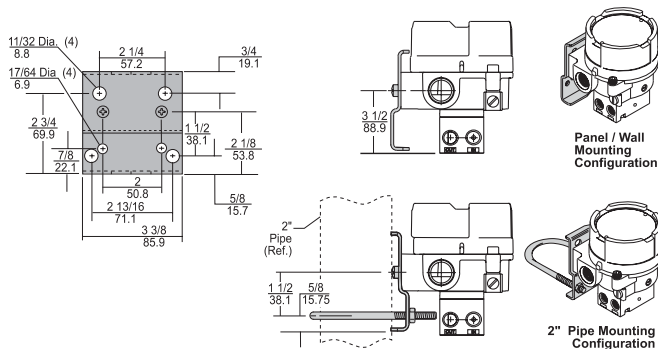
$\text{Ex}$  II 1 G (T4) II1D (T 85°C)  
EEx ia IIB, T4 (-20°C to +72°C) Ambient;  
IP65 Enclosure.

## Outline Dimensions



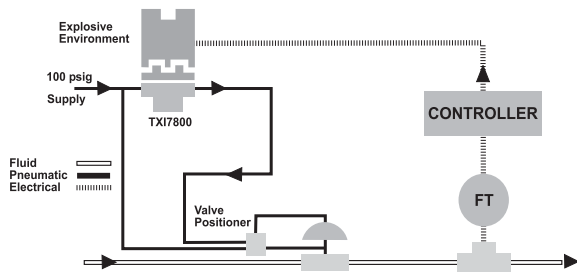
## Mounting Kit

Part Number: 19021-1: TCXI7850, TFXI7850 (sold separately)  
 Part Number: 19021-2: TEXI7850, TAXI7850 (sold separately)



## Typical Application

In a process control application, the Model TXI7850 Explosion-proof transducer converts an electric current input signal from a Controller to a pneumatic output signal for a Valve Positioner.



## Catalog Information

<b>Catalog Number</b>	T	X I 7850	4																																						
<b>Underwriting Group</b>	<table border="1"> <tr> <td>SAA</td> <td>A</td> </tr> <tr> <td>Canadian Standard</td> <td>C</td> </tr> <tr> <td>ATEX</td> <td>E</td> </tr> <tr> <td>Factory Mutual</td> <td>F</td> </tr> </table>					SAA	A	Canadian Standard	C	ATEX	E	Factory Mutual	F																												
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<sup>1</sup> Not approved for Intrinsically Safe.

<sup>2</sup> Tapped Exhaust option required.

<sup>3</sup> Available for ATEX and SAA only. NOT available with "N" Option.

<sup>4</sup> Consult Factory for details and availability.

## Installation

For installation instructions, see the *Fairchild Model TXI7850 Explosion-proof Electro-pneumatic Transducer Installation, Installation Instructions, II-5TXI7850*.

For operation and maintenance instructions, see the *Fairchild Model TXI7850 Explosion-proof Electro-pneumatic Transducer Operation and Maintenance Instructions, OM-5TXI7850*.



ISO 9001:2000  
 FM NO. 25571

ISO 9001:2000  
 Certified



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 Litho in USA