

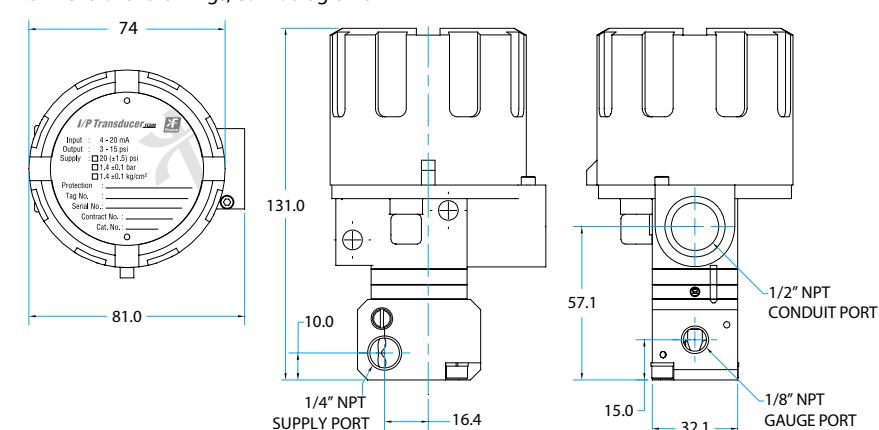
# Transducers series FC600

## ► Explosion Proof (I/P - E/P) Current / Voltage to Pressure

### ► Specifications

Functional	P Connection (with Flow Booster)	M & N Connection (without Flow Booster)
Input	4-20 mA Dc	
Outputs	3-15 psig 0.20-1.0 BAR 3-27 psig 0.20-1.8 BAR 6-30 psig 0.40-2.0 BAR	
Air Consumption (BAR)	0.1 scfm (0.17m <sup>3</sup> /hr)	2.00 scfh (0.06 m <sup>3</sup> /hr) @ 20 psig supply (1.4 BAR) 4.94 scfh (0.14 m <sup>3</sup> /hr) @ 85 psig supply (6.0 BAR) 8.36 scfh (0.24 m <sup>3</sup> /hr) @ 150 psig supply (10.0 BAR)
Supply Pressure	3-15 : 22 psig (1.5 BAR) max	
Note: Supply pressure must be a minimum of 5 psig (0.3 BAR) above maximum output	3-27, 6-30: 42 psig (2.8 BAR) max	150 psig (10.0 BAR) max.
Flow Capacity	2.4 scfm (4.1 m <sup>3</sup> /hr) max.	Same as Air Consumption
Temperature Limits	-67°F to 185°F (-55°C to 85°C)	
Relative Humidity	75% average - 95% short time non-condensing	
Impedance	260 Ohms ± 5% @ 70°F	
Loop Load	5.2 Volts @ 70°F	
<b>Performance</b>		
Linearity (Independent)	<±0.5% of span	
Hysteresis	<±0.3% of span	
Deadband	<±0.1% of span	
Repeatability	<±0.3% of span; <±0.15% of span typical	
Mounting Orientation Effect	<±0.5% / 90 degree change	
Air Supply Sensitivity	<.3% / 1.5 (0.10 BAR) psig change	<±0.6% / 25 (1.72 BAR) psig change
Vibration Effect	<±1% up to 10g and 20-80 Hz	
Temperature Effect	<±0.75% / 10°F (5.6°C) change	
<b>Physical</b>		
Housing	NEMA 4X (IP 65)	
Port Sizes	Pneumatic : 1/4" NPT (P & N versions); 1/16" manifold mount (M version) 1/8" NPT Gauge Port (P version)	
Media	Electric : 1/2" NPT, M20-1.5 (ATEX)	
Electrical Connections	Clean, dry, oil-free, instrument air, filtered to 40 micron	
Mounting	Terminal block	
Materials	Direct (standard) or 2" pipe (optional) Housing : Chromate-treated aluminum with epoxy paint. NEMA 4X (IP65) Elastomers : Buna-N	

### ► Dimensional drawings, conn. diagrams



### Ordering Information

Use this coding system to order



Options  
K ATEX

Input Signal  
A 4-20mA

Connection  
M Manifold Mount without Booster  
N 1/4" NPT Port without Booster  
P 1/4" NPT Port with Booster

Output Pressure  
C 3-15 psig  
D 3-27 psig  
E 6-30 psig

Accessories  
Optional - 2" Pipe mounting Bracket kit.  
PG 13.5 cable gland or thread M20 x 1.5 or thread 1/2 NPT (depending on Stainless steel housing unit as add-on module for OEM applica-



Subject to Revision - Printed in India

Intrinsically Safe /Explosion Proof  
The Flucon-FC600 series has been tested and approved by CMRI, Dhanbad, India, FM, CSA for intrinsically safe Class I, II, and III, gas Groups A, B, C, D, E, F, & G when used with an apparatus meeting the entity requirements as mentioned hereunder.

Entity Parameters :  
Vmax = 40VDC Ci = 0 uF  
I max = 150mA Li = 0 mH  
Li is inductance

Explosion Proof :  
Class I, Div. 1, Groups A, B, C & D  
Enclosure Nema 4X (IP65)  
Temp. Code T6

Installation should be done in accordance with Flucon interconnection drawing. This drawing is included in the Flucon-600FC series installation, operation and maintenance manual. The intrinsically safe NEMA 4X (IP65) approval is a standard feature of the Flucon-FC600 series and applies only to units with a 4-20 mA input signal that are installed with the following barriers.

Barriers: Groups  
Leeds & Northrups C&D  
P/N. 316569 & 316747  
R. Stahl, Inc. C&D  
P/N. 8901/33-293/000/79  
9001/01-280-100-10  
9002/13-280-110-00  
MTL, Inc.  
P/N. 728, 787S, 4045



### ► Description

The Flucon FC600 Explosionproof I/P (current to pressure) transducer converts a 4-20mA electrical current signal to a proportionally linear pneumatic output. The unique conversion technology utilizing open loop control provides a high level of accuracy and repeatability for the operation of actuated valves. A low mass control circuit provides consistent output in high vibration applications. This compact unit is housed in an explosion proof enclosure that is designed for pipe, bracket or direct manifold mounting. This explosion-proof and intrinsically safe field device is available with an integral volume booster or as a low-flow signal converter that directly mounts to a pneumatic valve positioner.

### Principle of Operation

The input current flows through the coil thereby magnetizing the soft-iron yoke. The flux lines of this system being exposed at the gap apply a force proportional to the input signal on the permanent magnet which is made from a highly coercive metal.

The small magnet together with the flapper forms the moving parts, controlling the air pressure at the nozzle, which is proportional to the magnetic force. The air flowing from the nozzle forms a restoring force balanced by the force applied to the magnet.

The nozzle is supplied with air through a throttle. And back pressure through power amplifier gives proportional output. The described units are properly matched, Hence, a linear correspondence of electric input and pneumatic output signals is achieved.

The direction of action of the converter is determined by the coil polarization.

Zero adjustment is made by twisting the tensioning band, on which the flapper is mounted.

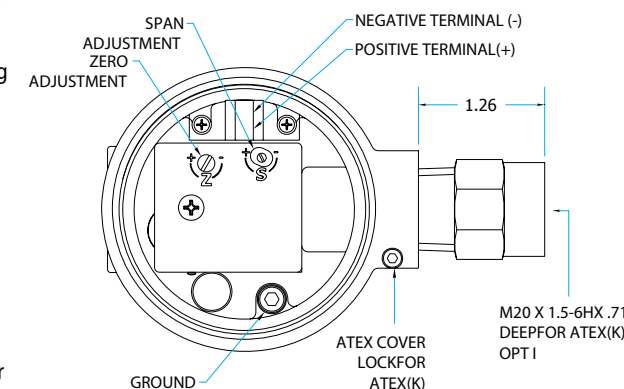
Range adjustment is performed using the potentiometer connected with a resistor in parallel to the coil.

### Mounting

The Flucon 600 FC series transducers can be pipe, panel or bracket mounted in any position. Position other than vertical will require recalibration of the zero

### ► Integrated Characteristics

- Compact Design.
- Low Air Consumption.
- Low Power Consumption.
- Integral Volume Booster.
- Flexible Adjustments of Zero & Span.
- Standard Process Inputs.
- Vibration and Position Insensitive. Unit can be mounted in any plane and is stable in high vibration environment.
- Safety Approvals : Factory Mutual (FM), Canadian Standard Association(CSA) and ATEX.



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