



ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model 851 Pressure Transmitter

DESCRIPTION

The Model 851 is designed for years of stable performance in even the toughest environmental and media conditions, such as refineries, petrochemical facilities, paper and pulp plants, and waste water treatment facilities. Approvals include ratings for CSA, for both intrinsic safety and explosion-proof, and FM for explosion-proof only. The Model 851 also meets NACE standards for offshore applications. A one year warranty is standard with every unit.

The small size and light weight of the Model 851 transmitter eliminates the need for complicated mounting hardware and mechanical supports, thereby reducing installation time substantially. The in-line connection permits simple field wiring without the need for additional hardware, adding to the speed and ease of installation. Its slim profile allows for mounting in places too tight for most other transmitters.

A 4-20 mA output is standard with a 12-40 VDC power supply. The Model 851 is bench adjustable, allowing for calibration of zero and span. With the cover seal, double O-ring assembly, this transmitter is weather proof and capable of direct spray/clean-in-place applications.

FEATURES

- A miniature, low-priced full-featured transmitter – just 1 lb. (450 grams)
- All welded 316 stainless steel construction and wetted parts (no aluminum)
- Ranges from 0-3 psig (0.2 bar) through 0-5000 psig (345 bar)
- ±0.25% accuracy
- Zero and span adjustability
- Full 5:1 range turndown
- FM for explosion-proof; CSA for explosion-proof and intrinsic safety
- 4-20 mA output at 12-40 VDC
- Watertight cable or conduit connection optional
- 1/2 inch NPT female process connection or flush mount version
- Straight in-line construction for a slim profile
- 24 inch (61cm) cable standard
- Flush version for viscous media or media with solids



**Model 851
Flushmount**

**Model 851T
with conduit
adapter for
EX rating**

**Model 851
Standard
with I.S.
rating**



Model 851 Flushmount – with welded coupling in pipe for viscous media, slurries, or applications where paraffin wax may build inside. Sensor can be easily removed to allow diaphragm steam cleaning as needed.



ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model 851 Pressure Transmitter

SPECIFICATIONS

Service: Liquid, gas or vapor

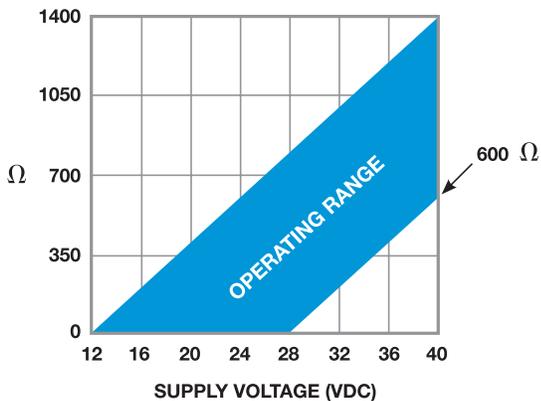
Range Limits:

- 0-3 to 0-6 psi (0-0.2 to 0-0.4 bar)
- 3-15 psi (0.2-1.0 bar)
- 0-6 to 0-15 psi (0-0.4 to 0-1.0 bar)
- 0-15 to 0-30 psi (0-1.0 to 0-2.1 bar)
- 0-20 to 0-100 psi (0-1.4 to 0-6.9 bar)
- 0-60 to 0-300 psi (0-4.0 to 0-20.7 bar)
- 0-200 to 0-1000 psi (0-14.0 to 0-69.0 bar)
- 0-600 to 0-3000 psi (0-40.0 to 0-206.9 bar)
- 0-1000 to 0-5000 psi (0-70.0 to 0-344.8 bar)

Output: 4 to 20 mA DC, limited to 30 mA DC

Power Supply: 12 to 40 VDC with reverse polarity protection

Loop Resistance: 1400 ohms maximum at 40 volts



Turndown: 5:1

Zero Adjust: ±10%

Span Adjust: ±10%

Temperature Ranges:

Ambient Operating:

- FM Explosion-proof: -40° to 180°F (-40° to 82°C)
- CSA Intrinsically Safe T3C: -40° to 140°F (-40° to 60°C)
- CSA Explosion-proof: -40° to 180°F (-40° to 82°C)

Process Interface: -40° to 212°F (-40° to 100°C)

Storage: -40° to 212°F (-40° to 100°C)

Overrange: 300% upper range limit

Humidity Limits: 0 to 100% RH

Performance Specifications

Accuracy: ±0.25% of calibrated span including linearity, hysteresis and repeatability (BFSL)

Response Time: Time constant of 20 milliseconds

Stability: ±0.5% of upper range limit for six months

Temperature Effect (Includes Zero and Span):

- Compensated: -20° to 180°F (-29° to 82°C)
- Between 30° and 130°F (-1° and 54°C): ±1% of URL per 50°F (28°C)
- Between -20° and 180°F (-29° and 82°C): ±1.6% of URL per 50°F (28°C)

Power Supply Effect: ±0.005% full scale per volt

Surge Protection: Standard

Vibration Effect: ±0.1% of upper range limit for 3 G to 200 Hz

Position Effect: Zero shifts up to 0.01 psi

Overrange Effects: ±0.15% full scale per 200% of maximum range

Physical Specifications

Materials of Construction:

- Process Wetted Parts:** 316 stainless steel
- Diaphragm (Models 851F):** Hastelloy C
- Non-Wetted Parts:** 316 stainless steel; VITON O-ring
- Fill Fluid:** DC 200 silicone (standard)
- Process Connection:** Reference model code
- Electrical Connection:** Reference model code
- Weight:** 1 lb. (450 grams)
- Cable Length:** 24 inch (61cm), 22 AWG

Classifications

Factory Mutual:

Explosion-proof for Class I, II, III Division I, Groups C, D, E, G, for hazardous locations. NEMA 4 Enclosure. Conduit seal must be within 18 inches of transmitter.

Canadian Standards Association:

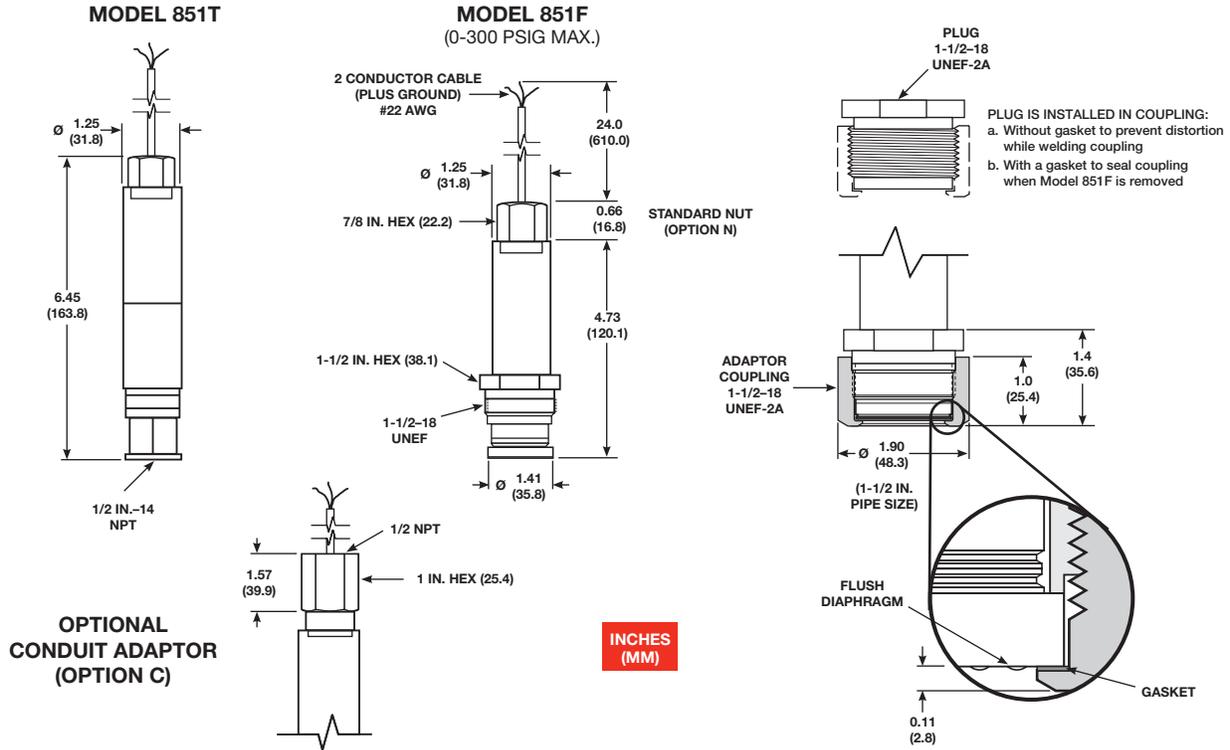
Exia-Intrinsically safe for Class I, Division I & 2, Groups A, B, C, D; Class II, Groups E, F, G when connected per AMETEK Dwg. BK750483. Temperature code T3C.

Explosion-proof for Class I, Division 1, Groups B, C, D; Class II, Groups E, F, G; Class III for hazardous locations. Enclosure 4.

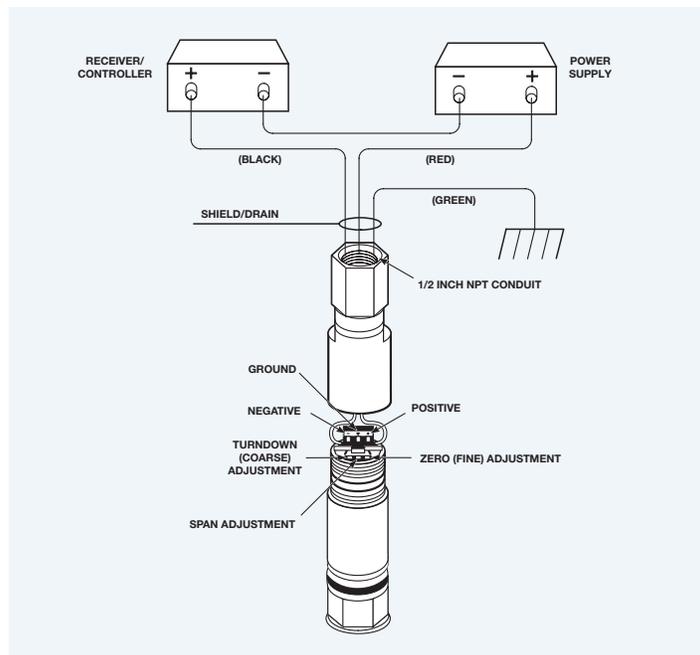


ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model 851 Pressure Transmitter



Typical Wiring Diagram





ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model 851 Pressure Transmitter

| Model Numbering: | |
|---|---|
| ● 851 Electronic Pressure Transmitter | |
| 851 | Pressure transmitter |
| ● Process connection | |
| T | 1/2 inch NPT |
| F | Flush ¹ (Adapter coupling must be welded to process piping, must be HASTELLOY) |
| ● Pressure type | |
| G | Gauge |
| A | Absolute |
| V | Vacuum |
| C | Compound |
| ● Pressure ranges | |
| 3015 | 3 to 15 psi (0.2 to 1 bar) |
| 0006 | 0/3 to 0/6 psi (0/0.2 to 0/0.4 bar) <i>Consult factory</i> |
| 0015 | 0/6 to 0/15 psi (0/0.4 to 0/1 bar) |
| 0030 | 0/6 to 0/30 psi (0/0.4 to 0/2.1 bar) |
| 0100 | 0/20 to 0/100 psi (0/1.4 to 0/6.9 bar) |
| 0300 | 0/60 to 0/300 psi (0/4 to 0/20.7 bar) |
| 1000 | 0/200 to 0/1000 psi (0/14 to 0/69.0 bar) |
| 3000 | 0/600 to 0/3000 psi (0/40 to 206.9 bar) |
| 5000 | 0/1000 to 0/5000 psi (0/70 to 0/344.8 bar) |
| ● Electrical connection | |
| N | Standard nut/cable ³ |
| C | 1/2 inch NPT female conduit connection/cable* (<i>required for explosion proof</i>) |
| ● Diaphragm | |
| L | 316L stainless steel |
| H | HASTELLOY C276 |
| ● Fill | |
| S | Silicone |
| M | Mineral oil |
| ● Agency approval | |
| A | Factory Mutual (FM), Canadian Standard Association (CSA) <i>For explosion-proof (FM, CSA) and intrinsically safe (CSA)²</i> |
| C | Canadian Standard Association (CSA) intrinsically safe |
| ● Coupling (flush only) | |
| S | 316L stainless steel coupling; TEFLON gasket |
| P | 316L stainless steel plug, coupling; TEFLON gasket |
| N | No coupling; TEFLON gasket |
| ● Calibrated range (<i>calibrated at maximum range if not specified</i>) | |
| 851 | T G 0015 C L S A S (0-15 PSI) |

1. Flush connection only available up to 300 psi (20 bar)
 2. Explosion-proof approval requires "C" electrical connection option
 3. Not available with agency approval "A", FM/CSA explosion-proof
 * Cable length is 24 inch (22 AWG) standard