

# ROSEMOUNT SPECIFICATIONS

## Model 2088 Absolute and Gage Pressure Transmitter

### 1. EQUIPMENT DESCRIPTION

- Two-wire, microprocessor-based absolute or gage pressure transmitter with analog or digital (smart) output.
- Small, lightweight design (2 lb [0.9 kg]) which allows for optional mounting bracket use.
- Modular electronics incorporating replaceable circuitry.

### 2. REFERENCES

- Material supplied under this specification shall be in conformance with:
  - National Electrical Code (NFPA 70) 501-5 by incorporating a two-compartment electronics housing for separation of the process medium and the electrical conduit.
  - National Electrical Manufacturer's Association (NEMA) standard number classification ICS6 "Enclosure for industrial controls and systems," 4X.
  - Factory Mutual (FM), Canadian Standards Association (CSA), CENELEC, SAA standards for explosion-proof enclosure and intrinsically safe electronic circuitry.
  - Japanese Industrial Standard (JIS) for explosion-proof enclosure.
- Manufacturer must be certified as meeting the requirements of ISO 9001.

### 3. ENVIRONMENTAL CONDITIONS

- The instrument selected shall be suitable for the following conditions:
  - Humidity: 0 to 100% relative humidity.
  - Ambient temperature limits: -40 to 185 °F (-40 to 85 °C).
- Transmitter shall have a dual-compartment housing with a moisture barrier totally isolating the electronic circuitry from the field wiring and calibration terminals.

### 4. PROCESS CONDITIONS

- Suitable for liquid, gas, and vapor service.
- Process temperature limits: -40 to 250 °F (-40 to 121 °C).
- Pressure limits: minimum of twice the upper range limit of the transmitter.

### 5. ELECTRICAL

- Transmitter shall be certified for use in hazardous areas by a recognized authority such as Factory Mutual.
- Electrical connections shall be ½-14 NPT, CM 20 or PG 13.5 conduit.
- Transmitter to be factory sealed; conduit seal not required to meet FM explosion-proof requirements.

### 6. POWER SUPPLY

- Transmitter shall operate on 10.5 to 36 V dc with no load (6-14 V dc for low power).

### 7. RANGES

- Ranges shall be available from 0-1 psi to 0-4,000 psi (0-6.89 kPa to 0-27.6 MPa)

### 8. OUTPUTS

- Outputs shall be a 4-20 mA dc digital HART protocol signal and a 4-20 mA analog signal (1-5 V dc for low power).
- Self diagnostics capability with downscale failure mode.
- Transmitter must have adjustable calibration to allow turn down of at least 10:1 or 20:1 for smart output.
- Zero and span adjustments shall be non-interactive with each other and also non-active during transmitter operation.

## 9. PERFORMANCE

- The transmitter shall meet the following performance criteria as a minimum:
  - Accuracy:  $\pm 0.25\%$  of calibrated span.
  - Ambient Temperature Effects (per 100 °F [55 °C]):

Temperature	Ranges between 0–3 and 0–4,000 psi (0–20.7 kPa to 0–27.6 MPa)	Ranges below 0–3 psi (0–20.7 kPa)
–40 to 0 °F (–40 to –18 °C)	$\pm(0.7\% \text{ URL} + 0.8\% \text{ Span})$	$\pm(1.3\% \text{ URL} + 0.5\% \text{ Span})$
0 to 140 °F (–18 to 60 °C)	$\pm(0.5\% \text{ URL} + 0.5\% \text{ Span})$	$\pm(1.0\% \text{ URL} + 0.5\% \text{ Span})$
140 to 185 °F (60 to 85 °C)	$\pm(0.7\% \text{ URL} + 0.8\% \text{ Span})$	$\pm(1.3\% \text{ URL} + 0.5\% \text{ Span})$

- Stability:  $\pm 0.10\%$  of upper range limit for 12 months for smart output.
- $\pm 0.25\%$  of upper range limit for 12 months for analog output.
- Vibration:  $\pm 0.1\%$  of upper range limit when subjected to 2 g (15–150 Hz) and 1 g (150–2000 Hz).
- Radio Frequency Interference:  $\pm 0.25\%$  of upper range limit from 20–1000 MHz at 30 V/m with leads in conduit.  $\pm 0.25\%$  of upper range limit at 10 V/m with unshielded twisted pair (no conduit).

## 10. OPTIONS

- The following options shall be available:
  - Digital indicating meter.
  - Remote diaphragm seals.
  - Mounting bracket.
  - Transient protection
  - Assembly to Model 306 Integral Manifold

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