Rosemount 951 Dry Gas Pressure Transmitter

ROSEMOUNT 951 FEATURES:

- Unparalleled stability to reduce frequency of calibration
- Digital HART® communication capability for ease of use
- 40:1 Rangeability for fewer SKU’s and spare parts
- Compact design allows for efficient use of space while bracket options provide flexibility in mounting configurations
- Superior total performance over full temperature range

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Bringing Rosemount Industrial Technology Into New Applications

The Rosemount 951 Dry Gas Pressure Transmitter brings legendary reliability, stability, and accuracy to critical HVAC and cleanroom applications.

**Unparalled Stability to Reduce Frequency of Calibration**

Competitor devices can drift out of specification after just a few months and require re-calibration, which consumes your time, money, and risks regulatory non-compliance.

**Digital HART® Communication Capability**

The HART protocol enables quick and easy reranging, calibration, and troubleshooting on the spot. Local zero and span adjustments are standard and allow reranging when a 275/375 HART Communicator isn’t available.

**40:1 Rangeability**

40:1 rangeability reduces inventories and allows you to carry just one SKU.

**Compact Design Optimized for Panel Mounting**

The Rosemount 951 is more compact than many competitor devices, allowing you to mount transmitters more efficiently within a panel.

**Superior Performance Over Temperature**

Integral temperature measurement means the Rosemount 951 provides superior temperature compensation enabling a more precise pressure measurement over the entire operating temperature range.
Specifications

FUNCTIONAL SPECIFICATIONS

DP/GP Pressure Ranges

<table>
<thead>
<tr>
<th>Range</th>
<th>Minimum Span</th>
<th>Range and Sensor Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.1 inH₂O</td>
<td>4 inH₂O (-4 inH₂O)</td>
</tr>
<tr>
<td></td>
<td>(0.25 mbar)</td>
<td>(10 mbar) (-10 mbar)</td>
</tr>
<tr>
<td>1</td>
<td>1.25 inH₂O</td>
<td>25 inH₂O (-25 inH₂O)</td>
</tr>
<tr>
<td></td>
<td>(3.10 mbar)</td>
<td>(62.3 mbar) (-62.3 mbar)</td>
</tr>
</tbody>
</table>

Service
Non-condensing (0-95% relative humidity), non-combustible, non-corrosive, and clean gases.

Output
2-wire 4-20 mA: linear or square root
HART® digital communication and configuration
0-5 V DC (Pending)

Power Supply & Load Limits
External Power Supply required 10.5 to 36 V
Minimum 250 Ohms loop resistance for digital communications

FIGURE 2. Power Supply Load Limitations, 4–20 mA Transmitters

Max. Loop Resistance = \(43.5 \times (\text{Power Supply Voltage} - 10.5)\)

Communication requires a minimum loop resistance of 250 ohms.

Process and Ambient Temperature Limits
-40 to 185°F (-40 to 85°C)

Static and Overpressure Limit
100 psi (6.89 bar)

Burst Pressure
500 psi (34.47 bar)

Humidity Limits
0-95% relative humidity

Volumetric Displacement
Less than 0.005 in³

Damping
Analog output response to a step input change is user-selectable from 0 to 60 seconds for one time constant. This software damping is in addition to sensor module response time.

Failure Mode Alarm
If self-diagnostics detect a gross transmitter failure, the analog signal will be driven offscale to alert the user.

TABLE 1. Alarm Configuration

<table>
<thead>
<tr>
<th></th>
<th>High Alarm</th>
<th>Low Alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default - High</td>
<td>≥ 21.75 mA</td>
<td>≤ 3.75 mA</td>
</tr>
</tbody>
</table>

Turn-On Time
Performance within specifications less than 2.0 seconds after power is applied to the transmitter.
PHYSICAL SPECIFICATIONS

Process Connections
1/8 inch NPT stainless fittings to accommodate any process connection
Optional: Barbed male adaptors for press on tube connection
Process Connections include HDPE internal filter

Housing
NEMA 4X Delrin® Acetal
IP 65
Anodized aluminum brackets:
• Side
• Flush
• Panel

Materials Exposed to Gases
• HAVAR®
• Nitronic® 32
• Hastelloy C-276®
• Ceramic
• Silicon Dioxide

Sensor Module Fill Fluid
None

Shipping Weight
Approximately 1 lb. (0.45 kg.)

Electrical Connections
Terminal block with HART interface connections

PERFORMANCE SPECIFICATIONS

Reference Accuracy
±0.25% of span for spans 1:1 to 6:1
±0.04% of URL for spans 6:1 to 40:1

Ambient Temperature Effect
±0.25% URL + 0.05% of Span per 50°F (28°C)

Mounting Effect
Zero shifts up to ± 0.01 inH₂O which can be calibrated out.
No span effect.

Time Response
Less than 200 milliseconds

Stability
0.125% of URL for 12 months

Power Supply Effect
Less than ±0.01% of calibrated span per volt
FIGURE 3. Rosemount 951 Dry Gas Pressure Transmitter Dimensional Drawings

FIGURE 4. Rosemount 951 Dry Gas Pressure Transmitter Side Mount Dimensional Drawings

Note:
Dimensions are inches (millimeters)
FIGURE 5. Rosemount 951 Dry Gas Pressure Transmitter Flush Mount Dimensional Drawings

Note:
Dimensions are inches (millimeters)

FIGURE 6. Rosemount 951 Dry Gas Pressure Transmitter Panel Mount Dimensional Drawings

Note:
Dimensions are inches (millimeters)
FIGURE 7. Rosemount 951 Dry Gas Pressure Transmitter with optional LCD Meter Dimensional Drawings

Note:
Dimensions are inches (millimeters)
## Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Product Type</th>
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<tbody>
<tr>
<td>951D</td>
<td>Air Flow Differential Pressure Transmitter</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-4 to 4 inH&lt;sub&gt;2&lt;/sub&gt;O</td>
</tr>
<tr>
<td>1</td>
<td>-25 to 25 inH&lt;sub&gt;2&lt;/sub&gt;O</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Transmitter Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>4-20mA with Digital Signal Based on HART Protocol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Process Connection Style</th>
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<tbody>
<tr>
<td>K01</td>
<td>⅛ inch NPT</td>
</tr>
<tr>
<td>K03</td>
<td>Barbed Fitting (brass) compatible with ⅛ inch ID tubing</td>
</tr>
<tr>
<td>K04</td>
<td>Barbed Fitting (brass) compatible with ⅛ inch ID tubing</td>
</tr>
<tr>
<td>K05</td>
<td>Barbed Fitting (brass) compatible with 6 mm ID tubing</td>
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</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Mounting Bracket</th>
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</thead>
<tbody>
<tr>
<td>B1</td>
<td>Bracket, Panel Mount</td>
</tr>
<tr>
<td>B2</td>
<td>Bracket, Flush Mount</td>
</tr>
<tr>
<td>B3</td>
<td>Bracket, Side Mount</td>
</tr>
<tr>
<td>B0</td>
<td>No Bracket</td>
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</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Options</th>
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<tbody>
<tr>
<td>C1</td>
<td>Custom Software Configuration (A Configuration Data Sheet must be completed)</td>
</tr>
<tr>
<td>M5</td>
<td>Digital LCD Meter</td>
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<tr>
<td>Q4</td>
<td>Calibration data certificate consistent with ISO 10474 2.1 or EN 10204 2.1</td>
</tr>
<tr>
<td>QP</td>
<td>Calibration Certificate &amp; Tamper Evident Seal</td>
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**Typical Model Number:** 951 D 1 A1 K01 B1 C1 Q4