Rosemount™ 4600 Oil and Gas Panel Pressure Transmitter
Legendary Rosemount performance, customized for your panel applications

A compact, lightweight, all-welded stainless steel design
You asked for it and we’ve delivered — the stability, performance, and reliability of Rosemount products are now available in a compact transmitter for your space and weight constrained panel applications. The entire transmitter weighs less than 2.1 lb (0.95 kg) and the all-welded, hermetic enclosure maximizes reliability by minimizing environmental effects, such as salt spray and humidity, on the electronics and sensor.

Up to 40:1 rangeability for increased flexibility and reduced inventories
Emerson understands that oil and gas well pressures are sometimes unpredictable, and that’s why we’ve incorporated 40:1 rangeability into the Rosemount 4600. Not only does 40:1 rangeability allow you incredible flexibility, it also lowers your transmitter inventories by allowing you to measure pressure ranges from 20 psi to 20,000 psi with only four transmitter ranges.

Leading edge capacitance sensor with integral temperature measurement for improved total performance
Integral temperature measurement means the Rosemount 4600 provides superior temperature compensation and therefore, a more precise pressure measurement over the entire operating temperature range.

3-year stability guarantee reduces maintenance costs

Operating conditions:
- Calibration span: 3,000 psi
- Ambient temperature change: ±50 °F (±28 °C)
- Required measurement performance: 1.1 percent of span

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Most competitive devices can drift out of specification after just a few months and require recalibration, which consumes both your time and money. The Rosemount 4600 carries a 3-year “Set and Forget” stability guarantee to reduce the frequency of calibration and lower maintenance costs.

4-20 mA HART® capabilities and 0.25 percent of calibrated span reference accuracy

The HART protocol enables quick and easy reranging, calibration and troubleshooting for nearly effortless field adjustments. As always, reference accuracy is specified as a percent of calibrated span, not as a percent of full scale, so you’re guaranteed 0.25 percent reference accuracy whether you’re measuring 20,000 psi or 20 psi.
Ordering information

The Rosemount 4600 Oil and Gas Panel Pressure Transmitter is a compact, reliable transmitter designed to meet your panel-mount monitoring needs. The transmitter continues the Emerson tradition of delivering superior performance, industry leading reliability, and exceptional value.

- A compact, lightweight, all-welded stainless steel design
- Up to 40:1 rangeability for increased flexibility and reduced inventories
- 3-year stability guarantee reduces maintenance costs
- Leading edge capacitance sensor with integral temperature measurement for improved total performance
- 4–20 mA HART capabilities and 0.25 percent of calibrated span reference accuracy

Online Product Configurator

Many products are configurable online using our Product Configurator. Select the Configure button or visit our website to start. With this tool’s built-in logic and continuous validation, you can configure your products more quickly and accurately.

Specifications and options

See the Specifications and options section for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See the Material selection section for more information on material selection.

Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in Figure 2.

Figure 2: Model Code Example

<table>
<thead>
<tr>
<th>3051C D 2 X 2 2 1 A</th>
<th>WA3 WP5</th>
<th>M5 B4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Required model components (choices available on most)
2. Wireless options (optional for many products, required for wireless products)
3. Additional options (variety of features and functions that may be added to products)
The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

### Required model components

#### Model

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4600</td>
<td>Oil and gas panel pressure transmitter</td>
</tr>
</tbody>
</table>

#### Measurement type

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Sealed gauge</td>
<td>★</td>
</tr>
<tr>
<td>A</td>
<td>Absolute</td>
<td>★</td>
</tr>
</tbody>
</table>

#### Pressure range

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0–20 to 0–150 psi</td>
<td>★</td>
</tr>
<tr>
<td>4</td>
<td>0–125 to 0–5,000 psi</td>
<td>★</td>
</tr>
<tr>
<td>5</td>
<td>0–330 to 0–10,000 psi</td>
<td>★</td>
</tr>
<tr>
<td>6</td>
<td>0–660 to 0–20,000 psi</td>
<td>★</td>
</tr>
</tbody>
</table>

#### Isolating diaphragm/process connection materials


<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>316L SST</td>
<td>★</td>
</tr>
<tr>
<td>3</td>
<td>Alloy C-276</td>
<td>★</td>
</tr>
</tbody>
</table>

#### Process connection style

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E09(1)</td>
<td>¼–18 NPT female</td>
<td>★</td>
</tr>
<tr>
<td>E11(2)</td>
<td>½–14 NPT female</td>
<td>★</td>
</tr>
<tr>
<td>H11(3)</td>
<td>Coned and threaded, compatible with autoclave type F–250–C</td>
<td>★</td>
</tr>
</tbody>
</table>

(1) Not available with Pressure Range 6.
(2) Not available with Pressure Range 5 or 6.
(3) Only available with Pressure Range 5 or 6.
### Output

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4–20 mA with digital signal based on HART protocol</td>
</tr>
</tbody>
</table>

### Electrical connection

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A</td>
<td>½–14 NPT male with 72–in. flying Lead</td>
</tr>
</tbody>
</table>

### Additional options

#### Extended product warranty

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR3</td>
<td>3–year limited warranty</td>
</tr>
<tr>
<td>WR5</td>
<td>5–year limited warranty</td>
</tr>
</tbody>
</table>

#### Software configuration

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Custom software configuration (CDS required with order)</td>
</tr>
</tbody>
</table>

#### Alarm limits

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C6</td>
<td>Custom alarm and saturation signal levels, high alarm</td>
</tr>
<tr>
<td>C7</td>
<td>Custom alarm and saturation signal levels, low alarm</td>
</tr>
</tbody>
</table>

#### Hardware adjustments

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Zero and span adjustments</td>
</tr>
</tbody>
</table>

#### External ground screw assembly

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D4</td>
<td>External ground screw assembly</td>
</tr>
</tbody>
</table>
### Product certifications

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>ATEX Flameproof</td>
</tr>
<tr>
<td>I1</td>
<td>ATEX Intrinsic Safety</td>
</tr>
<tr>
<td>N1</td>
<td>ATEX Type n</td>
</tr>
<tr>
<td>K1</td>
<td>ATEX Flameproof, Intrinsic Safety, Type n (combination of E1, I1, and N1)</td>
</tr>
<tr>
<td>ND</td>
<td>ATEX Dust Ignition-Proof</td>
</tr>
<tr>
<td>E2</td>
<td>INMETRO Flameproof</td>
</tr>
<tr>
<td>E5</td>
<td>FM Approval Explosionproof</td>
</tr>
<tr>
<td>I5</td>
<td>FM Approval Intrinsic Safety, Non-incendive</td>
</tr>
<tr>
<td>K5</td>
<td>FM Approval Explosionproof, Intrinsic Safety, Non-incendive (combination of E5 and I5)</td>
</tr>
<tr>
<td>E6</td>
<td>CSA Explosionproof, Division 2</td>
</tr>
<tr>
<td>I6</td>
<td>CSA Intrinsic Safety</td>
</tr>
<tr>
<td>K6</td>
<td>CSA Explosionproof, Intrinsic Safety, Division 2 (combination of E6 and I6)</td>
</tr>
<tr>
<td>E7</td>
<td>IECEx Flameproof, Dust Ignition-proof</td>
</tr>
<tr>
<td>EM</td>
<td>Technical Regulations Customs Union (EAC) Flameproof</td>
</tr>
<tr>
<td>IM</td>
<td>Technical Regulations Customs Union (EAC) Intrinsic Safety</td>
</tr>
<tr>
<td>KM</td>
<td>Technical Regulation Customs Union (EAC) Flameproof and Intrinsic Safety</td>
</tr>
<tr>
<td>KA</td>
<td>ATEX/CSA Flameproof and Intrinsic Safety (combination of E1, I1, E6, and I6)</td>
</tr>
<tr>
<td>KB</td>
<td>FM Approval and CSA Explosionproof and Intrinsic Safety (combination of E5, E6, I5, and I6)</td>
</tr>
<tr>
<td>KC</td>
<td>FM Approval and ATEX Explosionproof and Intrinsic Safety (combination of E5, E1, I5, and I1)</td>
</tr>
</tbody>
</table>

### Calibration certifications

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4</td>
<td>Calibration Data Certificate consistent with ISO 104742.1 or EN 10204 2.1</td>
</tr>
</tbody>
</table>

### Material traceability certification

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q8</td>
<td>Material Traceability Certification per EN 10204 3.1B</td>
</tr>
</tbody>
</table>

### Positive material identification (PMI)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q76</td>
<td>PMI verification and certificate</td>
</tr>
</tbody>
</table>
## Transient protection

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Transient protection</td>
</tr>
</tbody>
</table>

## Quality certification for safety

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QS</td>
<td>Prior-use certificate of FMEDA data</td>
</tr>
</tbody>
</table>
Specifications

Performance specifications
For zero-based spans, reference conditions, silicone oil fill, SST materials, ½-in.–14 NPT process connections, digital trim values set to equal range points. Does not include any error due to the effects of sealed gauge.

Conformance to specification (±3 Sigma)
Technology leadership, advanced manufacturing techniques and statistical process control ensure specification conformance to at least ±3 sigma.

Reference accuracy
Includes the effects of terminal based linearity, hysteresis, and repeatability.
Range 2: ±0.25 percent of calibrated span from 1:1 to 7.5:1 rangedown
Range 4: ±0.25 percent of calibrated span from 1:1 to 40:1 rangedown
Range 5: ±0.25 percent of calibrated span from 1:1 to 30:1 rangedown
Range 6: ±0.25 percent of calibrated span from 1:1 to 30:1 rangedown

Long term stability
0.5 percent of span for three years under normal operating conditions

Vibration effect
Less than ±0.1 percent of URL when tested per the requirements of IEC 60770.84 pipeline (general and extreme vibration level) (10-60 Hz 0.21mm peak to peak displacement/60-2000 Hz 3g).

Electromagnetic Compatibility (EMC)
Meets all industrial environment requirements of EN61326. Maximum deviation <1 percent Span during EMC disturbance.

Note
During surge event, device may exceed maximum EMC deviation limit or reset; however, device will self-recover and return to normal operation within specified start-up time.

Transient protection (option T1)
- Meets IEEE C62.41, Category B
  - 6 kV crest (0.5 μs - 100 kHz)
  - 3 kA crest (8 × 20 microseconds)
  - 6 kV crest (1.2 × 50 microseconds)
- Meets IEEE C37.90.1, Surge Withstand Capability
  - SWC 2.5 kV crest, 1.25 MHz waveform
- General specifications
  - Response time: < 1 nanosecond
  - Peak surge current: 5000 amps to housing
  - Peak transient voltage: 100 Vdc
  - Loop impedance: < 25 ohms
- Applicable standards: IEC61000-4-4, IEC61000-4-5

Note
Calibrations at 68 °F (20 °C) per ASME Z210.1 (ANSI).
Range and sensor limits

Table 1: Transmitter Range Limits

<table>
<thead>
<tr>
<th>Range</th>
<th>Lower (LRL)(^{(1)})</th>
<th>Upper (URL)</th>
<th>Minimum span</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0 psi (0 bar)</td>
<td>150 psi (10.3 bar)</td>
<td>20 psi (1.4 bar)</td>
</tr>
<tr>
<td>4</td>
<td>0 psi (0 bar)</td>
<td>5,000 psi (344.7 bar)</td>
<td>125 psi (8.6 bar)</td>
</tr>
<tr>
<td>5</td>
<td>0 psi (0 bar)</td>
<td>10,000 psi (689.5 bar)</td>
<td>330 psi (22.8 bar)</td>
</tr>
<tr>
<td>6</td>
<td>0 psi (0 bar)</td>
<td>20,000 psi (1379 bar)</td>
<td>660 psi (45.5 bar)</td>
</tr>
</tbody>
</table>

\(^{(1)}\) 220 °F (104 °C) limit in vacuum service; 130 °F (54 °C) for pressures below 0.5 psia.

Functional specifications

Dynamic performance

500 milliseconds (response time + dead time)

Ambient temperature effect per 100 °F (56 °C)

±0.03 percent URL + 1.0 percent span from 1:1 to maximum rangedown

Service

Liquid, gas, and vapor applications

4–20 mA (output code A)

Zero and Span Adjustment

Zero and span values can be set anywhere within the range.

Span must be greater than or equal to the minimum span.

Output

Digital process variable superimposed on 4–20 mA signal, available to any host that conforms to the HART protocol.

Power supply

External power supply required. Standard transmitter (4–20 mA) operates on 11.25 to 42.4 Vdc with no load.

Load limitations

Maximum loop resistance is determined by the voltage level of the external power supply, as described by:

- Maximum loop resistance = 43.5 (power supply voltage = 11.25).
- Communication requires a minimum loop resistance of 250 ohms.
Overpressure limits
- Transmitters withstand the following pressure without damage:
  - Range 2: 1,500 psi (103.4 bar)
  - Range 4: 7,500 psi (517.1 bar)
  - Range 5: 15,000 psi (1034 bar)
  - Range 6: 24,000 psi (1655 bar)

Burst pressure limits
Range 2: 11,000 psi (758.4 bar)
Range 4: 11,000 psi (758.4 bar)
Range 5: 26,000 psi (1793 bar)
Range 6: 31,000 psi (2137 bar)

Temperature limits
- Ambient: −40 to 185 °F (−40 to 85 °C)
- Storage: −50 to 230 °F (−46 to 110 °C)
- Process(1)(2): −40 to 250 °F (−40 to 121 °C)

Turn-on time
Performance within specifications less than 2.5 seconds after power is applied to the transmitter

Damping
Analog output response to a step input change is user-selectable from 0.3 to 60 seconds for one time constant. This software damping is in addition to sensor module response time.

Failure mode alarm
HART 4–20mA (output code A)
If self-diagnostics detect a gross transmitter failure, the analog signal will be driven offscale to alert the user. Rosemount standard and custom alarm levels are available.
High or low alarm signal is software-selectable.

Alarm configuration
- Rosemount
  - High alarm: ≥ 21.75 mA
  - Low alarm: ≤ 3.75 mA
- Custom level(3)
  - High alarm: 20.2 - 23.0 mA
  - Low alarm: 3.6 - 3.8 mA

(1) Process temperature above 185 °F (85 °C) require de-rating ambient limits by a 1.5:1 ratio.
(2) Process temperature cannot exceed 220 °F (104 °C) in vacuum service.
(3) Low alarm must be 0.1 mA less than low saturation and high alarm must be 0.1 mA greater than high saturation.
Physical specifications

Material selection
Emerson provides a variety of Rosemount product with various product options and configurations including materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser’s sole responsibility to make a careful analysis of all process parameters (e.g. all chemical components, temperature, pressure, flow rate, abrasives, contaminants), when specifying product, materials, options and components for the particular application. Emerson is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product, options, configuration or materials of construction selected.

Electrical connections
½–14 NPT male, 72-in. flying leads (polyvinyl chloride insulated #18 AWG copper wire)

Conduit seal
Integral conduit seal meets the requirements of NEC® 2002 section 501.5 (A), 501.5 (B) and 505.16 (B)(1). No additional conduit seal required.

Process connections
- ½–14 NPT female (available on Ranges 2 and 4 only)
- ¼–18 NPT female (not available on Range 6)
- Autoclave type F-250-C (Pressure relieved 9/16–18 gland thread: ¼ OD high pressure tube 60° cone: available Range 5 and 6 transmitters only.

Process sealing
Reliable dual process seal design meets the requirements NEC2002 section 501.5 (F)(3), 505.16 (E)(3) and API 14F/14FZ 6.8.2.2. No additional process sealing is required.

Process-wetted parts
Process isolating diaphragms(4)
316L SST
Alloy C-276

Non-wetted parts
Electronics housing
316L SST
NEMA® 4X
IP 68, IP 66

Sensor module fill fluid
Silicone

Shipping weights for Rosemount 4600
Range 2 and 4: 1.34 lb. (0.61 kg.)
Range 5 and 6: 2.03 lb. (0.92 kg.)

Product certifications

Rev 1.7

European Directive Information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at Emerson.com/Rosemount.

Ordinary Location Certification

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

North America

E5 US Explosionproof (XP) and Dust–Ignitionproof (DIP)

Certificate 3012302


Markings Explosionproof for Class I, Division 1, Groups B, C, and D; Flameproof for Class 1, Zone 1 AEx d IIC T5 (–40 to 85 °C); Dust–ignition proof for Class II and Class III, Division 1, Groups E, F, and G; Temperature Code T5($T_{amb}$ = –40 to 85 °C); Enclosure Type 4X; Conduit seal not required.

I5 US Intrinsic Safety (IS), Nonincendive (NI)

Certificate 3012302


Markings Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Temperature Code T4 (–50 to 70 °C); Intrinsically Safe for use in Class I, Zone 0 AEx ia IIC T4 (–50 to 70 °C) in accordance with control drawing 04620–5007; Nonincendive for Class I, Division 2, Groups A, B, C, and D when connected in accordance with Rosemount drawing 04620–5007; Enclosure Type 4X

E6 Canada Explosionproof and Division 2

Certificate 1384913


Markings Explosionproof for Class I, Division 1, Groups B, C, and D; Dust–Ignitionproof for Class II and Class III, Division 1, Groups E, F, and G; Temperature Code T5 (–50 to 40 °C); Explosion–proof for Class 1, Zone 1 Ex d IIC T5 (–20 to 40 °C); Suitable for Class I, Division 2, Groups A, B, C, and D when installed per Rosemount drawing 04620–5005; Enclosure Type 4X; Conduit seal not required.
**I6 Canada Intrinsic Safety**

**Certificate** 1384913  

**Markings** Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, and D; Temperature Code T3C (−50 to 70 °C); Intrinsically Safe for use in Class I, Zone 0 Ex ia IIC T4 (−50 to 70 °C) when connected in accordance with  Rosemount drawing 04620–5005; Enclosure Type 4X; For entity parameters see control drawing 04620–5005

**Europe**

**E1 ATEX Flameproof**

**Certificate** KEMA02ATEX2231X  

**Markings** Ex db IIC T6...T4 Ga/Gb T4/T5 (−60 °C ≤ Ta ≤ +80 °C), T6 (−60 °C ≤ Ta ≤ +70 °C)

**Table 2: Temperature Range**

<table>
<thead>
<tr>
<th>Process connection temperature range (°C)</th>
<th>Ambient temperature range (°C)</th>
<th>Temperature class/maximum surface temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>−60 to +70 °C</td>
<td>−60 to +70 °C</td>
<td>T6/ T135 °C</td>
</tr>
<tr>
<td>−60 to +80 °C</td>
<td>−60 to +80 °C</td>
<td>T5/ T135 °C</td>
</tr>
<tr>
<td>−60 to +120 °C</td>
<td></td>
<td>T4/ T135 °C</td>
</tr>
</tbody>
</table>

**Special Conditions for Safe Use (X)**

1. The device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between Category 1 (process connection) and Category 2 (all other parts of the equipment). The model code and data sheet are to be consulted for details of the diaphragm material. During installation, maintenance, and use, the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer's instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

2. Flameproof joints are not intended for repair.

**I1 ATEX Intrinsic Safety**

**Certificate** Baseefa03ATEX0114X  
**Standards** EN60079–0: 2012+A11:3013, EN60079–11:2012

**Markings** Ex ia IIC T4 Ga (−40 °C ≤ Ta ≤ +70 °C)

**Table 3: Input Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>30 V</td>
</tr>
<tr>
<td>Current</td>
<td>200 mA</td>
</tr>
<tr>
<td>Power</td>
<td>1.0 W</td>
</tr>
<tr>
<td>Capacitance</td>
<td>35 nF</td>
</tr>
<tr>
<td>Inductance</td>
<td>390 µH</td>
</tr>
</tbody>
</table>
Special Condition for Safe Use (X):

1. The equipment with the Transient Protection (T1) option is not capable of withstanding the 500 V insulation test required by Clause 6.3.13 of EN60079–11:2012. This must be taken into account when installing the equipment.

N1 ATEX Type n

Certificate Baseefa03ATEX0115X
Markings Ex nA IIC T5 Gc (–40 °C ≤ T_a ≤ +70 °C) U_i = 42.4 V

Special Condition for Safe Use (X):

1. The equipment with the Transient Protection (T1) option is not capable of withstanding the 500 V insulation test required by Clause 6.5.1 of EN60079–15:2010. This must be taken into account when installing the equipment.

ND ATEX Dust Ignition–proof

Certificate KEMA02ATEX2231X
Markings Ex db IIIC T135 °C Db (–60 °C ≤ T_a ≤ +80 °C)

Special Conditions for Safe Use (X):

1. The device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between Category 1 (process connection) and Category 2 (all other parts of the equipment). The model code and data sheet are to be consulted for details of the diaphragm material. During installation, maintenance, and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer’s instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.

2. Flameproof joints are not intended for repair.

International

E7 IECEX Flameproof and Dust

Certificate IECEx DEK 13.0017X
Markings Ex T6...T4 Ga/Gb T4/T5 (–60 °C ≤ T_a ≤ +80 °C), T6 (–60 °C ≤ T_a ≤ +70 °C) Ex T135 °C Db (–60 °C ≤ T_a ≤ +80 °C)

<table>
<thead>
<tr>
<th>Process connection temperature range (°C)</th>
<th>Ambient temperature range</th>
<th>Temperature class/maximum surface temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>–60 to +70 °C</td>
<td>–60 to +70 °C</td>
<td>T6/ T135 °C</td>
</tr>
<tr>
<td>–60 to +80 °C</td>
<td>–60 to +80 °C</td>
<td>T5/ T135 °C</td>
</tr>
<tr>
<td>–60 to +120 °C</td>
<td></td>
<td>T4/ T135 °C</td>
</tr>
</tbody>
</table>

Special Conditions for Safe Use (X):

1. The device contains a thin wall diaphragm less than 1 mm thick that forms a boundary between Category 1 (process connection) and Category 2 (all other parts of the equipment). The model code and data sheet are to be consulted for details of the diaphragm material. During installation, maintenance, and use the environmental conditions to which the diaphragm will be subjected shall be taken into account. The manufacturer’s instructions for installation and maintenance shall be followed in detail to assure safety during its expected lifetime.
2. Flameproof joints are not intended for repair.

**Brazil**

**E2 INMETRO Flameproof**

- **Certificate**: UL–BR 15.0509X
- **Markings**: db IIC T6...T4 Ga/Gb, T6(–60 °C ≤ Tₐ ≤ +70 °C), T5/T4(–60 °C ≤ Tₐ ≤ +80 °C)

**Special Condition for Safe Use (X):**

1. This device contains a thin wall diaphragm. Installation, maintenance and use shall take into account the environmental conditions to which the diaphragm will be subjected. The manufacturer’s instructions for installation and maintenance shall be followed in detail in order to assure safety during its expected lifetime.

**Technical Regulations Customs Union (EAC)**

**EM EAC Flameproof**

- **Certificate**: RU C–US.GB05.B.00401
- **Markings**: Ga/Gb d IIC T6...T4 X, T6(–60 °C ≤ Tₐ ≤ +70 °C), T4/T5(–60 °C ≤ Tₐ ≤ +80 °C)

**Special Condition for Safe Use (X):**

1. See certificate.

**IM EAC Intrinsically Safe**

- **Certificate**: RU C–US.GB05.B.00401
- **Markings**: 0Ex ia IIC T4 Ga X (–40 °C ≤ Tₐ ≤ +70 °C)

**Special Condition for Safe Use (X):**

1. See certificate.

**Combinations**

- **K1**: Combination of E1, I1, and N1
- **K5**: Combination of E5 and I5
- **K6**: Combination of E6 and I6
- **KA**: Combination of E1, I1, E6, and I6
- **KB**: Combination of E5, E6, I5, and I6
- **KC**: Combination of E1, E5, I1, and I5
- **KM**: Combination of EM and IM
Dimensional drawings

Figure 3: Range 2 and 4

With T1 Ordering Option

A. Ground
B. Electrical connection ½–14 NPT
C. Optional ground screw (ordering option D4)
D. Process connection
E. Optional ground screw (standard with T1 option)

Dimensions are in inches (millimeters).
**Figure 4: Range 5 and 6**

1. **A. Ground**
2. **B. Electrical connection ½–14 NPT**
3. **C. Optional ground screw (ordering option D4)**
4. **D. Process connection**
5. **E. Optional ground screw (standard with T1 option)**

Dimensions are in inches (millimeters).