Superior performance when applications get tough

Measurement principle

The level of the product in the tank is measured by radar signals transmitted from the antenna at the tank top. After the radar signal is reflected by the product surface, the echo is picked up by the antenna. As the signal is varying in frequency, the echo has a slightly different frequency compared to the signal transmitted at that moment. The difference in frequency is proportional to the distance to the product surface, and level can be accurately calculated. This method is called Frequency Modulated Continuous Wave (FMCW).

Applications with turbulence, foam, long measuring ranges, disturbing objects, or low dielectric constants can reduce the energy reflecting back and, in worst case, eliminate it completely with the result that no surface can be detected. The reflection intensity can however be improved by using a highly sensitive radar, the optimal antenna type, and as large antenna as possible.

Radar technology benefits

- Direct level measurement means virtually no compensation is needed for changing process conditions (such as density, conductivity, temperature, pressure, viscosity, pH, dielectric etc.) which results in high application flexibility
- Accurate, reliable measurement that requires no re-calibration, meaning improved uptime
- The non-contacting radar transmitter with no moving parts means minimized maintenance
- Good for dirty, coating, crystallizing, and corrosive applications
- Top down measurement means simple installation with no empty tank requirements, and minimized risk for leakages

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<table>
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<th>Section</th>
<th>Page</th>
</tr>
</thead>
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<td>Specifications</td>
<td>15</td>
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<td>Product Certifications</td>
<td>28</td>
</tr>
<tr>
<td>Dimensional Drawings</td>
<td>31</td>
</tr>
</tbody>
</table>
**Special 5600 features**

**For the most challenging applications**

- 4-wire transmitters with maximum sensitivity and performance
- Suitable for solids, liquids, and slurries with rapid level changes and challenging process conditions
- Manages high pressures and temperature
- Handles long measuring ranges
- Application flexibility with a wide selection of materials, process connections, antenna styles, and accessories

**Best performance and uptime**

- The power of 4 wires provides the highest sensitivity and the ability to detect weak radar echoes in challenging process environments
- Smart EchoLogic with registration of disturbance echoes provides the ability to handle weak echoes reliably and identifies the true echo from the clutter
- Ability to handle disturbing factors, longer measuring ranges, and lower dielectrics
- Greater measurement reliability margins result in less downtime, higher safety, and better quality

**Robust design reduces costs and increases safety**

- The detachable transmitter head allows the tank to remain sealed
- The dual compartment housing separates cable connections and electronics, which provides safer handling and improved moisture protection
- Adjustable power supply, 24-240 Vac/dc, 0-60 Hz
- Interchangeable transmitter heads and antennas
- Allows for easy replacement by standard tank connections
Easy installation and plant integration

- Seamless system integration with HART®, Modbus®, or IEC 62591 (WirelessHART®) with the Smart Wireless THUM™ Adapter
- Secondary analog 4-20 mA output
- MultiVariable™ output includes the choice of level, distance, volume, and signal strength
- Pre-configured or easy, user-friendly configuration in Rosemount Radar Master with a five-step wizard, auto connect, and online help
- Any DD-compatible configuration tool such as AMS™ Device Manager, or Field Communicator can be used
- Fully configurable with the remote- or factory-mounted LOI Rosemount 2210 with temperature input option

Minimized maintenance reduces cost

- Non-contacting, no mechanical moving parts that require maintenance
- No re-calibration or compensation needed due to changing process conditions
- The user-friendly software provides easy online troubleshooting with the echo curve tool, registration of disturbance echoes, and logging
- Predictive maintenance with advanced diagnostics and PlantWeb™ alerts
- Adjustments without opening the tank
Ordering Information

Rosemount 5601 Radar Level Transmitter is a reliable 4-wire radar level transmitter designed for outstanding performance in a wide range of applications and process conditions. Product features include:

- Configurable remote display or local operator interface
- Extensive selection of antennas and materials
- HART 4-20 mA, Modbus, or IEC 62591 (WirelessHART) with the Smart Wireless THUM Adapter

**Additional information**

Specifications: page 15  
Product Certifications: page 28  
Dimensional Drawings: page 31

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 24 for more information on Material Selections.

**Table 1. Rosemount 5601 Radar Level Transmitter Ordering Information**

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Model</th>
<th>Product description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5601</td>
<td>Radar Level Transmitter for Process Applications ★</td>
</tr>
</tbody>
</table>

**Frequency band**

<table>
<thead>
<tr>
<th>Model</th>
<th>Product description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>US Market Only (10 GHz) ★</td>
</tr>
<tr>
<td>S</td>
<td>Switzerland Market Only (10 GHz) ★</td>
</tr>
<tr>
<td>A</td>
<td>All Other Markets (10 GHz) ★</td>
</tr>
</tbody>
</table>

**Product certifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Product description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>None ★</td>
</tr>
<tr>
<td>E1</td>
<td>CENELEC/ATEX Flameproof ★</td>
</tr>
<tr>
<td>E5</td>
<td>FM Explosion-proof ★</td>
</tr>
<tr>
<td>E6</td>
<td>CSA Explosion-proof ★</td>
</tr>
<tr>
<td>E7</td>
<td>IECEx Flameproof ★</td>
</tr>
<tr>
<td>EM</td>
<td>Technical Regulations Customs Union (EAC) Flameproof (consult factory for details) ★</td>
</tr>
<tr>
<td>IM</td>
<td>Technical Regulations Customs Union (EAC) Intrinsic Safety (consult factory for details) ★</td>
</tr>
</tbody>
</table>

**Power supply**

<table>
<thead>
<tr>
<th>Model</th>
<th>Product description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>24-240 Vdc/ac 0-60 Hz ★</td>
</tr>
</tbody>
</table>

**Primary output**

<table>
<thead>
<tr>
<th>Model</th>
<th>Product description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A</td>
<td>4-20 mA with HART communication, Passive Output (HART Revision 5) ★</td>
</tr>
<tr>
<td>5B</td>
<td>4-20 mA with HART communication, Passive Output, Intrinsically Safe Circuit (HART Revision 5)(1) ★</td>
</tr>
<tr>
<td>5C</td>
<td>4-20 mA with HART communication, Active Output (HART Revision 5) ★</td>
</tr>
</tbody>
</table>
**Table 1. Rosemount 5601 Radar Level Transmitter Ordering Information**

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Starred</th>
</tr>
</thead>
<tbody>
<tr>
<td>5D</td>
<td>4-20 mA with HART communication, Active Output, Intrinsically Safe Circuit (HART Revision 5)</td>
<td>★</td>
</tr>
<tr>
<td>8A</td>
<td>RS 485 Protocol - Modbus</td>
<td>★</td>
</tr>
</tbody>
</table>

**Secondary output**<sup>(2)(3)</sup>

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Starred</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
<td>★</td>
</tr>
<tr>
<td>1</td>
<td>4-20 mA, Passive Output&lt;sup&gt;(4)(5)&lt;/sup&gt;</td>
<td>★</td>
</tr>
<tr>
<td>2</td>
<td>4-20 mA, Passive Output, Intrinsically Safe Circuit&lt;sup&gt;(1)(4)&lt;/sup&gt;</td>
<td>★</td>
</tr>
<tr>
<td>3</td>
<td>4-20 mA, Active Output&lt;sup&gt;(5)&lt;/sup&gt;</td>
<td>★</td>
</tr>
<tr>
<td>4</td>
<td>4-20 mA, Active Output, Intrinsically Safe Circuit&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>★</td>
</tr>
</tbody>
</table>

**Display unit**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Starred</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>None</td>
<td>★</td>
</tr>
<tr>
<td>P</td>
<td>LOI, Factory mounted on transmitter</td>
<td>★</td>
</tr>
<tr>
<td>R</td>
<td>LOI, Remote mounted</td>
<td>★</td>
</tr>
<tr>
<td>T</td>
<td>LOI, Remote mounted with temp inputs (1-6 spot elements with common returns)</td>
<td>★</td>
</tr>
</tbody>
</table>

**Volume calculation**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Starred</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Basic Volume Equations (Standard)</td>
<td>★</td>
</tr>
<tr>
<td>V</td>
<td>Strapping Table, up to 100 points</td>
<td>★</td>
</tr>
</tbody>
</table>

**Typical model number: 5601 S E1 P 5A 0 P E Antenna Selection**<sup>(6)</sup>

---

<sup>(1)</sup> Intrinsically safe circuit only applicable if product certificate codes E1, E5, E6, or E7 is selected.

<sup>(2)</sup> Secondary output codes are not available in a combination of E6 CSA and Primary Output codes 5A, 5B, 5C, or 5D.

<sup>(3)</sup> Secondary output codes 1, 2, 3, and 4 require an isolator when used in combination with 7A, 7B, or 8A.

<sup>(4)</sup> Not available in combination with Primary Output codes 5A, 5B, 5C, or 5D.

<sup>(5)</sup> Not allowed in combination with Display Unit codes P, R, or T.

<sup>(6)</sup> Select the antenna type and options using Table 2, Table 3, Table 4, Table 5, Table 6, and Table 7.
Table 2. Cone Antenna Ordering Information
The starred options ( ★ ) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Antenna type</th>
<th>Antenna size</th>
<th>Antenna material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>23S</td>
<td>3 in. (DN80) nozzles</td>
<td>SST 316L</td>
<td>Pipe Installation Only         ★</td>
</tr>
<tr>
<td>24S</td>
<td>4 in. (DN100) nozzles</td>
<td>SST 316L</td>
<td>Free propagation or 4” pipe    ★</td>
</tr>
<tr>
<td>26S</td>
<td>6 in. (DN150) nozzles</td>
<td>SST 316L</td>
<td>Free propagation or 6” pipe    ★</td>
</tr>
<tr>
<td>28S</td>
<td>8 in. (DN200) nozzles</td>
<td>SST 316L</td>
<td>Free propagation only          ★</td>
</tr>
<tr>
<td>2AS</td>
<td>10 in. (DN250) nozzles</td>
<td>SST 316L</td>
<td>Free propagation only</td>
</tr>
<tr>
<td>23H</td>
<td>3 in. (DN80) nozzles</td>
<td>Alloy C22</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>24H</td>
<td>4 in. (DN100) nozzles</td>
<td>Alloy C22</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>26H</td>
<td>6 in. (DN150) nozzles</td>
<td>Alloy C22</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>28H</td>
<td>8 in. (DN200) nozzles</td>
<td>Alloy C22</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>23T</td>
<td>3 in. (DN80) nozzles</td>
<td>Titanium Gr 1/2</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>24T</td>
<td>4 in. (DN100) nozzles</td>
<td>Titanium Gr 1/2</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>26T</td>
<td>6 in. (DN150) nozzles</td>
<td>Titanium Gr 1/2</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>28T</td>
<td>8 in. (DN200) nozzles</td>
<td>Titanium Gr 1/2</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>23M</td>
<td>3 in. (DN80) nozzles</td>
<td>Alloy 400</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>24M</td>
<td>4 in. (DN100) nozzles</td>
<td>Alloy 400</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>26M</td>
<td>6 in. (DN150) nozzles</td>
<td>Alloy 400</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>28M</td>
<td>8 in. (DN200) nozzles</td>
<td>Alloy 400</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>26Z</td>
<td>Customer specific cone or material</td>
<td></td>
<td>Consult Factory</td>
</tr>
</tbody>
</table>

Tank seal

<table>
<thead>
<tr>
<th>Tank seal</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>PTFE ★</td>
</tr>
<tr>
<td>Q</td>
<td>Quartz ★</td>
</tr>
</tbody>
</table>

O-ring material

<table>
<thead>
<tr>
<th>O-ring material</th>
<th>Tank seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>P, Q      ★</td>
</tr>
<tr>
<td>K</td>
<td>P, Q      ★</td>
</tr>
<tr>
<td>E</td>
<td>P         ★</td>
</tr>
<tr>
<td>B</td>
<td>P         ★</td>
</tr>
</tbody>
</table>

Process connection

<table>
<thead>
<tr>
<th>Process connection</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>NR</td>
<td>Antenna with Plate Design Customer supplied flange or see Table 10 on page 14 for flange options ★</td>
</tr>
<tr>
<td>XX</td>
<td>Special Process Connection</td>
</tr>
</tbody>
</table>

Tri-Clamp connection

<table>
<thead>
<tr>
<th>Tri-Clamp connection</th>
<th>Flange material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT</td>
<td>3 in. Tri-Clamp Flange</td>
<td>SST 316L Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>CT</td>
<td>4 in. Tri-Clamp Flange</td>
<td>SST 316L Longer Lead-time, Consult Factory</td>
</tr>
</tbody>
</table>
Table 2. Cone Antenna Ordering Information

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
<th>Material Traceability Certification per EN 10204 3.1</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT</td>
<td>6 in. Tri-Clamp Flange</td>
<td>SST 316L</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>ET</td>
<td>8 in. Tri-Clamp Flange</td>
<td>SST 316L</td>
<td>Longer Lead-time, Consult Factory</td>
</tr>
<tr>
<td>Q8</td>
<td>Material Traceability Certification per EN 10204 3.1</td>
<td></td>
<td>★</td>
</tr>
</tbody>
</table>

Typical model number: Selected code from Table 1 on page 5 24S P V NR
Table 3. Extended Cone Antenna Ordering Information
The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Antenna type</th>
<th>Antenna size</th>
<th>Antenna material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>73S</td>
<td>3 in. (DN80) nozzles</td>
<td>SST 316L</td>
<td>Standard length 20 inch (500 mm)</td>
</tr>
<tr>
<td>74S</td>
<td>4 in. (DN100) nozzles</td>
<td>SST 316L</td>
<td>Standard length 20 inch (500 mm)</td>
</tr>
<tr>
<td>76S</td>
<td>6 in. (DN150) nozzles</td>
<td>SST 316L</td>
<td>Standard length 20 inch (500 mm)</td>
</tr>
<tr>
<td>7XX</td>
<td>Customer specific extended cone or material</td>
<td>Consult factory</td>
<td></td>
</tr>
</tbody>
</table>

**Tank seal**
- P  PTFE
- Q  Quartz

**O-ring material**
- V  Viton Fluoroelastomer
- K  Kalrez 6375 Perfluoroelastomer
- E  Ethylene Propylene (EPDM)
- B  Nitrile Butadiene (NBR)

**Process connection**
- NR  Antenna with Plate Design
- XX  Special Process Connection

**Options**
- Q8  Material Traceability Certification per EN 10204 3.1

**Note**
- Customer supplied flange or see Table 10 on page 14 for flange options
- Consult factory

Typical model number: Selected code from Table 1 on page 5 76S P V NR
# Table 4. Cone Antenna with Integrated Flushing Connection Ordering Information

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Antenna type</th>
<th>Antenna size</th>
<th>Antenna material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>94S</td>
<td>4 in. (DN100) nozzles</td>
<td>SST 316L</td>
<td>Consult factory</td>
</tr>
<tr>
<td>96S</td>
<td>6 in. (DN150) nozzles</td>
<td>SST 316L</td>
<td>Consult factory</td>
</tr>
<tr>
<td>98S</td>
<td>8 in. (DN200) nozzles</td>
<td>SST 316L</td>
<td>Consult factory</td>
</tr>
</tbody>
</table>

**Tank seal**

| P | PTFE                              |
| Q | Quartz                            |

**O-ring material**

| V | Viton Fluoroelastomer            |
| K | Kalrez 6375 Perfluoroelastomer   |
| E | Ethylene Propylene (EPDM)        |
| B | Nitrile Butadiene (NBR)          |

**Process connection**

| XX | Special Process Connection       |

<table>
<thead>
<tr>
<th>Stainless steel flange welded to antenna</th>
<th>Note(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>4 in. ASME Class 150</td>
</tr>
<tr>
<td>DL</td>
<td>6 in. ASME Class 150</td>
</tr>
<tr>
<td>FL</td>
<td>8 in. ASME Class 150</td>
</tr>
<tr>
<td>JL</td>
<td>DN100 PN16</td>
</tr>
<tr>
<td>KL</td>
<td>DN150 PN16</td>
</tr>
<tr>
<td>LL</td>
<td>DN200 PN16</td>
</tr>
<tr>
<td>CH</td>
<td>4 in. ASME Class 150, SST, Higher Pressure</td>
</tr>
<tr>
<td>DH</td>
<td>6 in. ASME Class 150, SST, Higher Pressure</td>
</tr>
<tr>
<td>FH</td>
<td>8 in. ASME Class 150, SST, Higher Pressure</td>
</tr>
<tr>
<td>JH</td>
<td>DN100 PN16, SST&lt; Higher Pressure</td>
</tr>
<tr>
<td>KH</td>
<td>DN150 PN16, SST&lt; Higher Pressure</td>
</tr>
<tr>
<td>LH</td>
<td>DN200 PN16, SST&lt; Higher Pressure</td>
</tr>
</tbody>
</table>

**Options**

| Q8 | Material Traceability Certification per EN 10204 3.1 |

*Typical model number: Selected code from Table 1 on page 5 94S P K KL*

---

(1) Pressure and Temperature rating may be lower depending on Tank Seal selection.
Table 5. Parabolic Antenna Ordering Information
The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Antenna type</th>
<th>Antenna size</th>
<th>Antenna material</th>
<th>Note</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>45S</td>
<td>Ø18 in. (440mm)</td>
<td>SST</td>
<td>Clamped with Integrated Inclination, Low pressure version</td>
<td>★</td>
</tr>
<tr>
<td>46S</td>
<td>Ø18 in. (440mm)</td>
<td>SST</td>
<td>Welded with Integrated Inclination, High pressure version</td>
<td>★</td>
</tr>
<tr>
<td>4XX</td>
<td>Customer specific</td>
<td>Customer specific</td>
<td>Consult factory</td>
<td></td>
</tr>
</tbody>
</table>

**Tank seal**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank seal</td>
<td>P</td>
<td>PTFE</td>
<td>★</td>
</tr>
</tbody>
</table>

**O-ring material**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O-ring</td>
<td>V</td>
<td>Viton Fluoroelastomer</td>
<td>★</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process connection</th>
<th>Note</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NF</td>
<td>None, Flange Ready</td>
<td>N/A</td>
</tr>
<tr>
<td>XX</td>
<td>Special Process Connection</td>
<td>Consult factory</td>
</tr>
</tbody>
</table>

**Options**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Options</td>
<td>Q8</td>
<td>Material Traceability Certification per EN 10204 3.1</td>
</tr>
<tr>
<td></td>
<td>PB</td>
<td>PTFE Protective Cover (PTFE Bag). Not suitable for hazardous applications.</td>
</tr>
</tbody>
</table>

Typical model number: Selected code from Table 1 on page 5 45S P V NR

(1) Not suitable for use in Ex environments.
## Table 6. Process Seal Antenna Ordering Information

The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Antenna type</th>
<th>Antenna size</th>
<th>Antenna material</th>
</tr>
</thead>
<tbody>
<tr>
<td>34S</td>
<td>4 in. (DN100) nozzles</td>
<td>PTFE</td>
</tr>
<tr>
<td>36S</td>
<td>6 in. (DN150) nozzles</td>
<td>PTFE</td>
</tr>
</tbody>
</table>

**Tank seal**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>PTFE</td>
</tr>
</tbody>
</table>

**O-ring material**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Process connection**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>NF</td>
<td>None, Customer to supply flange per dimensions on Figure 6 and Table 16 on page 33.</td>
<td>N/A</td>
</tr>
<tr>
<td>XX</td>
<td>Special Process Connection</td>
<td>Consult factory</td>
</tr>
</tbody>
</table>

**Stainless steel flange**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Flange material</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>4 in. ASME Class 150</td>
<td>SST 316L</td>
</tr>
<tr>
<td>DA</td>
<td>6 in. ASME Class 150</td>
<td>SST 316L</td>
</tr>
<tr>
<td>JA</td>
<td>DN100 PN16</td>
<td>EN 1.4404</td>
</tr>
<tr>
<td>KA</td>
<td>DN150 PN16</td>
<td>EN 1.4404</td>
</tr>
</tbody>
</table>

**Options**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q8</td>
<td>Material Traceability Certification per EN 10204 3.1</td>
<td>★</td>
</tr>
</tbody>
</table>

**Typical model number:** Selected code from Table 1 on page 5 34S P N JA
Table 7. Transmitter Options Ordering Information (Multiple Selections Allowed)
The starred options (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Options</th>
<th>Material traceability certification</th>
<th>Calibration data certification</th>
<th>Software configuration</th>
<th>Alarm limits</th>
<th>Conduit adapters</th>
<th>Conduit electrical connector(1)</th>
<th>Protective cover</th>
<th>Special procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q8 Material Traceability Certification per EN 10204 3.1</td>
<td>Q4 Calibration Data Certificate</td>
<td>C1 Custom Software Configuration (Configuration Data Sheet required with order, available at <a href="http://www.rosemount.com">www.rosemount.com</a>)</td>
<td>C4 NAMUR Alarm Level, High Alarm</td>
<td>G1 ½ inch NPT Cable Gland Kit</td>
<td>GE M12, 4-pin, Male Connector (eurofast®)</td>
<td>PB PTFE Protective Cover (PTFE Bag)(2)</td>
<td>U1 TÜV Overfill Protection(3)</td>
</tr>
<tr>
<td></td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>GM A size Mini, 4-pin, Male Connector (minifast®)</td>
<td></td>
<td>P1 Hydrostatic Testing(4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>GQ GOST Primary Verification Certificate</td>
</tr>
</tbody>
</table>

| Engineered solutions (see page 24) | Rxxxx Engineered Solutions beyond standard model codes (consult factory for details) |

(1) Not available with certain hazardous location certifications. Contact an Emerson Process Management Representative for details.
(2) For Parabolic Antenna only. Not suitable for hazardous applications.
(3) Requires Secondary Output Code 3 or 4 (Active Output).
(4) Not available in combination with Parabolic Antenna option codes.

Table 8. Typical Model Code Example

<table>
<thead>
<tr>
<th>5601 A E1 P 5A 0 P E 24S P V NR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEX approval, passive HART primary output and display mounted on transmitter. Basic Volume calculation. Antenna is a 4 inch Cone, SST with PTFE Seal and Viton Fluoroelastomer O-rings. No options.</td>
</tr>
</tbody>
</table>
## Accessories

### Table 9. Accessories Part Numbers

<table>
<thead>
<tr>
<th>Modems</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>03300-7004-0001</td>
<td>HART Modem and cables</td>
<td>Viator by MACTek®</td>
</tr>
<tr>
<td>03300-7004-0002</td>
<td>HART USB Modem and cables</td>
<td>Viator by MACTek</td>
</tr>
<tr>
<td>05600-5004-0001</td>
<td>K2 RS485 Modbus Modem</td>
<td>For Sensor Bus Port connection (requires PC with 9-pin Serial port)</td>
</tr>
</tbody>
</table>

### Cone antenna flanges

### Table 10. Non-Welded Flange Part Numbers

<table>
<thead>
<tr>
<th>Stainless steel flanges</th>
<th>Flange size</th>
<th>Dimension</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>05600-1811-0211</td>
<td>2 inch Class 150</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1811-0231</td>
<td>2 inch Class 300</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1811-0311</td>
<td>3 inch Class 150</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1811-0331</td>
<td>3 inch Class 300</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1811-0411</td>
<td>4 inch Class 150</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1811-0431</td>
<td>4 inch Class 300</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1811-0611</td>
<td>6 inch Class 150</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1811-0811</td>
<td>8 inch Class 150</td>
<td>Acc. To ASME B16.5</td>
<td>SST 316L(1)</td>
</tr>
<tr>
<td>05600-1810-0231</td>
<td>DN50 PN40</td>
<td>Acc. To EN 1092-1</td>
<td>EN 1.4404(2)</td>
</tr>
<tr>
<td>05600-1810-0311</td>
<td>DN80 PN16</td>
<td>Acc. To EN 1092-1</td>
<td>EN 1.4404(2)</td>
</tr>
<tr>
<td>05600-1810-0331</td>
<td>DN80 PN40</td>
<td>Acc. To EN 1092-1</td>
<td>EN 1.4404(2)</td>
</tr>
<tr>
<td>05600-1810-0411</td>
<td>DN100 PN16</td>
<td>Acc. To EN 1092-1</td>
<td>EN 1.4404(2)</td>
</tr>
<tr>
<td>05600-1810-0431</td>
<td>DN100 PN40</td>
<td>Acc. To EN 1092-1</td>
<td>EN 1.4404(2)</td>
</tr>
<tr>
<td>05600-1810-0611</td>
<td>DN150 PN16</td>
<td>Acc. To EN 1092-1</td>
<td>EN 1.4404(2)</td>
</tr>
<tr>
<td>05600-1810-0811</td>
<td>DN200 PN16</td>
<td>Acc. To EN 1092-1</td>
<td>EN 1.4404(2)</td>
</tr>
</tbody>
</table>

(1) Use gasket type Ia.
(2) Gasket type according to EN 1514-1 and bolting according to EN1515-2.
# Specifications

## Functional specifications

<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field of Application</strong></td>
</tr>
<tr>
<td><strong>Liquids, slurries, and solids</strong></td>
</tr>
<tr>
<td>- Process vessels with agitators</td>
</tr>
<tr>
<td>- Still-pipe or bridle-pipe mounting</td>
</tr>
<tr>
<td>- Small nozzle openings on tanks with short measuring range</td>
</tr>
<tr>
<td>- Various types of solid materials</td>
</tr>
<tr>
<td><strong>Measurement Principle</strong></td>
</tr>
<tr>
<td>10 GHz Frequency Modulated Continuous Wave (FMCW) radar (see “Measurement principle” on page 2 for details).</td>
</tr>
<tr>
<td><strong>Microwave Output Power</strong></td>
</tr>
<tr>
<td>Max 1.0 mW</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
</tr>
<tr>
<td>Maximum 10 W, Nominal 5 W</td>
</tr>
<tr>
<td><strong>Beam Angle</strong></td>
</tr>
<tr>
<td>See Table 14 on page 23.</td>
</tr>
<tr>
<td><strong>Internal Calibration</strong></td>
</tr>
<tr>
<td>Internal digital reference for automatic compensation of radar sweep</td>
</tr>
<tr>
<td><strong>Signal Processing</strong></td>
</tr>
<tr>
<td>Powerful and advanced digital signal processing using Fast Fourier Transform (FFT) and advanced echo handling software.</td>
</tr>
<tr>
<td><strong>External Power Supply</strong></td>
</tr>
<tr>
<td>Ultra wide 24-240 Vac or dc 0-60 Hz</td>
</tr>
<tr>
<td>The transmitter head has two separate junction boxes. One is for a Non-Intrinsically Safe (Non-IS) primary signal output and power supply cables. The other is normally used for Intrinsically Safe (IS) HART/analog outputs, or optionally, for a non-IS secondary analog output.</td>
</tr>
<tr>
<td>Primary Output is HART, either IS or Non-IS. The HART and secondary analog outputs can be either active or passive.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
</tr>
<tr>
<td>The minimum power required at the transmitter power terminals is 20 V.</td>
</tr>
<tr>
<td><strong>Outputs</strong></td>
</tr>
<tr>
<td><strong>Primary output</strong></td>
</tr>
<tr>
<td>Alternative 1: HART + 4-20 mA current loop (non-IS or IS option)</td>
</tr>
<tr>
<td>Alternative 2: RS-485 with Modbus communication</td>
</tr>
<tr>
<td><strong>Secondary outputs</strong></td>
</tr>
<tr>
<td>Analog 4-20 mA current loop, active (with power supplied by the Rosemount 5600) or passive (for loop-supplied power) (Optional - see page 6)</td>
</tr>
<tr>
<td><strong>Temperature Measurement</strong></td>
</tr>
<tr>
<td>(optional)</td>
</tr>
<tr>
<td>1-3 spot elements, PT100 or Cu90, or 6 spot elements with common return. Input accuracy ±0.9 °F (±0.5 °C). Average temperature or individual spots as output.</td>
</tr>
</tbody>
</table>
### 4-20 mA HART and secondary outputs (optional)
(output option code 5A - 5D) - (see “Primary output” in Table 1 on page 5)

<table>
<thead>
<tr>
<th>Output</th>
<th>HART Revision 5, analog 4-20 mA current loop, and Secondary 4-20 mA Output (Optional, active or passive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosemount 5600 Series Transmitter</td>
<td>4-20 mA with HART and/or 4-20 mA (optional)</td>
</tr>
<tr>
<td>Smart Wireless THUM Adapter</td>
<td>The optional Smart Wireless THUM Adapter can be mounted directly on the transmitter or by using a remote mounting kit. IEC 62591 (WirelessHART) enables access to multi-variable data and diagnostics, and adds wireless to almost any measurement point. See the Rosemount Smart Wireless THUM Adapter Product Data Sheet (document number 00813-0100-4075) and Smart Wireless THUM Adapter for Rosemount Process Level Transmitter Applications (document number 00840-0100-4026).</td>
</tr>
<tr>
<td>Galvanic Isolation</td>
<td>&gt;1500 V RMS or DC</td>
</tr>
<tr>
<td>IS Electrical Parameters</td>
<td>See “Product Certifications” on page 28.</td>
</tr>
<tr>
<td>Signal on Alarm (configurable)</td>
<td>Standard: Low=3.8 mA, High=22 mA or freeze, NAMUR NE43: High=22.50 mA, Rosemount: Low=3.75 mA</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>&gt;10 MΩ</td>
</tr>
<tr>
<td>Analog Output Characteristics (Passive or Active Out Options)</td>
<td>7-30 V</td>
</tr>
<tr>
<td>Load Limitations</td>
<td>&lt;700 Ω (passive output with 24 V external supply) &lt;300 Ω (active output)</td>
</tr>
</tbody>
</table>
## Display and configuration

<table>
<thead>
<tr>
<th>Display</th>
<th>Factory mounted (Option code P)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The Rosemount 2210 offers basic configuration using the 4 soft keys on the display. Data presentation on the LCD can be customized and allows many viewing alternatives by:</td>
</tr>
<tr>
<td></td>
<td>- 6-digit graphical LCD display, 128 x 64 pixels</td>
</tr>
<tr>
<td></td>
<td>- 7 text lines with 16 characters/line</td>
</tr>
<tr>
<td>Remote mounted (Option Code R and T for temperature inputs)</td>
<td>The Rosemount 2210 is available as remote mounted and has optional temperature inputs (1-3 spot elements PT100 or CU90)</td>
</tr>
</tbody>
</table>

| Diagnostics                                  | Failures: level, temperature, and volume measurement failure                                                     |
|                                              | Warnings: empty tank, full tank, database, hardware, software, and configuration warnings                         |
|                                              | Errors: database, hardware, software, and configuration warnings                                                 |

| Configuration Tools                          | Emerson® Field Communicator (e.g. 375/475 Field Communicator), Rosemount Radar Master (RRM) software package (included with delivery of transmitter), Emerson AMS Device Manager or DeltaV® or any other Device Description (DD) compatible host systems. Certificates are available from all major host system vendors. |

**Note**

- To communicate using RRM or AMS Device Manager, a HART modem is required. The HART modem is available as an RS232 or USB version (see “Accessories” on page 14).
- The transmitter can be pre-configured by selecting option code C1 (see “Software configuration” on page 13) and sending a complete Configuration Data Sheet (CDS). The CDS is available from www.rosemount.com.

| Output Units                                 | Level and Distance: ft, inch, m, cm, or mm                                                                     |
|                                              | Volume: ft³, inch³, US gals, Imp gals, barrels, yd³, m³, or liters                                              |
|                                              | Level Rate: ft/s, m/s                                                                                          |
|                                              | Temperature: °F, °C                                                                                            |

| Output Variables                             | Level, Distance, Volume, Level Rate, Signal Strength, Used defined, Temperature (1-6), and Average Temperature |

| Damping                                      | 0-60 s (2 s, default value)                                                                                   |
Temperature and pressure limits

| Ambient Temperature       | -40 to 70 °C (-40 to 158 °F)  
|                          | LCD Readable between: -20 to 70 °C (-4 to 158 °F)  

The final rating depends on antenna, tank seal, and O-ring selection. See Table 11 on page 19 for further details.

**Rosemount 5600 with cone antenna and extended cone antenna**

<table>
<thead>
<tr>
<th>Process Temperature °F (°C)</th>
<th>Pressure psig (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 (-0)</td>
<td>0</td>
</tr>
<tr>
<td>392 (200)</td>
<td>145 (10)</td>
</tr>
<tr>
<td>45S, Clamped version, low pressure</td>
<td></td>
</tr>
<tr>
<td>46S, Welded version, high pressure</td>
<td></td>
</tr>
<tr>
<td>73 psig at 392 °F / 5 bar at 200 °C</td>
<td></td>
</tr>
<tr>
<td>-15 psig at 392 °F / -1.0 bar at 200 °C</td>
<td></td>
</tr>
<tr>
<td>798 psig at 752 °F / 55 bar at 400 °C</td>
<td></td>
</tr>
</tbody>
</table>

**Rosemount 5600 with cone antenna - integrated flushing connection**

Maximum 145 psig at 392 °F (10 bar at 200 °C) or up to 145 psig at 752 °F (10 bar at 400 °C). See Table 4 on page 10 for more information.

**Rosemount 5600 with parabolic antenna**

<table>
<thead>
<tr>
<th>Process Temperature °F (°C)</th>
<th>Pressure psig (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 (-0)</td>
<td>0</td>
</tr>
<tr>
<td>392 (200)</td>
<td>145 (10)</td>
</tr>
<tr>
<td>45S, Clamped version, low pressure</td>
<td></td>
</tr>
<tr>
<td>46S, Welded version, high pressure</td>
<td></td>
</tr>
<tr>
<td>2.9 psig at 392 °F / 0.2 bar at 200 °C</td>
<td></td>
</tr>
<tr>
<td>-2.9 psig at 392 °F / -0.2 bar at 200 °C</td>
<td></td>
</tr>
</tbody>
</table>
Process Temperature and Pressure (continued)

### Rosemount 5600 with process seal antenna

**Pressure psig (bar)**

- 73 (5)
- 29 (2)
- 0
- -15 (-1)

**Process Temperature °F (°C)**

- -40 (-40)
- 32 (0)
- 212 (100)
- 302 (150)
- 392 (200)

- 6” PTFE
- 4” PTFE

- 0 psig at 302 °F / 0 bar at 150 °C
- -15 psig at 40 °F / -1.0 bar at -40 °C
- 29 psig at -40 °F / 2 bar at -40 °C
- 73 psig at -40 °F / 5 bar at -40 °C

---

**ASME / ANSI Flange Rating**
According to ASME B16.5

**EN Flange Rating**
According to EN 1092-1

---

**Temperature Rating Considerations**

<table>
<thead>
<tr>
<th>Process Temperature measured here</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-rings</td>
</tr>
</tbody>
</table>

**Note**

Flange temperature depends on mounting conditions, such as nozzle position, distance to maximum product level, nozzle height, presence of insulation, etc.

---

(1) Pressure rating may be lower depending on flange selection. Minimum / maximum flange temperature rating depends on O-ring selection. For further information, see Table 11 on page 19.

---

### Table 11. Flange Temperature Range Depending on O-ring Selection

<table>
<thead>
<tr>
<th>O-ring material</th>
<th>Minimum temperature °F (°C) in air</th>
<th>Maximum temperature °F (°C) in air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viton Fluoroelastomer</td>
<td>5 (-15)</td>
<td>392 (200)(1)</td>
</tr>
<tr>
<td>Kalrez 6375 Perfluoroelastomer</td>
<td>-4 (-20)</td>
<td>392 (200)(1)</td>
</tr>
<tr>
<td>Ethylene Propylene (EPDM)</td>
<td>-40 (-40)</td>
<td>266 (130)</td>
</tr>
<tr>
<td>Nitrile butadiene (NBR)</td>
<td>-31 (-35)</td>
<td>230 (110)</td>
</tr>
</tbody>
</table>

(1) For Quartz seal maximum process temperature is 752 °F (400 °C), provided that the O-rings do not exceed the temperature listed in Table 11 above. O-rings are not pressure retaining in this configuration.
## Performance specifications

<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reference Conditions</strong></td>
</tr>
<tr>
<td>Metal plate with no disturbing objects</td>
</tr>
<tr>
<td>Temperature: 68 °F (20 °C)</td>
</tr>
<tr>
<td>Pressure: 14 - 15 psi (960 - 1060 mbar)</td>
</tr>
<tr>
<td>Humidity: 25 - 75% RH</td>
</tr>
<tr>
<td>Reference Measuring Range: 1.64 - 98 ft. (0.5 - 30 m)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Instrument Accuracy (under reference conditions)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.2 in. (±5 mm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Repeatability</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.04 in. (±1 mm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Resolution</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.04 in. (1 mm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ambient Temperature Effect</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>±500 ppm of measured distance within the ambient temperature range</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Update Interval</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>100 ms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Linearity</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.01%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Analog Out Temperature Drift</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>±28 ppm/°F (±50 ppm/°C)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Analog Out Accuracy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>±300 μA at 4 mA</td>
</tr>
<tr>
<td>±600 μA at 20 mA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Analog Out Resolution</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 μA (0.003%)</td>
</tr>
</tbody>
</table>
Measuring range and minimum dielectric constant

- 0-164 ft. (0-50 m) Standard
- 0-324 ft. (0-99 m) Optional, requires special configuration

The measuring range depends on:
- antenna type
- the dielectric constant of the liquid ($\varepsilon_r$) (min. $\varepsilon_r=1.4$)
- process conditions

See Table 12 on page 22 and Table 13 on page 23 for measuring range and minimum dielectric constant values. For more information, ask your local Emerson Process Management representative.

For liquids with $\varepsilon_r$ that are smaller than 1.8 such as liquefied gases, an 8-inch or bigger diameter antenna is recommended if measurement is done with free propagation. In this case, the measuring range in calm surface tanks is 50 ft (15 m).

The 5600 transmitter installed in a pipe can measure products with a dielectric $\geq 1.4$.

Beam angle and beamwidth

For detailed information on the beam angle and beam width for the Rosemount 5600 Series, see Table 14 on page 23.

<table>
<thead>
<tr>
<th>Distance</th>
<th>16 ft (5 m)</th>
<th>33 ft (10 m)</th>
<th>49 ft (15 m)</th>
<th>66 ft (20 m)</th>
</tr>
</thead>
</table>

Environment

- Vibration Resistance: IEC 721-3-4 class 4M4
- EU Directive Compliance: Complies with 93/98/EEC
- Transient / Built-in Lightning Protection: EN61326, EN61000-4-5, IEC801-5, level 2 kV
- Humidity: IEC 60068-2-3
Radio Approvals

FCC: Part 15C (K8CPR0 & K8CPR0X: Note: This device must be professionally installed and is only authorized for use on sealed metal links)

R&TTE: ETSI EN 302 372 (Note: This device must be installed at a permanent fixed position at a closed (not open) metallic tank or reinforced concrete tank, or similar enclosure structure made of comparable attenuating material)

IC: RSS210-5 (2827A-5600PRO)

Climatic Class/Corrosion Class

IEC 68-2-1, IEC 60068-2-52 test KB severity 2

UV Protection

ISO 4892-2

Power Supply Fluctuation

IEC 92 Part 504 sec. 3.5

---

### Table 12. Rosemount 5600, Recommended Measuring Range for Optimum Performance, ft (m)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-in. Cone</td>
<td>41 (12.5)</td>
<td>57 (17.5)</td>
<td>69 (21)</td>
<td>20 (6)</td>
<td>30 (9)</td>
<td>34 (10.5)</td>
<td>8 (2.5)</td>
<td>8 (2.5)</td>
<td>11 (3.5)</td>
</tr>
<tr>
<td>4-in. Process Seal</td>
<td>36 (11)</td>
<td>38 (11.5)</td>
<td>49 (15)</td>
<td>23 (7)</td>
<td>30 (9)</td>
<td>33 (10)</td>
<td>3 (1)(2)</td>
<td>7 (2)(2)</td>
<td>11 (3.5)(2)</td>
</tr>
<tr>
<td>6-in. Process Seal</td>
<td>49 (15)</td>
<td>56 (17)</td>
<td>57 (17.5)</td>
<td>30 (9)</td>
<td>36 (11)</td>
<td>39 (12)</td>
<td>5 (1.5)(2)</td>
<td>10 (3)(2)</td>
<td>20 (6)(2)</td>
</tr>
<tr>
<td>4-in. Cone</td>
<td>66 (20)</td>
<td>72 (22)</td>
<td>82 (25)</td>
<td>43 (13)</td>
<td>49 (15)</td>
<td>56 (17)</td>
<td>7 (2)(2)</td>
<td>16 (5)(2)</td>
<td>25 (7.5)(2)</td>
</tr>
<tr>
<td>6-in. Cone</td>
<td>82 (25)</td>
<td>95 (29)</td>
<td>107 (32.5)</td>
<td>49 (15)</td>
<td>62 (19)</td>
<td>69 (21)</td>
<td>15 (4.5)(2)</td>
<td>21 (6.5)(2)</td>
<td>33 (10)(2)</td>
</tr>
<tr>
<td>8-in. Cone</td>
<td>99 (30)</td>
<td>131 (40)</td>
<td>131 (40)</td>
<td>72 (22)</td>
<td>82 (25)</td>
<td>95 (29)</td>
<td>21 (6.5)</td>
<td>36 (11)</td>
<td>44 (14)</td>
</tr>
<tr>
<td>Parabolic</td>
<td>115 (35)</td>
<td>164 (50)</td>
<td>164 (50)</td>
<td>80 (24.5)</td>
<td>97 (29.5)</td>
<td>113 (34.5)</td>
<td>33 (10)</td>
<td>56 (17)</td>
<td>66 (20)</td>
</tr>
<tr>
<td>3-6-in. Cone in Still-Pipe</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>99 (30)</td>
<td>99 (30)</td>
<td>99 (30)</td>
</tr>
</tbody>
</table>

(1) A. Oil, gasoline and other hydrocarbons, petrochemicals (dielectric constant, \( \varepsilon_r = 1.9-4.0 \)), in pipes (\( \varepsilon_r > 1.4 \))

B. Alcohols, concentrated acids, organic solvents, oil/water mixtures, and acetone (\( \varepsilon_r = 4.0-10 \))

C. Conductive liquids, e.g. water based solutions, dilute acids, and alkalis (\( \varepsilon_r > 10 \))

(2) Not recommended.
Table 13. Rosemount 5600, Maximum Recommended Measuring Range, ft (m)

<table>
<thead>
<tr>
<th>Antenna type &amp; beam angle</th>
<th>Distance, ft (m)</th>
<th>16 (5)</th>
<th>33 (10)</th>
<th>49 (15)</th>
<th>66 (20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cone 3 in 25°</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beam diameter, ft (m)</td>
<td>7.2 (2.2)</td>
<td>14 (4.4)</td>
<td>22 (6.7)</td>
<td>29 (8.9)</td>
</tr>
<tr>
<td>Cone 4 in/ Process Seal 4 inch 21°</td>
<td></td>
<td>6.2 (1.9)</td>
<td>12 (3.7)</td>
<td>18 (5.6)</td>
<td>24 (7.4)</td>
</tr>
<tr>
<td>Cone 6 in/ Process Seal 6 inch 18°</td>
<td></td>
<td>5.2 (1.6)</td>
<td>10 (3.1)</td>
<td>15 (4.7)</td>
<td>21 (6.3)</td>
</tr>
<tr>
<td>Cone 8 inch 15°</td>
<td></td>
<td>4.3 (1.3)</td>
<td>8.5 (2.6)</td>
<td>13 (3.9)</td>
<td>17 (5.3)</td>
</tr>
<tr>
<td>Parabolic 10°</td>
<td></td>
<td>3.0 (0.9)</td>
<td>5.6 (1.7)</td>
<td>8.5 (2.6)</td>
<td>11 (3.5)</td>
</tr>
</tbody>
</table>

(1) A. Oil, gasoline and other hydrocarbons, petrochemicals (dielectric constant, $\varepsilon_r=1.9-4.0$), in pipes ($\varepsilon_r>1.4$)
B. Alcohols, concentrated acids, organic solvents, oil/water mixtures, and acetone ($\varepsilon_r=4.0-10$)
C. Conductive liquids, e.g. water based solutions, dilute acids, and alkalis ($\varepsilon_r>10$)

(2) Not recommended.

Table 14. Rosemount 5600 Beam Diameter and Angle

<table>
<thead>
<tr>
<th>Antenna type &amp; beam angle</th>
<th>Distance, ft (m)</th>
<th>16 (5)</th>
<th>33 (10)</th>
<th>49 (15)</th>
<th>66 (20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beam diameter, ft (m)</td>
<td>7.2 (2.2)</td>
<td>14 (4.4)</td>
<td>22 (6.7)</td>
<td>29 (8.9)</td>
</tr>
<tr>
<td>Cone 3 in 25°</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cone 4 in/ Process Seal 4 inch 21°</td>
<td></td>
<td>6.2 (1.9)</td>
<td>12 (3.7)</td>
<td>18 (5.6)</td>
<td>24 (7.4)</td>
</tr>
<tr>
<td>Cone 6 in/ Process Seal 6 inch 18°</td>
<td></td>
<td>5.2 (1.6)</td>
<td>10 (3.1)</td>
<td>15 (4.7)</td>
<td>21 (6.3)</td>
</tr>
<tr>
<td>Cone 8 inch 15°</td>
<td></td>
<td>4.3 (1.3)</td>
<td>8.5 (2.6)</td>
<td>13 (3.9)</td>
<td>17 (5.3)</td>
</tr>
<tr>
<td>Parabolic 10°</td>
<td></td>
<td>3.0 (0.9)</td>
<td>5.6 (1.7)</td>
<td>8.5 (2.6)</td>
<td>11 (3.5)</td>
</tr>
</tbody>
</table>
### Physical specifications

<table>
<thead>
<tr>
<th>Material selection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Material Selection</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing and enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
</tr>
</tbody>
</table>

| **Electrical Connections** | 3 X ½ inch NPT; for cable glands or conduit entries <br>Optional: 1/2 inch NPT Cable Gland Kit, 1/2 inch NPT / M20 Adapters (Set of 3) <br>Optional remote display (option code R and T): 2 x M20 Entries, 1 x M25 Entry; max. cable length display - radar transmitter: 330 ft (100 m) <br>The recommended output cabling is a 4-wire, twisted and shielded instrument cable, min. 0.5 mm² (AWG 20). |

| **Housing Material** | Permanent moulded cast aluminum, chromed and powder painted |
| **Ingress Protection** | IP66, IP 67, and NEMA 4 |
| **Ingress Protection - Remote Display** | IP 67, mounted in separate enclosure with weather/dirt protection cover |
| **Factory Sealed** | See CSA Approvals information on page 28. |
| **Weight** | Transmitter Head (TH): 19.8 lb (9.0 kg) |

### Engineered solutions

<table>
<thead>
<tr>
<th>Rxxxx</th>
</tr>
</thead>
<tbody>
<tr>
<td>When standard model codes are not sufficient to fulfill requirements, please consult the factory to explore possible Engineered Solutions. This is typically, but not exclusively, related to the choice of wetted materials or the design of a process connection. These Engineered Solutions are part of the expanded offerings and may be subject to additional delivery lead time. For ordering, factory will supply a special R-labeled numeric option code that should be added at the end of the standard model string. See example model string below.</td>
</tr>
</tbody>
</table>

**Example Model String:** 5601-A-E1-P-5A-0-P-E-24S-P-V-NR-R1234
### Tank connection and antennas

<table>
<thead>
<tr>
<th>Tank Connection</th>
<th>The tank connection consists of a tank seal and a flange. Cone antennas, except for the Cone antennas with Integrated Flushing Connection, are designed with a protective plate. The plate and antenna (SST or optional material) together with the tank seal (PTFE or Quartz) and o-rings are the wetted parts exposed to the tank atmosphere. This allows the use of an existing flange, or a lower cost flange alternative. Loose flanges are also available (see Table 10 on page 14).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flange Dimensions</td>
<td>Follow ASME, EN standard Material: Stainless steel 316L and Stainless Steel EN 1.4404</td>
</tr>
</tbody>
</table>
| Antennas | Cone, Parabolic, and Process Seal antennas. Extended Cone Antennas are available in SST 316L. Cone Antennas are available with flushing connections (½-in. NPT).  
**Cone antenna**  
- Suitable for free-propagation and pipe-mounted installation  
- Cone extensions are available (see Table 3 on page 9)  
- Optional Cone antennas with cleaning/flushing connection are available (see Table 4 on page 10)  

**Parabolic antenna**  
- Suitable for solid materials (for example, cement)  
- Withstand heavy contamination  
- Can be equipped with a PTFE protective cover to reduce the effects of dusty environments  

**Process seal antenna**  
- The dish of the Process Seal is made of PTFE  
- Only exposes material suitable for hygienic or corrosive applications (see Figure 5 on page 33 and Table 6 on page 12) |
| Antenna Dimensions | Cone Antenna: See Figure 1 on page 31  
Extended Cone Antenna: See Figure 2 on page 31  
Cone Antenna with Integrated Flushing Connection: See Figure 3 on page 32  
Parabolic Antenna: See Figure 4 on page 32  
Process Seal Antenna: See Figure 5 on page 33 and Table 16 on page 33 |
| Antenna Weight | 3-in. Cone Antenna: 2.20 lb. (1.0 kg)  
4-in. Cone Antenna: 3.31 lb. (1.5 kg)  
6-in. Cone Antenna: 4.41 lb. (2.0 kg)  
8-in. Cone Antenna: 6.61 lb. (3.0 kg)  
Parabolic Antenna: 17.6 lb. (8.0 kg)  
4-in. Process Seal Antenna: 4.41 lb. (2.0 kg)  
6-in. Process Seal Antenna: 5.51 lb. (2.5 kg) |
### Material Exposed to Tank Atmosphere

<table>
<thead>
<tr>
<th>Cone antenna (PTFE sealing)</th>
<th>Cone antenna (Quartz sealing)</th>
<th>Parabolic antenna</th>
<th>Process seal antenna</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Antenna: 316L SST (EN1.4404) or Alloy C-22 or Alloy 400</td>
<td>- Antenna: 316L SST (EN1.4404) or Alloy C-22 or Alloy 400</td>
<td>- Antenna: 316L SST</td>
<td>- Antenna: PTFE fluoropolymer</td>
</tr>
<tr>
<td>- Sealing: PTFE fluoropolymer</td>
<td>- Sealing: Quartz or Graphite</td>
<td>- Sealing: FEP/PTFE fluoropolymer</td>
<td></td>
</tr>
<tr>
<td>- O-rings: Viton fluoroelastomer or Kalrez 6375 perfluoroelastomer or Ethylene propylene or Nitrile butadiene</td>
<td>- O-rings: Viton fluoroelastomer or Kalrez 6375 perfluoroelastomer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Installation and Mounting Considerations

**Cone antenna (PTFE sealing)**
- Antenna: 316L SST (EN1.4404) or Alloy C-22 or Alloy 400
- Sealing: PTFE fluoropolymer
- O-rings: Viton fluoroelastomer or Kalrez 6375 perfluoroelastomer or Ethylene propylene or Nitrile butadiene

**Cone antenna (Quartz sealing)**
- Antenna: 316L SST (EN1.4404) or Alloy C-22 or Alloy 400
- Sealing: Quartz or Graphite
- O-rings: Viton fluoroelastomer or Kalrez 6375 perfluoroelastomer

**Parabolic antenna**
- Antenna: 316L SST
- Sealing: FEP/PTFE fluoropolymer

**Process seal antenna**
- Antenna: PTFE fluoropolymer

#### Mechanical Mounting Considerations

The 5600 radar transmitter is easily carried to the tank top and mounted on a suitable nozzle or pipe.

The radar transmitter should be installed as follows:
- Antenna oriented perpendicular to a horizontal surface.
- The transmitter should be mounted with as few fittings as possible within the beam angle.
- Filling inlets creating turbulence should preferably be kept at a distance.
- Choose as large antenna diameter as possible. A larger diameter concentrates the radar beam and ensures maximum antenna gain. Increased antenna gain offers greater reflection of weak surface echoes.

![Diagram of radar transmitter installation](image)

For best measurement performance the nozzle height should be shorter than the antenna or consider an extended cone (see Figure 2 on page 31) for your current transmitter.

Recommended minimum distance for all antennas. (Shorter distance may apply, consult factory).

#### Pipe/Chamber Installations

If used correctly, pipe or chamber measurement can be advantageous in many applications:
- Use cone antennas (3 to 6 in.)
- The gap between the cone antenna and the still-pipe is limited to 0.4 in. (10 mm)
## Table 15. Antenna Material and O-ring Selection

<table>
<thead>
<tr>
<th>Material</th>
<th>Cone antenna</th>
<th>Extended cone antenna</th>
<th>Cone with integrated flushing connection</th>
<th>Parabolic antenna</th>
<th>Process seal antenna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel 316L</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>-</td>
</tr>
<tr>
<td>Alloy C22</td>
<td>●</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Titanium Gr1/Gr2</td>
<td>●</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tantalum</td>
<td>●</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alloy 400</td>
<td>●</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PTFE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>●</td>
</tr>
</tbody>
</table>

### Tank Seal

<table>
<thead>
<tr>
<th>Material</th>
<th>Cone antenna</th>
<th>Extended cone antenna</th>
<th>Cone with integrated flushing connection</th>
<th>Parabolic antenna</th>
<th>Process seal antenna</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTFE</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>-</td>
</tr>
<tr>
<td>Quartz</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### O-Rings

<table>
<thead>
<tr>
<th>Material</th>
<th>Cone antenna</th>
<th>Extended cone antenna</th>
<th>Cone with integrated flushing connection</th>
<th>Parabolic antenna</th>
<th>Process seal antenna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viton Fluoroelastomer</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>-</td>
</tr>
<tr>
<td>Kalrez 6375 Perfluoroelastomer</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ethylene Propylene (EPDM)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nitrile butadiene (NBR)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Applicable
- Not applicable
Product Certifications

Approved Manufacturing Locations
Rosemount Tank Radar AB – Gothenburg, Sweden

FCC and IC Approvals
This device complies with Part 15 and Part 90 of the FCC Rules. This device complies with IC RSS210.

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

EU Conformity
The most recent revision of the EC declaration of conformity can be found at www.rosemount.com.

Canadian Registration Number (CRN)
The product design of the Cone and the Parabolic Antenna has been accepted and registered for use in Canada.

<table>
<thead>
<tr>
<th>Antenna</th>
<th>CRN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cone</td>
<td>0F15641.5</td>
</tr>
<tr>
<td>Parabolic</td>
<td>0F15904.5</td>
</tr>
</tbody>
</table>

Overfill Protection Certificates

DIBt Certificate No.: Z-65.16-417

U1 TÜV - tested and DIBt approved for overfill protection according to the German WHG regulations.

Hazardous locations certifications

North American certifications

Factory Mutual (FM) Approvals

E5 Explosion-proof

5600 Series Transmitter
Certificate No.: 4D5A9.AX
Explosion-proof for use in Class I, Division 1, Groups A, B, C and D with Intrinsically Safe Connections to Class I, Division 1, Groups A, B, C and D, T6; Dust-Ignition-proof for use in Class II, III, Division 1, Groups E, F and G, T5, Ta=+70 °C; Type 4X; in accordance with Entity requirements and system control drawing 9150074-994.

2210 Display Unit
Certificate No.: 3008356
Intrinsically Safe (Entity) for use in Class I, Division 1, Group A, B, C, and D; Ta=+70 °C; Type 4; T4; in accordance with Entity requirements and system control drawing 9150074-997.

Canadian Standards Association (CSA Approvals)

E6 Explosion-proof

5600 Series Transmitter
Certificate No.: 1346169
Ex de IIC T6
Shall be installed in accordance with drawing 9150074-937.
Factory seal, conduit seal not required.
Rated 24 - 240V AC, 10W; Ta=+70 °C; 300Ω max.
Up to two inputs 7 - 30V, 4 - 20mA; Up to two outputs 4 - 20mA, or Digital outputs TRL2bus or Profibus DP

Ex de [ib/ia] IIC T6
Shall be installed in accordance with drawing 9150074-939
Factory seal, conduit seal not required.
Rated 24 - 240V AC; 10W;
Intrinsically Safe Display Output with entity parameters
Uo=7.84V, Io=385.6mA, Po=0.678W, Lo=0.17mH, Co=8.8μF; up to two Intrinsically Safe Inputs with entity parameters
Ui=30V, Ii=200mA, Pi=1.3W, Li=0mH, Ci=0μF and
Ui=30V, Ii=300mA, Pi=1.3W, Li=0mH, Ci=0μF; up to two Intrinsically Safe Outputs with entity parameters
Uo=23.1V, Io=125.7mA, Po=0.726W, Lo=2.2mH, Co=0.14μF or Digital outputs TRL2bus or Profibus DP

Cone Antenna
Parabolic Antenna

CRN: 0F15641.5
CRN: 0F15904.5
2210 Display Unit
Certificate No.: 1346165

Without Temperature Inputs
Intrinsically safe Ex ib IIC T4 (-40 °C ≤ Tamb ≤ +70 °C)
Shall be installed in accordance with drawing 9150074-944

With Temperature Inputs
Intrinsically safe Ex ib [ia] IIC T4 (-40 °C ≤ Tamb ≤ +70 °C)
Shall be installed in accordance with drawing 9150074-944

European certifications

E1 ATEX Flameproof

5600 Series Transmitter
Certificate No.: Sira03ATEX1294X

Non-IS Outputs (Primary, Secondary)
II 1/2 GD
Ex de IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex t IIC T85 °C Db IP65

IS Outputs (Primary, Secondary and Display) alt. with Non-IS Primary Outputs
II (2) (1) 1/2 GD
Ex de [ib] [ia] IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex t IIC T85 °C Db IP65

IS Outputs (Display) alt. with Non-IS Primary Outputs
II (1) 1/2 GD
Ex de [ia] IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex t IIC T85 °C Db IP65

Rated 24 - 240V DC/AC; 10W;
Intrinsically Safe Display Output with entity parameters:
Uo = 7.84 V; Io = 385.6 mA; Po = 0.678 W; Ci = 0; Li = 0;
Co = 9.3 μF; Lo = 239 μH; Lo/Ro = 52.8 μH/ohm
Intrinsically Safe Inputs with entity parameters:
Passive 4-20 mA /HART model (Label identification = HART passive)
Voltage compliance 7-30 V
Ui = 30 V; li = 200 mA; Ci = 0; Li = 0; Uo = 0; Io = 0;
Um = 250 V
Intrinsically Safe Outputs with entity parameters:
Active 4-20 mA /HART model (Label identification = HART active)
Uo=23.1V; Io=125.7mA; Pout=0.726W; Cext =0.14μF;
Lext = 2.2 mH; Ci=0; Li=0
Display Interface
Uo = 7.21 V; Lext = 0.315 mH; Io = 336 mA; Ci = 0;
Po = 0.547 W; Li = 0; Cext = 25 μF; Lo/Ro 65 μH/Ohm

Special Conditions for Safe Use (X):
As light alloys may be used as the enclosure (or other parts) they may be at the accessible surface of this equipment, in the event of rare incidents, ignition sources due to impact and friction sparks could occur. This shall be considered when the equipment is being installed in locations that specifically require Group II, Category 1G equipment.

Under certain extreme circumstances, the non-metallic parts of the equipment may be capable of generating an ignition-capable level or electrostatic charge. Therefore, when used for applications that specifically require Group II, Category 1 equipment, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. Additionally, the equipment non-metallic parts shall only be cleaned with a damp cloth.

2210 Display Unit
Certificate No.: Sira 00ATEX2062

Without Temperature Inputs
II 2 G Ex ib IIC T4 Gb (-40 °C ≤ Ta ≤ +70 °C)

With Temperature Inputs
II 2 (1) G Ex ib [ia Ga] IIC T4 Gb (-40 °C ≤ Ta ≤ +70 °C)

EAC certifications

Technical Regulations Customs Union (EAC)
EM, IM: Contact an Emerson Process Management representative for additional information.

Brazilian certifications

INMETRO Flameproof

5600 Series Transmitter
Certificate number: NCC 5100/08X
Refer to Certificates for SPECIAL CONDITIONS FOR SAFE USE (X)

Standards:
ABNT NBR IEC 60079-0:2008
ABNT NBR IEC 60079-1:2009
ABNT NBR IEC 60079-7:2008
ABNT NBR IEC 60079-11:2009
ABNT NBR IEC 60079-26:2008
ABNT NBR IEC 60529:2005
Chinese certifications

China Flameproof

**5600 Series Transmitter**

NEPSI Certificate No.: GYJ13.1446.X

Refer to Certificates for SPECIAL CONDITIONS FOR SAFE USE (X)

Ex de IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex de [ib] [ia] IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex de [ia] IIC T6 Ga/Gb (-40 °C to +70 °C)

DIP A20 TA T85 °C IP65

IECEx Approvals

**E7** IECEx Flameproof

**5600 Series Transmitter**

Certificate No.: IECEx Sira05.0024X

*Non-IS Outputs (Primary, Secondary)*

Ex de IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex t IIIC T85 °C Db IP65

*IS Outputs (Primary, Secondary and Display) alt. with Non-IS Primary Outputs*

Ex de [ib] [ia] IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex t IIIC T85 °C Db IP65

*IS Outputs (Display) alt. with Non-IS Primary Outputs*

Ex de [ia] IIC T6 Ga/Gb (-40 °C to +70 °C)
Ex t IIIC T85 °C Db IP65

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

As light alloys may be used as the enclosure (or other parts) they may be at the accessible surface of this equipment, in the event of rare incidents, ignitions sources due to impact and friction sparks could occur. This shall be considered when the equipment is being installed in hazardous locations.

Under certain extreme circumstances, the non-metallic parts of the equipment may be capable of generating an ignition-capable level or electrostatic charge. The equipment shall only be cleaned with a damp cloth.

**2210 Display Unit**

Certificate No.: IECEx SIR 05.0021

*Without Temperature Inputs*

Ex ib IIC T4 Gb (-40 °C ≤ Ta ≤ +70 °C)

*With Temperature Inputs*

Ex ib [ia Ga] IIC T4 Gb (-40 °C ≤ Ta ≤ +70 °C)
Dimensional Drawings

Figure 1. Cone Antenna

Dimensions are in inches (millimeters).

Figure 2. Extended Cone Antenna

Dimensions are in inches (millimeters).

Note
Other extended cone lengths are also available upon request; consult factory.
Figure 3. Cone Antenna with Integrated Flushing Connection

Dimensions are in inches (millimeters).

Figure 4. Parabolic Antenna

Dimensions are in inches (millimeters).
Figure 5. Process Seal Antenna

Dimensions are in inches (millimeters).

![Process Seal Antenna Diagram]

21.65 (550) 4-in. process seal
25.59 (650) 6-in. process seal

6.30 (160) 4-in. process seal
8.58 (218) 6-in. process seal

Figure 6. Process Seal Flange

![Process Seal Flange Diagram]

Area for Marking

Table 16. Dimensions for Stainless Steel Flange are in Inches (millimeters)

<table>
<thead>
<tr>
<th>Flange</th>
<th>Di</th>
<th>D</th>
<th>Dh</th>
<th>Ds</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASME 4 inch Class 150</td>
<td>3.78 (96)</td>
<td>9.02 (229)</td>
<td>7.52 (191)</td>
<td>0.87 (22)</td>
<td>0.94 (23.8)</td>
</tr>
<tr>
<td>ASME 6 inch Class 150</td>
<td>4.94 (125.5)</td>
<td>10.98 (279)</td>
<td>9.49 (241)</td>
<td>0.87 (22)</td>
<td>1.0 (25.4)</td>
</tr>
<tr>
<td>DN100 PN16</td>
<td>3.78 (96)</td>
<td>8.66 (220)</td>
<td>7.09 (180)</td>
<td>0.71 (18)</td>
<td>0.79 (20.0)</td>
</tr>
<tr>
<td>DN150 PN16</td>
<td>4.94 (125.5)</td>
<td>11.22 (285)</td>
<td>9.45 (240)</td>
<td>0.87 (22)</td>
<td>0.87 (22.0)</td>
</tr>
</tbody>
</table>