Advanced sensor technology.
The VITO MTT temperature & water probe together with Honeywell Enraf automatic tank gauging equipment is the answer for accurate inventory management on tanks containing product and free water. VITO MTT uses industry leading Multiple Thermosensor Thermometer sensing technology for reliable measurement of average product temperature, water bottom level, vapor temperature and temperature profiles. It is also fully compliant with legal metrology requirements and API MPMS Chapter 7, Section 3. A robust design, meanwhile, ensures minimal maintenance and easy installation.

## Technical Specifications

### Temperature Sensing: 766 VITO Temperature & Water Probe

#### Principle
- Measuring principle: Cold junction compensated thermocouples (type T) to measure the temperature differentials with respect to a 4 wire 1/5 DIN Class A Pt100 reference resistor, physically embedded to cold junction.

#### Number of elements
- 16 temperature elements

#### Measuring Specifications
- **766 Probe temp. range**: -55 °C to +135 °C (-67 °F to +275 °F)
- **Storage temperature**: -55 °C to +135 °C (-67 °F to +275 °F)
- **Probe accuracy**: ±0.1 °C (±0.18 °F) *1
- **Measuring resolution**: 0.01 °C (0.01 °F)
- **Measuring length**: Refer to Identification Code (also see dimensional drawing). For longer probes consult factory.

### Water Sensing: 766 VITO Temperature & Water Probe

#### Principle
- Principle: PTFE sheathed capacitive probe

#### Measuring Specifications
- **Measuring range**: Depending on identification code, 50 cm (20"), 100 cm (39") and 200 cm (79")
- **Accuracy**: ±2 mm (0.078") *1, water is measured only between 0 °C to +100 °C (+32 °F to +212 °F) process temperature range.
- **Measuring resolution**: 0.1 mm (0.004")
- **Minimum water level**: 25 mm (0.98")

### General: 766 VITO Temperature & Water Probe

#### Mechanical
- **Sheathing**: Stainless steel AISI 316L (mat. no. 1.4404) corrugated probe
- **Adjusting pipe**: Stainless steel AISI 316L (mat. no. 1.4404), adjustable length: ±230 mm (±9"), ISO 228/1-G1/2B (1/2" BSP)
- **Lining water probe**: PFA (fluoropolymer)
- **Outer diameter of probe**: 40 mm (1.57")
- **Mounting flange**: Optional, 1/2 BSP threaded mounting hole required
- **Anchor weight**: Optional, max. 23 kg (50 lb)

#### Environmental Safety
- **Operating pressure**: 5 bar / 500 kPa (72 psi) Hydrostatic pressure
- **Safety**: – II 1G Ex ia IIB T4 Ga; acc. to ATEX KEMA 01ATEX1212
  - Ex ia IIB T4 Ga; acc. to IECEEx KEM 05.0014
  - Ex ia IIB Ta; acc. to Kosha certificate; 13-AV4BO-0487
  - Class I, Division 1, Groups C & D; acc. to FM I. D. 3015746
  - Class I, Division 1, Groups C & D; acc. to CSA certificate 1635480
  - Ex ia IIB T4 Ga; acc. to INMETRO TÜV 13.0975 X
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- **For other approvals and updates please consult factory**

#### Electrical
- **Flying lead length**: Color coded PTFE insulated stranded wires. Length: 35 cm (14") and 120 cm (47")

### 762 VITO Interface

#### Specifications
- **Application**: An electronic converter used in combination with the VITO probes
- **Data communication**: HART® communication to Tank Gauging ATG *2
- **Ambient temp. range**: -40 °C to +60 °C (-40 °F to +140 °F)
- **Storage temperature**: -40 °C to +60 °C (-40 °F to +140 °F)
- **Cable entry**: Cable entry options; M20 x 1.5, 3/4" NPT via reducer and PG16 via reducer
- **Mounting**: Direct on VITO probes using standard 1/2" BSP entry
- **Housing**: Chromatized, Polyurethane coated Aluminum, GD-AISi10Mg
- **Ingress protection**: IP66 / IP67 according to EN 60529 (NEMA 4X)
- **Safety**: – II 1/2G Ex ia IIB T4 Ga/Gb; acc. to ATEX KEMA 01ATEX1212
  - Ex ia IIB T4 Ga/Gb; acc. to IECEEx KEM 05.0014
  - Ex ia IIB Ta; acc. to Kosha certificate; 13-AV4BO-0487
  - Class I, Division 1, Groups C & D; acc. to FM I. D. 3015746
  - Class I, Division 1, Groups C & D; acc. to CSA certificate 1635480
  - Ex ia IIB T4 Ga/Gb; acc. to INMETRO TÜV 13.0975 X
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  - Ex ia IIB T4 Ga/Gb; acc. to INMETRO TÜV 13.0975 X
- **For other approvals and updates please consult factory**

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**Note(s):**

*1 Under reference conditions.

*2 HART® is a registered trademark of the HART Communications Foundation.
Identification Code: 766 VITO Temperature & Water Probe

<table>
<thead>
<tr>
<th>Pos 1</th>
<th>W&amp;M Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>General purpose</td>
</tr>
<tr>
<td>B</td>
<td>With W&amp;M type approval (only for temperature)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 2</th>
<th>Sensitive Length for Water Bottom Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>050 cm</td>
</tr>
<tr>
<td>B</td>
<td>100 cm</td>
</tr>
<tr>
<td>C</td>
<td>200 cm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 3</th>
<th>Safety Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ATEX Europe</td>
</tr>
<tr>
<td>B</td>
<td>FM USA</td>
</tr>
<tr>
<td>C</td>
<td>INMETRO Brazil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 4</th>
<th>Length Flying Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>35 cm (standard)</td>
</tr>
<tr>
<td>B</td>
<td>120 cm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 5, 6, 7</th>
<th>Product Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 6 6 VITO temperature and water probe</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 8</th>
<th>Position of Lowest Temperature Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Lowest element at minimum 1 meter from bottom of probe (acc. API)</td>
</tr>
<tr>
<td>B</td>
<td>Lowest element at bottom of probe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 9, 10, 11, 12</th>
<th>Overall Length in Steps of 10 cm (Price per Meter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Range 0420 - 3390 if Pos 2 = A</td>
</tr>
<tr>
<td>B</td>
<td>Range 0470 - 3390 if Pos 2 = B</td>
</tr>
<tr>
<td>C</td>
<td>Range 0570 - 3390 if Pos 2 = C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 13, 14, 15, 16</th>
<th>Position of Highest Temperature Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Range 0350 - 3320 in steps of 10 cm if Pos 2 = A</td>
</tr>
<tr>
<td>B</td>
<td>Range 0400 - 3320 in steps of 10 cm if Pos 2 = B</td>
</tr>
<tr>
<td>C</td>
<td>Range 0500 - 3320 in steps of 10 cm if Pos 2 = C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pos 17</th>
<th>Separator</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Pos 18</th>
<th>Tag Plate</th>
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<tbody>
<tr>
<td>Z</td>
<td>No Tag plate</td>
</tr>
<tr>
<td>T</td>
<td>Tag plate (Material: CuNi alloy)</td>
</tr>
</tbody>
</table>

Typical Identification Code: 766 6 6 C 1 2 5 0 1 0 2 0 Z
Your Identification Code: 766 6 6 A N 7 6 6 U
Identification Code: 762 VITO Interface

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos 1</td>
<td>W&amp;M Approved</td>
</tr>
<tr>
<td></td>
<td>General purpose</td>
</tr>
<tr>
<td></td>
<td>With W&amp;M type approval only if Pos 2 = T</td>
</tr>
<tr>
<td>Pos 2</td>
<td>Version</td>
</tr>
<tr>
<td></td>
<td>VITO LT interface (for VITO LT probe)</td>
</tr>
<tr>
<td></td>
<td>VITO MRT interface for resistance measurements (MRT/RTD/361 MPT)</td>
</tr>
<tr>
<td></td>
<td>VITO interface for 764/765/766/864 VITO probes</td>
</tr>
<tr>
<td>Pos 3</td>
<td>Position Not Used</td>
</tr>
<tr>
<td>Pos 4</td>
<td>Position Not Used</td>
</tr>
<tr>
<td>Pos 5, 6, 7</td>
<td>Product Designation</td>
</tr>
<tr>
<td></td>
<td>VITO interface</td>
</tr>
<tr>
<td>Pos 8</td>
<td>Ingress Protection</td>
</tr>
<tr>
<td></td>
<td>No IP adapter</td>
</tr>
<tr>
<td></td>
<td>IP adapter (only if Pos 9 = A)</td>
</tr>
<tr>
<td></td>
<td>Note: recommended for environments with high humidity and strong fluctuations in ambient temperature.</td>
</tr>
<tr>
<td>Pos 9</td>
<td>Entry to Sensor</td>
</tr>
<tr>
<td></td>
<td>G 1/2 (standard in box)</td>
</tr>
<tr>
<td></td>
<td>3/4&quot; NPT (only when Pos 2 = R)</td>
</tr>
<tr>
<td>Pos 10</td>
<td>Cable Entry</td>
</tr>
<tr>
<td></td>
<td>M20 x 1.5 (only when Pos 11 = A or I)</td>
</tr>
<tr>
<td></td>
<td>3/4&quot; NPT; via reducer</td>
</tr>
<tr>
<td></td>
<td>PG16 via reducer (only when Pos 11 = A or I)</td>
</tr>
<tr>
<td>Pos 11</td>
<td>Safety Approvals</td>
</tr>
<tr>
<td></td>
<td>ATEX / IEC Ex Europe / Global</td>
</tr>
<tr>
<td></td>
<td>FM / CSA USA / Canada</td>
</tr>
<tr>
<td></td>
<td>INMETRO Brazil</td>
</tr>
<tr>
<td>Pos 12</td>
<td>Separator</td>
</tr>
<tr>
<td>Pos 13</td>
<td>Tag Plate</td>
</tr>
<tr>
<td></td>
<td>No tag plate</td>
</tr>
<tr>
<td></td>
<td>Tag plate (Material: CuNi alloy)</td>
</tr>
</tbody>
</table>

Typical Identification Code: 762 VITO Interface

Your Identification Code
Dimensional Drawing

766 VITO MTT Temperature and Water Probe
Dimensions in mm

762 VITO Interface
Dimensions in mm (inches)
All technical specifications are subject to change without notice.

For More Information
To learn more about Honeywell Enraf’s solutions, visit www.honeywellenraf.com or contact your Honeywell account manager.

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