LMT200 external mount magnetostrictive level transmitter
High accuracy non–intrusive liquid level and interface level detection
Measurement made easy
K–TEK Level products

Features
- Calibrated from the factory
- High accuracy: .01 % of full scale or ±1.27 mm
- No re-calibration needed: set it and forget it
- Easy setup with waveform display
- Not affected by agitation, foam or emulsion layers
- No oscilloscope required
- Designed to mount externally to K–TEK KM26 or other magnetic level gauge
- Superior sensor (patent #5,473,245)
- Local indication with HMI display
- Dual compartment housing with separate field terminal compartment
- Loop powered to 15.24 m (50 ft) probe length
- Total and/or interface level measurement
- Temperature range: –195.5 to 426.6 °C (–320 to 800 °F) with options
- Field replaceable/upgradable electronics module
- Built-in RFI/EMI filter
- Digital communications
- Online self-verification
- HART 7® and FOUNDATION Fieldbus™ ITK6.3.0
- Global hazardous location approvals and SIL 2/3 capable

Options
- Two level indications
- Glass viewing window
- 316 stainless steel enclosure
- Built-in surge protection
Principle of operation:
The LMT200 is based upon the magnetostrictive principle.

1. The device electronics generates a low energy current pulse at fixed intervals.
2. The electrical pulses create a magnetic field which travels down a specialized wire inside the sensor tube.
3. The interaction of the magnetic field around the wire and the magnetic float causes a torsional stress wave to be induced in the wire. This torsion propagates along the wire at a known velocity, from the position of the magnetic float and toward both ends of the wire.
4. A patented sensing element placed in the transmitter assembly converts the received mechanical torsion into an electrical return pulse.
5. The microprocessor–based electronics measures the elapsed time between the start and return pulses (Time of Flight) and converts it into a position measurement which is proportional to the level of the float.
Specifications

**Electronic transmitter**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeatability</td>
<td>±0.005 % of full scale or 0.315 mm (0.012 in), whichever is greater</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>±0.01 % of full scale or 0.86 mm (0.034 in), whichever is greater</td>
</tr>
<tr>
<td>Measuring accuracy</td>
<td>±0.01 % of full scale or 1.27 mm (0.050 in), whichever is greater¹</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>12 to 43 V DC for 4 to 20 mA HART loop powered, 9.0 to 32 V DC for Foundation™ Fieldbus</td>
</tr>
<tr>
<td>Output/communications</td>
<td>4 to 20 mA HART™ or FOUNDATION Fieldbus ITK6.3.0</td>
</tr>
<tr>
<td>User interface</td>
<td>Interactive display, DTM, EDDL with NE107 messaging</td>
</tr>
<tr>
<td>Power consumption</td>
<td>4 to 20 mA at 36.0 V DC – 3.6 mA 0.13 W; 21 mA 0.76 W at 12.0 V DC – 3.6 mA 0.043 W; 21 mA 0.25 W</td>
</tr>
<tr>
<td></td>
<td>HART mode (3.6 mA) at 36.0 V DC 0.144 W at 12.0 V DC 0.048 W</td>
</tr>
<tr>
<td></td>
<td>FF mode (17 mA) at 9.0 V DC 0.153 W at 32.0 V DC 0.544 W</td>
</tr>
<tr>
<td>Maximum line resistance</td>
<td>4 to 20 mA at 36.0 V DC and 21 mA, 1142 Ω* at 24.0 V DC and 21 mA, 571 Ω at 13.5 V DC and 21 mA, &lt; 72 Ω**</td>
</tr>
<tr>
<td></td>
<td>*Maximum allowable with HART communication is 700 Ω **See the current/resistance chart</td>
</tr>
<tr>
<td></td>
<td>HART mode (3.6 mA) &lt; 650 to 700 ohm</td>
</tr>
<tr>
<td></td>
<td>FF mode (17 mA) at 32.0 V DC, 1500 Ω at 9.0 V DC, 50 Ω</td>
</tr>
<tr>
<td>Polarity protection</td>
<td>Diode in series with loop</td>
</tr>
<tr>
<td>Update rate</td>
<td>10 measurements per second</td>
</tr>
<tr>
<td>Minimum measuring span</td>
<td>76.2 mm (3.0 in); consult factory if less is required</td>
</tr>
<tr>
<td>Damping</td>
<td>Field adjustable, range: 0.1 to 60 s</td>
</tr>
<tr>
<td>Alarm output</td>
<td>NE43, software or hardware selectable. Upscale (21 mA) or downscale (3.6 mA)</td>
</tr>
<tr>
<td>Surge suppression</td>
<td>Integral surge suppression available with option code S1 meeting IEC61000-4-5, 1kV/2kV, criteria B</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>−40 to 85°C (−40 to 185°F) ambient²</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 100 % RH</td>
</tr>
<tr>
<td>Linearization</td>
<td>21 point table available</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dual compartment</td>
</tr>
<tr>
<td>Enclosure material</td>
<td>Cast low copper aluminum with powder coat or 316 stainless steel</td>
</tr>
<tr>
<td>Remote transmitter</td>
<td>Standard remote distances of 5 m (16 ft), 10 m (33 ft), 20 m (66 ft), 30 m (98 ft)</td>
</tr>
<tr>
<td>Device tag material</td>
<td>AISI 316 stainless steel</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>Two M20 x 1.5 or two ½ in FNPT, adapters and bus connectors also available</td>
</tr>
<tr>
<td>Ingress protection</td>
<td>IP66, NEMA 4X</td>
</tr>
<tr>
<td><strong>Sensor tube</strong></td>
<td>316/L Stainless Steel</td>
</tr>
<tr>
<td>Material</td>
<td>304.8mm to 15.24 m (1 to 50 ft); 90 degree probes (SEH option) 304.8 mm to 7.62 m (1 to 25 ft)</td>
</tr>
<tr>
<td>Standard probe length</td>
<td>±3.2 mm (0.125 in) up to 3.0 m (10 ft); ±6.4 mm (0.25 in) up to 6.0 m (20 ft); ±9.0 mm (0.35 in) up to 9.0 m (29.5 ft); ±25.4 mm (1.0 in) up to 15.24 m (50 ft)</td>
</tr>
<tr>
<td>Mounting</td>
<td>Stainless steel clamps for KM26 magnetic level gauge chamber included; optional vibration isolation mounts</td>
</tr>
</tbody>
</table>

¹ Measurement accuracy is recorded at factory ambient conditions (23.88 °F ± 5.6 °C [75 °F ± 10 °F]) using a calibration magnet. Accuracy may be further influenced by other factors such as float hysteresis, installation, process conditions and ambient conditions.

² Some agency approvals may differ.
Float design for ABB K-TEK products – KM26S
Every KM26 MLG float is precisely engineered to customer application, ensuring optimal accuracy and performance. Precisely spaced magnets create a 360° magnetic field coverage, safeguarding level transmitter and gauge performance, even the most challenging applications. Several materials of construction available including titanium, Monel® , Hastelloy® C, stainless steel, and plastics. Tefzel®, Halar®, TEFLO® N protective coatings are also available. Process pressures to 344 bar (5000 PSI) to full vacuum.

HMI indicator (option)
- Display of the waveform for device performance confirmation
- Display of the current level as well as interface or the temperature of the measuring medium (optional)
- Application–specific visualizations which the user can select. Four operator pages can be configured to display multiple values in parallel
- Plain text fault diagnostics in conformance to NE107
- Menu–guided parameter settings with four buttons
- 'Easy set–up' function for fast commissioning
- Parameter settings of the device through the front glass with the housing closed
- During ongoing operation, the HMI indicator can be connected or disconnected and therefore also used as a configuration tool for other devices

A minimum of 75 grams of buoyancy are engineered into every KM26 float ensuring optimal performance even in the most difficult process applications.
Electrical connections

Devices with HART communication

Current output/HART output

For connecting the signal voltage/supply voltage, twisted cables with a conductor cross-section of 0.8 to 0.35 mm² (18 to 22 AWG) and a maximum length of 1500 m (4921 ft) must be used. For longer leads a greater cable cross section is required.

For shielded cables the cable shielding must only be grounded on one side (not on both sides).

For the earthing on the transmitter, the inner terminal with the corresponding marking can also be used.

The output signal (4 to 20 mA) and the power supply are conducted via the same conductor pair.

The transmitter works with a supply voltage between 12 to 42 V DC. For devices with the type of protection ‘Ex ia, intrinsic safety’ (ATEX, IECEx, FM US or FM Canadian approval), the supply voltage must not exceed 30 V DC. In some countries the maximum supply voltage is limited to lower values. The permissible supply voltage is specified on the name plate on the top of the transmitter.
Power supply

Devices with HART communication

<table>
<thead>
<tr>
<th>Terminals</th>
<th>PWR/COMM +/PWR/COMM –</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>12 to 42 V DC</td>
</tr>
<tr>
<td>Residual ripple</td>
<td>Maximum 5 % or uss = ±1.5 V</td>
</tr>
<tr>
<td>Power consumption</td>
<td>&lt; 1 W</td>
</tr>
</tbody>
</table>

Current Output / HART output

Only for devices with HART communication

Terminals: PWR/COMM +/PWR/COMM –

In HART communication, the smallest load is $R_B = 250 \, \Omega$. The load is $R_B$ is calculated as a function of the available supply voltage $U_s$ and the selected, signal current $I_B$ as follows:

$$R_B = \frac{U_s - \text{min operating voltage (12.0) V DC}}{I_B}$$

$R_B$ Load resistance
$U_s$ Supply voltage
$I_B$ Signal current

Devices with Foundation Fieldbus communication

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Function / comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus connection</td>
<td>Power supply, polarity insensitive</td>
</tr>
</tbody>
</table>

Probe selection guide

Probe selection chart - Cryogenic

**Directions:**

1. Determine the minimum and maximum ambient and process temperature of the installation.
2. Plot the intersection between the two temperatures on the chart.
3. Choose the appropriate probe by matching the zone number with the probe type.

**Zones:**

1. All probes - C1, C2, C3 & C4
2. C2, C4
3. C2, C4 with SDH required
4. C1, C2, C3 and C4 with SDH required

**Ambient temperature:**

*Ambient temperature is the air temperature in the work area surrounding the device. It takes into account the influence of heat created by equipment surrounding the device, allowing for cooling. It is not the chamber or insulation blanket.*

1. SDH probe length limited to 7620mm (300in)
2. C1 and C2 probes can be used with SDH up to 83 (181). See chart.
**Approvals**

**Flameproof marking**
- ATEX/IECEx
  - II ⅔ G Ex db IIC T6..T2 Ga/Gb
  - FM15ATEX0074X
  - IECEx FME 17.0004X
  - Power supply 42 V DC/2 W max.
- FM (C and US) approved
  - CL1 zone 1, AEx/Ex db IIC T6 to T2 Gb
  - US – CL1 GP ABCD, T6 to T2
  - Canada – CL1 GP BCD, T6 to T2

**Protection by enclosure marking**
- ATEX/IECEx
  - II ⅔ D Ex tb IIC T85 °C to T300 °C Db FM15ATEX0074X
  - IECEx FME17.0004X power supply 42 V DC/2W max.
- FM (C and US) approved
  - Zone 21 AEx/Ex tb IIC T80 °C to T165 °C Db
  - US – CL1 GP EFG, CLIII T6 to T2
  - Canada – CLII GP EFG, CLIII T6 to T2

**Intrinsic/non-incendive marking**
- ATEX/IECEx
  - II 1 G Ex ia IIC T6 to T4 Ga
  - II 1 D Ex ia IIC T80 °C Da
  - FISCO field device, FF-816 for (PA/FF output)
  - FM17ATEX0062X – IECEx FME17.0004X
  - II 3 G Ex ia IIC T6..T4 Ga
  - II 3 D Ex ia IIC T80 °C Da
  - FISCO field device, FF-816 for (PA/FF output)
  - FM17ATEX0063X – IECEx FME17.0004X
- FM (C and US) approved
  - CL1 DIV1/GP ABCD, CL1/II1/GP EFG, CLIII;
  - CL1 ZONE 0 AEx/Ex ia IIC T6 to T4 Ga;
  - Zone 20 AEx ia IIC T80 °C; CL1/II1 DIV1 Ex ia IIC T80 °C;
  - CL1/II1 DIV2/GP ABCD; CL1/II1 DIV2/GP FG; CLIII;
  - CL1 ZONE 2, AEx nC IIC T6 to T4;
  - CL1 ZONE 2, Ex nL IIC T6 to T4;
  - FISCO field device, FF-816 for (PA/FF output)
  - per 3KXL140000G0109

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**Probe selection guide**

**Probe selection chart - standard**

**Directions:**
1. Determine the maximum ambient temperature and the maximum process temperature of the installation.
2. Plot the intersection between the two temperatures on the chart.
3. Choose the appropriate probe by matching the zone number with the probe type.

**Zones**
- 1 - R1 & R2 probes
- 2 - R2 probe
- 3 - R1 & R2 with SEH required
- 4 - R2 with SEH required

*Ambient temperature is the air temperature in the work area surrounding the device. It takes into account the influence of heat created by equipment surrounding the area personnel will be working. It is not the skin temperature of the chamber or insulation blanket.

1 - SEH probe length limited to 7620mm (300 in)

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**Ambient temperature**

- (-80) to (-40)
- (-40) to (0)
- (0) to (120)
- (120) to (180)
- (180) to (240)
- (240) to (300)
- (300) to (360)
- (360) to (420)
- (420) to (480)
- (480) to (540)
- (540) to (600)

**Process temperature**

- (-80) to (80)
- (80) to (125)
- (125) to (170)
- (170) to (215)
- (215) to (260)
- (260) to (305)
- (305) to (350)
- (350) to (400)
- (400) to (450)
- (450) to (500)
- (500) to (550)
- (550) to (600)

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**Probe selection chart - standard**

- C1 & C3
- 80 (176)
- 83 (181)
- 58 (136)
- 85 (185)
- (-36) (-13)
- (-30) (-4)
- (-20) (-10)
- (-10) 0

**Probe selection chart - standard**

- 1 - R1 & R2 probes
- 2 - R2 probe
- 3 - R1 & R2 with SEH required
- 4 - R2 with SEH required

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**Probe selection guide**

**Probe selection chart - standard**

- 1 - R1 & R2 probes
- 2 - R2 probe
- 3 - R1 & R2 with SEH required
- 4 - R2 with SEH required

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**Approvals**

**Flameproof marking**
- ATEX/IECEx
  - II ⅔ G Ex db IIC T6..T2 Ga/Gb
  - FM15ATEX0074X
  - IECEx FME 17.0004X
  - Power supply 42 V DC/2 W max.
- FM (C and US) approved
  - CL1 zone 1, AEx/Ex db IIC T6 to T2 Gb
  - US – CL1 GP ABCD, T6 to T2
  - Canada – CL1 GP BCD, T6 to T2

**Protection by enclosure marking**
- ATEX/IECEx
  - II ⅔ D Ex tb IIC T85 °C to T300 °C Db FM15ATEX0074X
  - IECEx FME17.0004X power supply 42 V DC/2W max.
- FM (C and US) approved
  - Zone 21 AEx/Ex tb IIC T80 °C to T165 °C Db
  - US – CL1 GP EFG, CLIII T6 to T2
  - Canada – CLII GP EFG, CLIII T6 to T2

**Intrinsic/non-incendive marking**
- ATEX/IECEx
  - II 1 G Ex ia IIC T6 to T4 Ga
  - II 1 D Ex ia IIC T80 °C Da;
  - FISCO field device, FF-816 for (PA/FF output)
  - FM17ATEX0062X – IECEx FME17.0004X
  - II 3 G Ex ia IIC T6..T4 Gc
  - II 3 D Ex ia IIC T80 °C Da
  - FISCO field device, FF-816 for (PA/FF output)
  - II 3 G Ex nA IIC T6..T4 Gc
  - FM17ATEX0063X – IECEx FME17.0004X
- FM (C and US) approved
  - CL1 DIV1/GP ABCD, CL1/II1/GP EFG, CLIII;
  - CL1 ZONE 0 AEx/Ex ia IIC T6 to T4 Ga;
  - Zone 20 AEx ia IIC T80 °C; CL1/II1 DIV1 Ex ia IIC T80 °C;
  - CL1/II1 DIV2/GP ABCD; CL1/II1 DIV2/GP FG; CLIII;
  - CL1 ZONE 2, AEx nC IIC T6 to T4;
  - CL1 ZONE 2, Ex nL IIC T6 to T4;
  - FISCO field device, FF-816 for (PA/FF output)
  - per 3KXL140000G0109
Ordering information

Example of code:


LMT200 model codes

<table>
<thead>
<tr>
<th>LMT200 external mount</th>
<th>LMT200.............xxx-</th>
<th>xx</th>
<th>xx</th>
<th>xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General purpose</td>
<td>Y0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INMETRO, ATEX/IECEx flameproof, Intrinsically safe, no-sparking (protection type marked by customer)</td>
<td>B4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEPSi (China), Intrinsically safe</td>
<td>C1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEPSi (China), Flameproof housing</td>
<td>C2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEPSi (China), Non-sparking</td>
<td>C3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEPSi (China), ATEX/IECEx flameproof, Intrinsically safe, no-sparking (protection type marked by customer)</td>
<td>C4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEX/IECEx Intrinsically safe</td>
<td>E1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEX/IECEx Flameproof housing</td>
<td>E2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEX/IECEx Flameproof non-sparking (Ex na)</td>
<td>E3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAC, Intrinsically safe</td>
<td>G1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAC, Flameproof housing</td>
<td>G2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAC, Non-sparking</td>
<td>G3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KOSHA Intrinsically safe</td>
<td>K1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KOSHA Flameproof housing</td>
<td>K2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KOSHA Non-sparking</td>
<td>K3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-approval – North American (meeting FM and Canadian standards)/ATEX/IECEx explosion proof or Flameproof, Intrinsically safe or Non-sparking (protection type marked by customer)</td>
<td>M1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination approval – North American (meeting FM and Canadian standards) and INMETRO – Flameproof/Explosion proof, Intrinsically safe, Non-incendive/Non-sparking (protection type marked by customer)</td>
<td>M2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North American Intrinsically safe</td>
<td>N1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North American (meeting FM and Canadian standards) Explosion proof/Flameproof</td>
<td>N2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North American (meeting FM and Canadian standards) Non-incendive/Non-sparking</td>
<td>N3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>Z9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Probe material | S6 |    |    |    |
| Special | 29 |    |    |    |

| Probe style and probe type | R1 |    |    |    |
| ¼ in rigid probe, −80 to 232.22 °C (−112 to 450 °F). See temperature chart for full selection detail | R2 |    |    |    |
| ¼ in rigid probe, −80 to 426.66 °C (−112 to 800 °F). See temperature chart for full selection detail | C1 |    |    |    |
| ¾ in NPS sensor well with ¼ in rigid probe for cryogenic services, −195.55 to 121 °C (−320 to 250 °F) with N2 purge. See temperature chart for full selection detail | C3 |    |    |    |
| ⅝ in rigid probe for cryogenic services, −195.55 to 121.11 °C (−320 to 250 °F) with N2 purge. See temperature chart for full selection detail | Z9 |    |    |    |

1. Due to the insulation thickness, it is likely the SEH option will be required if cryogenic units are bottom mounted. It is also recommended to use the C3 option so that removal of the transmitter is possible without damaging the insulation.
## ...Ordering information

**Example of code:**


<table>
<thead>
<tr>
<th>LMT200 model codes (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mounting orientation</strong></td>
</tr>
<tr>
<td>Bottom left connected electronic housing</td>
</tr>
<tr>
<td>Bottom right connected electronic housing</td>
</tr>
<tr>
<td>Top left connected electronic housing</td>
</tr>
<tr>
<td>Top right connected electronic housing</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
</tr>
<tr>
<td>Aluminum with 2 x M20 x 1.5</td>
</tr>
<tr>
<td>Aluminum with 2 x NPT ½ in</td>
</tr>
<tr>
<td>316L stainless steel with 2 x M20 x 1.5</td>
</tr>
<tr>
<td>316L stainless steel with 2 x NPT ½ in</td>
</tr>
<tr>
<td>Remote/aluminum/2 x M20 x 1.5*</td>
</tr>
<tr>
<td>Remote/aluminum/2 x NPT ½ in*</td>
</tr>
<tr>
<td>Remote/stainless steel/2 x M20 x 1.5*</td>
</tr>
<tr>
<td>Remote/stainless steel/2 x NPT ½ in*</td>
</tr>
<tr>
<td>Special</td>
</tr>
<tr>
<td>Through the glass (TTG) push buttons, display and glass cover</td>
</tr>
<tr>
<td>Special</td>
</tr>
<tr>
<td><strong>Output</strong></td>
</tr>
<tr>
<td>Single 4 to 20 mA + HART</td>
</tr>
<tr>
<td>FOUNDATION Fieldbus</td>
</tr>
<tr>
<td>Special</td>
</tr>
</tbody>
</table>

* Only available with Y0, E1 and N1 approvals code.
...Ordering information

Example of code:


The following codes behind the hyphen (–) are options which affect the construction and tagging of the transmitter.

<table>
<thead>
<tr>
<th>Options</th>
<th>xx</th>
<th>xxx</th>
<th>xx</th>
<th>xxx</th>
<th>xx</th>
<th>xx(x)</th>
<th>xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMT200................xx–xxx.xx</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIL certification</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIL2 (HFT=0) and SIL3 (HFT=1) – certified acc. to IEC61508</td>
<td>CS</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sensor probe options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90 degree bend housing extension (maximum probe length 7.62 m/25 ft)</td>
<td>SEH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add nitrogen purged vapor seal to standard probe</td>
<td>SEV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor special</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add stainless steel hang tag, custom markings 4 lines, 22 characters per line</td>
<td>T5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other tagging special</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal cable length (for remote transmitter only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 m (approx. 33 ft)</td>
<td>SC2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 m (approx. 98 ft)</td>
<td>SC6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surge protector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surge/transient protector</td>
<td>S1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special paint or treatment on housing</td>
<td>STH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear use, device to be used in a nuclear facility (application must be reviewed by ABB)</td>
<td>P4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounted accessories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounted to chamber with vibration isolators, minimum 2 assemblies and additional assemblies per additional 5 ft of probe length</td>
<td>AV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve position transmitter kit including mounting bracket and magnet assembly</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* in progress
1. SEV option is for R1, R2 sensors. C1, C3 include vapor seals.

All codes located behind the // are for additional requirements and order comments.

These codes will not be included on the device tag.
...Ordering information

Example of code:


All codes located behind the // are for additional requirements and order comments.

These codes will not be included on the device tag.

<table>
<thead>
<tr>
<th>Additional order requirements and order comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMT200.............xxx–to//</td>
</tr>
</tbody>
</table>

Certificates

- PMI positive material identification: CHD
- Certificate of origin: GS1
- Other certificates: CZ

Drawings

- Drawings for approval required prior to construction: GD1
- Drawings for record required: GD2
- Certified as built drawings required: GD3
- Other drawings: GDZ

Documentation language (installation, operation and maintenance manual) *

- German: M1
- Spanish: M3
- English: M5
- Chinese: M6
- Portuguese: MA
- Russian: MB
- Other languages – ‘contact factory’: MZ

*1 in progress
*English is default.
*Chinese is default if NEPSI approval is selected

Calibration and configuration

- 3–point calibration verification certificate, default values of 100, 50 and 0 % of span, or customer specified points: R3
- 5–point calibration verification certificate, default values of 100, 75, 50, 25 and 0 % of span, or customer specified points: R5
- Custom Linearization or strapping table entered (up to 20 points): RL
- Calibrate for two float application: RF
- Witnessed calibration, with certificate: RW
- Printed record of configured settings in transmitter: CG
- Special calibration: RZ

*1 in progress

Measuring length on LMT200

<table>
<thead>
<tr>
<th>Measuring Length (ML)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
</tr>
<tr>
<td>Millimeters</td>
</tr>
</tbody>
</table>
Enclosures

[Diagram of Enclosures]

Probe type R1, R2 – top mount

[Diagram of Probe type R1, R2 – top mount]
### Probe type R1, R2 – Bottom mount

![Diagram of Probe type R1, R2 – Bottom mount](image)

*Drawings for reference only

### SEH 90 degree bend housing extension – Top mount

![Diagram of SEH 90 degree bend housing extension – Top mount](image)

*Drawings for reference only
SEH 90 degree bend housing extension – bottom mount

*Drawings for reference only

Cryogenic with insertion well – top mount

*Drawings for reference only
Remote transmitter option

*Drawings for reference only*
Vibration isolator mount option

Kit includes:
1 Vibration isolator
1 Chamber mounting clamp assembly
2 Bearing clamp assemblies

For measurement lengths (ML) of 914.4 mm (36 in) or less, a minimum of two VI-KIT assemblies are recommended for installation in high vibration applications. For ML greater than 914.4 mm (36 in), the number of isolators required can be determined from the below chart.

<table>
<thead>
<tr>
<th>ML up to</th>
<th># of kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>914.4 mm (36 in)</td>
<td>2</td>
</tr>
<tr>
<td>1828.8 mm (72 in)</td>
<td>3</td>
</tr>
<tr>
<td>2286.0 mm (90 in)</td>
<td>4</td>
</tr>
<tr>
<td>2743.2 mm (108 in)</td>
<td>4</td>
</tr>
<tr>
<td>3200.4 mm (126 in)</td>
<td>5</td>
</tr>
<tr>
<td>3657.6 mm (144 in)</td>
<td>5</td>
</tr>
<tr>
<td>4114.8 mm (162 in)</td>
<td>6</td>
</tr>
<tr>
<td>4572.0 mm (180 in)</td>
<td>6</td>
</tr>
<tr>
<td>&gt; 4572.0 mm (180 in)</td>
<td>consult factory</td>
</tr>
</tbody>
</table>

Position transmitter mounting option

Example installation: LMT200 valve position transmitter and hydraulic control valve

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Notes
ABB Inc.
Industrial Automation
125 E. County Line Road
Warminster, PA 18974 USA
Tel: +1 215 674 6000
Fax: +1 215 674 7183

ABB Engineering (Shanghai) Ltd.
No. 4528, KangXin Hwy.
Pudong New District
Shanghai, 201319, P.R. China
Phone: +86 10 64231407
Service: +86 4008209696
Email: sales-support.kq@cn.abb.com
Service email: instrumentservice.abbchina@cn.abb.com

www.abb.com/level

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