DM330 Series

Magnetostrictive Liquid Level Sensor

Magnetostrictive Liquid Measurement System takes field proven sensing technology and incorporates intrinsic safety with a field programmable zero and span. Packaging is our patented low clearance design, making the DM330 ideal for level monitoring in a variety of liquids and tank designs.

Easy Installation
• No calibration needed
• Program zero & span in the field
• Set upper and lower limits on bench prior to installation.

High Accuracy
• 0.1% accuracy full scale over 4-20mA span.

Minimal Maintenance
• Unique diagnostic output provides float position beyond set span, beyond active range, as well as loss of float.

Patented Low Clearance Design
• Electronics all within 5/8" diameter sensor allows wider mounting options at less cost.

Patented Flexible Probe
• PVDF version provides cost effective, high accuracy inventory monitoring up to 40 feet with flexibility and reduced weight for easier installation.

Intrinsically Safe
• FM, ATEX, CSA, CE, 3A Approved

Two Variations - Sensors are available in rigid 316SS or flexible PVDF designs. The stainless steel version has a choice of a mini-connector or an optional housing which includes terminal connectors with zero and span adjustments. All offer totally welded construction.

The flexible (PVDF) version offers with a variety of mounting options and provides cost effective, high accuracy inventory monitoring in tanks up to 40 feet.

All of the sensor’s electronics are integrated within the 5/8" diameter sensing tube. This breakthrough in package design eliminates the electronics enclosure at the top of the sensor, which reduces cost and offers greater options for insertion and mounting.

The DM330 is a two wire loop powered intrinsically safe sensor with a configurable 4 -20 mA span.

A variety of floats and mounting accessories are available to fit virtually any application. Included is a sanitary stainless steel version. Contact the factory to match your needs today.
DM330 Series

Specifications

- **Technology:** Magnetostrictive
- **Calibration:** None
- **Operating Voltage:** 13.5 to 30Vdc
- **Loop Impedance (R):** 1000 ohms 24Volts
- **Output:** 4 to 20mA
- **Temperature Range:**
  - Temperature Range:
    - -20°C to 100°C (-4°F to 212°F)
    - Not Approved for Hazardous Locations above 70°C (158°F)
  - Null Zone:
    - -20°C to 70°C (-4°F to 158°F)
  - Max.
- **Pressure Rating:**
  - Stainless Steel: 1000psi (69 bar)
  - float dependent
  - PVDF (flexible): 150 psi (10 bar)
- **Resolution:**
  - 0.025% full scale or 0.014" (0.35mm) (whichever is greater)
- **Repeatability:**
  - 0.014" + 0.05% of span typical, 0.014" + 0.4% of span max
- **Accuracy:**
  - 0.1% or 0.050" (1.27mm) (whichever is greater)
- **Enclosure:**
  - Stainless Steel Standard
  - Epoxy painted aluminum housing (option)
  - Probe Material: 316SS
  - Probe Rating: IP68
- **Probe Length:**
  - Stainless Steel: 20" - 192" (508 mm - 7315 mm)
  - Consult factory for lengths to 288"
  - PVDF (flexible): 20" - 480" (508 mm - 12192 mm)
- **Null Zone (Top):**
  - Stainless Steel: 8" (203 mm)
  - PVDF (flexible): 12" (305 mm)
- **Deadband (Bottom):**
  - Stainless Steel: 2" (51 mm)
  - PVDF (flexible): 6 to 14" (152 mm to 356 mm)

**Approvals:**

- Approved Intrinsically Safe for hazardous locations by the following agencies

* Specifications may change without notice

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**Diagnostic Locates Float Position**

[Diagram showing the diagnostic locates float position with currents and zones labeled, including null zone, selected span, active region, and deadband.]
**DM330 Series**

**Dimensions**  *inches, (mm)*

**M STYLE CONNECTOR**

**V STYLE CONNECTOR [PVDF VERSION]**

**Wiring**

**"H" Housing Option**

**"M" Connector**

**WIRING COLORS**

<table>
<thead>
<tr>
<th>SIGNAL</th>
<th>US</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN (+)</td>
<td>RED</td>
<td>BROWN</td>
</tr>
<tr>
<td>IN (-)</td>
<td>BLACK</td>
<td>BLACK</td>
</tr>
<tr>
<td>PROGRAM</td>
<td>WHITE</td>
<td>BLUE</td>
</tr>
<tr>
<td>CHASSIS</td>
<td>GREEN</td>
<td>WHITE</td>
</tr>
</tbody>
</table>
## DM330 Series

### Model Numbering

- **Magnetostriective Level Measurement System**
  - DM330 DM3X00 with 4-20mA output

- **Probe Style / Material**
  - X 316SS
  - V PVDF (Polyvinylidene Fluoride)
  - S 316 SS 3A Sanitary 240 Grit Electropolished
  - F 316 SS Food Grade 180 Grit

- **Connector Style**
  - M Mini connector
  - D Dual 3/4" NPT - for both housing and vessel mounting
  - S Single 3/4" NPT - for housing mounting, vessel mtg. via compression fitting, flange or tri-clamp
  - R Right Angle Fitting

- **Thread Mounting**
  - E English thread - 3/4" NPT with Connector Style M, D, or S

- **Overall Length**
  - XXX (in inches only, not to exceed 600 inches, 288" for 316 SS)

- **Output Signal**
  - F1 1 Output Signal

- **Float 1 Type**
  - XXX - see Float/Weight Kits in Chart below

- **Housing Option**
  - H Condulet with Zero & Span push-buttons* (only offered with "S" connector style)
  - X None

- **Special Mounting**
  - C C version [limited temp. range]
  - T TriClamp with E-clip retainer
  - P Triclamp with CIP perm. end plug [float non-removable]
  - W Welded Flange Fitting
  - X None

- **Mounting Size**
  - 20 2" Tri-clamp
  - 25 2 1/2" Tri-clamp
  - 30 3" Tri-clamp
  - 40 4" Tri-clamp
  - CF Adjustable Compression Fitting
  - XX None

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### Float Kits

- Float Type selection includes Float, spacer and retaining clip

<table>
<thead>
<tr>
<th>Material</th>
<th>Shape</th>
<th>Diameter</th>
<th>Height</th>
<th>S.G.</th>
<th>Max. Press.</th>
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<tbody>
<tr>
<td>PS0</td>
<td>316SS</td>
<td>Oval</td>
<td>1.83&quot;</td>
<td>2.94&quot;</td>
<td>0.61</td>
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<tr>
<td>PUX*</td>
<td>Ureth</td>
<td>Cylind</td>
<td>3.85&quot;</td>
<td>2.75&quot;</td>
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<tr>
<td>PNX*</td>
<td>Nitrophyl</td>
<td>Round</td>
<td>2.02&quot;</td>
<td>1.38&quot;</td>
<td>0.4</td>
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<tr>
<td>PEX*</td>
<td>316SS</td>
<td>Oval</td>
<td>2.05&quot;</td>
<td>2.7&quot;</td>
<td>0.54</td>
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<tr>
<td>XXX</td>
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<td></td>
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</tr>
</tbody>
</table>

YYY = Special Float / Float Kit ordered as a separate line item

- **Weight Kits**

<table>
<thead>
<tr>
<th>Material</th>
<th>Shape</th>
<th>Dia.</th>
<th>Hight</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 316SS</td>
<td>No weight kit on Stainless Steel probes (X, S, F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 316SS</td>
<td>Round</td>
<td>2&quot;</td>
<td>5'</td>
</tr>
<tr>
<td>2 316SS</td>
<td>Round</td>
<td>2&quot;</td>
<td>7'</td>
</tr>
<tr>
<td>3 316SS</td>
<td>Round</td>
<td>2&quot;</td>
<td>11'</td>
</tr>
<tr>
<td>4 316SS</td>
<td>Round</td>
<td>2&quot;</td>
<td>13'</td>
</tr>
</tbody>
</table>

* = Weight Kit

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