Sensor Networks’ smartPIMS® Cellular non-intrusive ultrasonic corrosion/erosion monitoring system is battery powered with integral SIM card and cellular radio. The Digital Sensor Interface (DSI) unit is programmed to take thickness measurements at any user-defined time interval, then send the data to webPIMS™, a cloud based back-end for analysis, trending and more. Use smartPIMS® Cellular for:

- Frequent data collection to resolve corrosion-rate or pitting issues.
- Quick, easy installation—temporary or permanent.
- Areas difficult or expensive to access and not conducive to manual data collection.

**monitor corrosion rate**
resolution to 0.001" (0.025mm) • high-risk areas • historically problematic locations

**monitor “low spots”**
post-NDE screening of pits to monitor remaining thickness • measures down to 0.040" (1.02mm)

**replace/augment intrusive methods**
validation of coupons, ER probes, etc.

**reduce costs**
reduce scaffolding and insulation removal/retitting for internal corrosion monitoring • more accurate/reliable data improving operations

**Operates on battery** (5-7 years at 1 reading/day).
**Cellularly transmits data to webPIMS™.**
**Offers 16 single- or 8 dual-element UT sensor channels.**
**Transducers available to withstand -22°F (-30°C) to 932°F (500°C).**
**Maintains 1 mil (0.001" / 0.025mm) resolution and 0.040" (1mm) minimum wall thickness.**
**Sensors install buried or above-ground, temporarily or permanently.**

ATEX, IECEx, UL/CSA and Japanese hazardous-area certifications.
Ultra-high-temp probes with mounting bracket.

smartPIMS® Cellular with 8 dual-element sensors installed inside CML ports.

smartPIMS® Cellular with 5 dual-element sensors installed on overhead line.

Dual-element sensor attachment can be either magnetic housing, or via strap with temporary or permanent couplant.

### Digital Sensor Interface

- **Type**: cellular (3G/4G-LTE)
- **Encryption Type**: secure socket layer (SSL)
- **Model No.**: smartPIMS® Cellular
- **Battery Type**: Li D-cell, 3.6 VDC, qty. 2
- **Battery Life**: 5 years (typical, based on 1 reading/day)

### Ultrasonic System

- **Channels**: 16 ultrasonic, 1 temperature
- **Pulsar Voltage**: ±5V bipolar square wave
- **Analog Frequency**: 1~10 MHz (<3dB)
- **Gain**: -10dB to +70dB
- **Digitizer Frequency**: 40 Msps
- **Certification**: Class I, Div. 2, Groups A-D, T4, Class 1, Zone 2, IIC, T4
- **Temperature Range**: -22 to +149 °F (-30 to +65 °C)
- **Dimensions (without antenna)**: 5.44” × 5.63” × 5.13” (138.1 × 142.9 × 130.2mm)
- **Weight**: 5.5 lbs. (2.5 kg)

### Transducer Cable

- **Type**: coaxial, ¼” dia.
- **Maximum Length to Transducer**: standard 10’ (3.0m) and 25’ (7.6m), custom to 50’ (15.2m)

### Transducers

<table>
<thead>
<tr>
<th></th>
<th>Single-Element Contact</th>
<th>Dual-Element Contact</th>
<th>Delay-Line Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>XD-101</td>
<td>XD-301</td>
<td>XD-201</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>General Purpose</td>
<td>Severe Pitting</td>
<td>Ultra-High-Temp</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>5 MHz</td>
<td>5 MHz</td>
<td>7 MHz</td>
</tr>
<tr>
<td><strong>Active Area</strong></td>
<td>0.25” × 0.63”</td>
<td>0.375” × 0.10mm</td>
<td>0.375” × 0.10mm</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>1.0” × 1.8”</td>
<td>0.75” × 0.78”</td>
<td>0.8” × 2.25”</td>
</tr>
<tr>
<td><strong># of Transducers</strong></td>
<td>1–16</td>
<td>1–8</td>
<td>1–16</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>0.001” × 0.025mm</td>
<td>0.001” × 0.025mm</td>
<td>0.001” × 0.025mm</td>
</tr>
<tr>
<td><strong>Thickness Range</strong></td>
<td>0.750” – 6.00”</td>
<td>0.940” – 6.7”</td>
<td>0.125” – 1.00”</td>
</tr>
<tr>
<td><strong>Temp Range</strong></td>
<td>-22 to +149 °F</td>
<td>-22 to +275 °F</td>
<td>-22 to +392 °F</td>
</tr>
<tr>
<td><strong>Attachment</strong></td>
<td>Magnet/adhesive</td>
<td>Magnet/adhesive</td>
<td>Mechanical Clamp</td>
</tr>
</tbody>
</table>

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