Metal Samples along with Sensor Networks Inc., offers the smartPIMS® Datalogger non-intrusive ultrasonic corrosion/erosion monitoring system which is equipped with an onboard battery and memory that can store up to 3,000 thickness readings. It takes measurements at any user-defined time interval, storing them for manual offload to a tablet or PC via an RS-485 cable. The smartPIMS® Datalogger is used for applications where frequent measurements are required, but wireless infrastructure is not available or not permitted.

**smartPIMS® Datalogger**

non-intrusive ultrasonic sensors for corrosion/erosion monitoring

- Operates on battery (2 years at 1 reading/day).
- Stores 3000 readings (each w/ time, date, waveform).
- Connects via Modbus (RS-485) to tablet/PC.
- Offloads data to dataPIMS software which can export to an XML/CSV file and/or upload to web PIMS via Internet connection.
- Offers 16 single- or 8 dual-element UT probe channels.
- Transducers maintain 1 mil (0.001” / 0.025mm) resolution and 0.040” (1mm) minimum wall thickness.
- Transducers withstand -22°F (-30°C ) to 932°F (500°C).
- Sensors install buried or above-ground, temporarily or permanently.
- ATEX, IECEx, UL/CSA and Japanese hazardous-area certifications.
Technical Specifications

Digital Sensor Interface

**Transmitter:**
Model: smartPIMS® datalogger
Protocol/Communication: Modbus / RS-485, 2-wire, max. 1000’ (305m)
Battery Type: Li D-cell, 3.6 VDC, qty. 2
Battery Life: 2 years (typical, based on 1 reading/day)
Storage Capacity: 3000 readings (FIFO)
UT System:
Channels: 16 ultrasonic, 1 temperature
Pulser Voltage: ±5V bipolar square
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 II 3G, Ex ec IIC T4 Gc, Tamb -20°C to +60°C
Enclosure:
Type: Instrumentation housing
Material/rating: Cast aluminum / NEMA 4X, IP66
Temperature Range: -4°F to +140°F (-20°C to +60°C)
Dimensions: 5.44 × 5.63 × 5.13” (138 × 143 × 130mm)
Weight: 5.2 lb (2.36 kg)

**Tablet Datalogger:**
Performance:
Processor: Intel i5-4200U 1.6GHz w/ 3MB L3 cache (dual-core) (min.)
Memory / Storage: 8 GB RAM / M2-SATA SSD, 64 GB (min.)
Operating System: Windows 10
Connections: Network power, data via RS-485-to-USB adapter
Physical:
Environmental ratings: IP65, MIL-STD-810G, 14 to 131°F (-10 to +55 °C) *
Dimensions: 11.4” × 7.48” × 0.78” *
Weight: 2.73 lbs. *

* due to model changes, actual size/weight may change

**Transducers**

**Transducer Cable:**
Type: Coaxial, ¼” dia.
Max. Length to Transducer: Standard 10’ (3.0m) and 25’ (7.6m), custom to 50’ (15.2m)

**Transducers:**

<table>
<thead>
<tr>
<th>Dual-Element Contact</th>
<th>Delay-Line Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>XD-301</td>
<td>XD-201</td>
</tr>
<tr>
<td>Application:</td>
<td>Ultra-High-Temp</td>
</tr>
<tr>
<td>Frequency: 5 MHz</td>
<td>7 MHz</td>
</tr>
<tr>
<td>Active Area (dia.): 0.375” (10mm)</td>
<td>0.375” (10mm)</td>
</tr>
<tr>
<td>Overall (dia. x h): 0.75” x 0.75” (19 x 19mm)</td>
<td>0.8” x 2.25” (20.3 x 57.2mm)</td>
</tr>
<tr>
<td># of transducers: 1-8</td>
<td>1-16</td>
</tr>
<tr>
<td>Resolution: 0.001” (0.025mm)</td>
<td>0.001” (0.025mm)</td>
</tr>
<tr>
<td>Thickness range**: 0.040 - 6.0” (1.0 - 150.0mm)</td>
<td>0.125 - 1.0” (3.0 - 25.0mm)</td>
</tr>
<tr>
<td>Temp. range: -22 to +275°F (-30 to +135°C)</td>
<td>-22 to +932°F (-30 to 500°C)</td>
</tr>
<tr>
<td>Attachment: magnet / adhesive</td>
<td>mechanical clamp / coupling foil</td>
</tr>
</tbody>
</table>

** minimum resolutions stated as typical values, but will vary with pipe condition