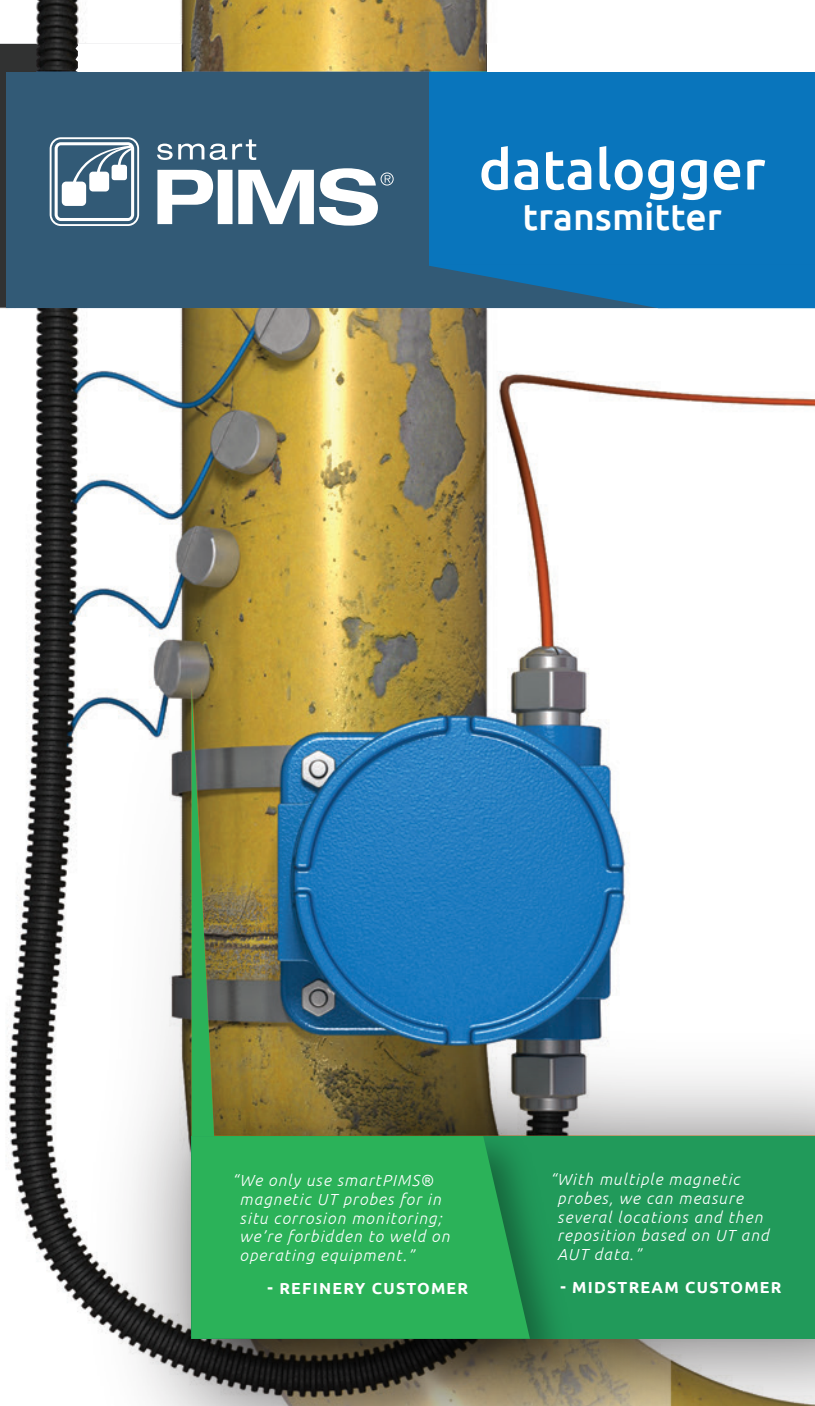
SENSOR® NETWORKS, INC

Inspection, Testing & Asset-Integrity Solutions

smart PIMS®

datalogger transmitter



non-intrusive ultrasonic sensors for **corrosion/erosion monitoring**

Sensor Networks' smartPIMS® Datalogger non-intrusive ultrasonic corrosion/erosion monitoring system is equipped with onboard battery and memory that can store up to 3000 thickness readings. It takes measurements at any user-
defined time interval, storing them for manual offload to tablet or PC via RS-485 cable. Use smartPIMS® Datalogger for:

- Applications where frequent measurements are required, but wireless infrastructure is not available.
- Situations where wireless infrastructure is not available

"We only use smartPIMS® magnetic UT probes for in situ corrosion monitoring; we're forbidden to weld on operating equipment."

- REFINERY CUSTOMER

"With multiple magnetic probes, we can measure several locations and then reposition based on UT and AUT data."

- MIDSTREAM CUSTOMER

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/ refitting for internal corrosion monitoring • more accurate/reliable data improving operations

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 XML/CSV file or directly to webPIMS.

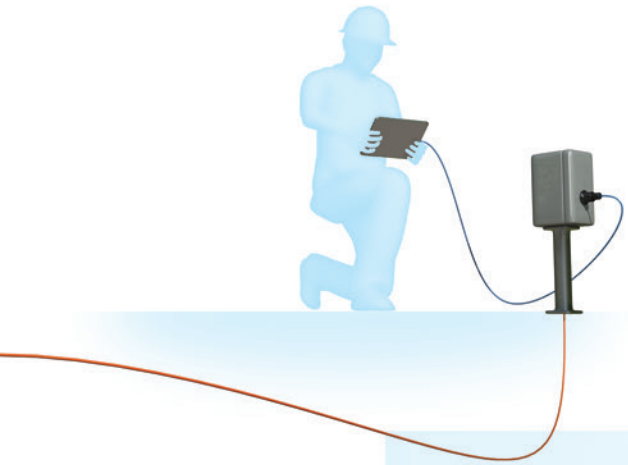
Offers 16 single- or 8 dual-element UT probe channels.

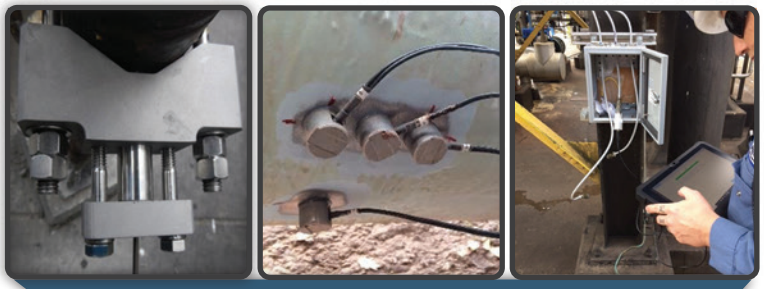
Transducers maintain 1 mil (0.001" / 0.025mm) **resolution and 0.040"** (1mm) **minimum wall thickness.**

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.





• Clamped high-temp probe monitors ~640°F line.
• Dual-element probes monitor individual pits.
• Datalogger cable runs to enclosure for data collection.

specifications

digital sensor interface

transmitter

model no . . . . . 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 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
Ⓔx II 3G, Ex ec IIC T4 Gc, T_{amb} -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)
dims./wt. . 5.44×5.63×5.13" (138×143×130mm) / 5.2 lb (2.36 kg)

tablet datalogger

performance
processor . Intel i5-4200U 1.6GHz w/ 3MB L3 cache (dual-core)
memory / storage . . . . . 8 GB RAM / M2-SATA SSD, 64 GB
operating system . . . . . Windows 10
connections network power, data via RS-485-to-USB adapter
physical
environ. ratings IP65, MIL-STD-810G, 14–131°F (-10 to +55 °C)
dimensions/weight . . . . . 11.4" × 7.48" × 0.78" / 2.73 lbs.

transducer cable

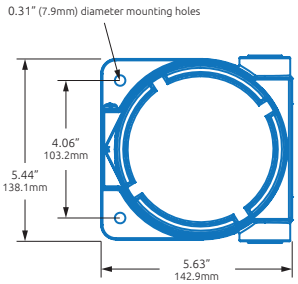
type . . . . . coaxial, ¼" dia.
maximum length to transducer . . . . . standard 10' (3.0m) and 25' (7.6m), custom to 50' (15.2m)

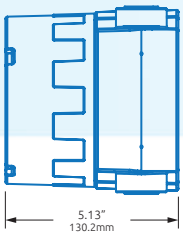
transducers

transducers

	single-element contact	dual-element contact	delay-line contact
model	XD-101	XD-301	XD-201
application	general purpose	severe pitting	ultra-high-temp
frequency	5 MHz	5 MHz	7 MHz
active area (dia.)	0.25"/6.35mm	0.375"/10mm	0.375"/10mm
overall (dia. x h)	1.0 × 1.0" 25.4 × 25.4 mm	0.75 × 0.75" 19 × 19 mm	0.8 × 2.25" 20.3 × 57.2 mm
# of transducers	1–16	1–8	1–16
resolution	0.001"/0.025mm	0.001"/0.025mm	0.001"/0.025mm
thickness range†	0.200–6.0" 5.1–150.0mm	0.040–6.0" 1.0–150.0mm	0.125–1.0" 3.0–25.0mm
temp range	-22 to +150°F -30 to +65°C	-22 to +275°F -30 to +132°C	-22 to +932°F -30 to +500°C
attachment	magnet/adhesive	magnet/adhesive	mechanical clamp/ gold foil

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





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