micro PIMS®

Intrinsically Safe

Single-Point Wall Thickness Monitoring Systems
For Offshore Applications

Monitoring asset integrity in offshore facilities is paramount to safety and operation efficiency. Tracking wall thickness and corrosion rate data of critical assets is a proven method to reduce the risk of asset failure, which can result in loss of product, environmental impact, and most importantly, loss of life. Whether the facility is manned or unmanned, microPIMS®-IS (Intrinsically Safe) is a wireless sensor system easily deployed and scalable to meet changing monitoring needs.

microPIMS® I.S. is a fully wireless, non-intrusive, ultrasonic corrosion/erosion monitoring system designed to continuously monitor for metal loss in extreme temperatures and environments. Powered by battery, it operates using long range sub-Gigahertz wireless connectivity. Each microPIMS sensor is programmed to take readings at a user-defined time interval and automatically send data to webPIMS™, a cloud-based back-end web portal for analysis, trending and more.

High Capacity & Long Range
connect up to 1000+ microPIMS sensors per gateway up to ~1 mile (1.6km) range

Reduce costs
reduce scaffolding or rope access for internal corrosion monitoring • high-risk areas • historically problematic locations

Long Battery Life
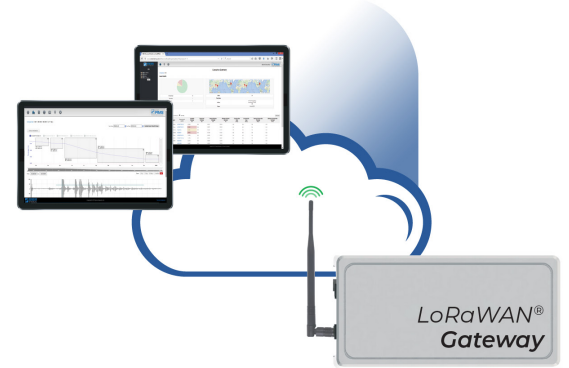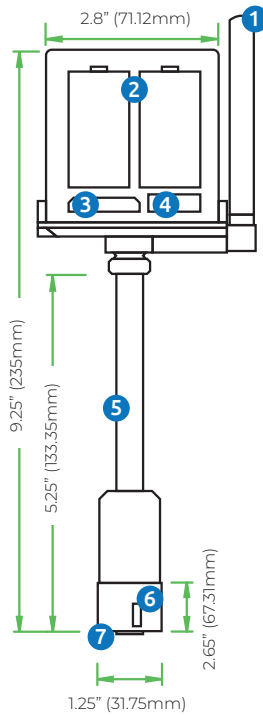collect thickness data from microPIMS for 15 years at 1 reading per day

High Accuracy Measurements
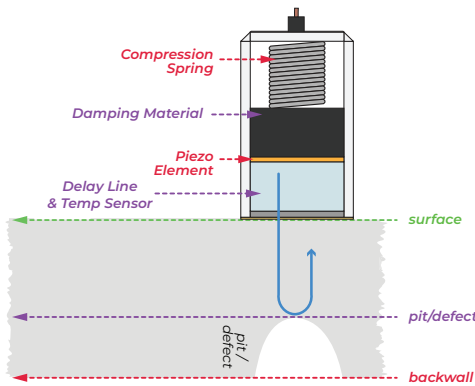accurate to 0.001" (0.025mm) • more accurate/reliable data improving operations

microPIMS I.S sensors installed using a band clamp

tech exposed

1. **LoRaWAN High-Gain Antenna**

2. **Two D-Cell batteries**
   provide 15 years of wireless operation. Commercially available (non-proprietary)

3. **LoRa Radio**

4. **Ultrasonic Testing PCB**

5. **Stainless Steel Heat Stand-Off**

6. **Temperature Sensor**

7. **Single-Element High-Temp Transducer**
   capable of being installed on pipes up to 300°F (150°C)

Dimensions: 2.8" (71.12mm); 9.25" (235mm); 5.25" (133.35mm); 2.65" (67.31mm); 1.25" (31.75mm)

Compression Spring · Damping Material · Piezo Element · Delay Line & Temp Sensor · surface · pit/defect · backwall

microPIMS® complete kit—including sensors, gateway and webPIMS software

LoRaWAN® Gateway

- **UL/CSA C1D1, ATEX / IECEx Zone 0 and Japanese hazardous-area certified.**

- **15-years at 1 reading/day** (2x D-Size Batteries - 3.6VDC).

- Built-in thermocouple provides surface temperature readings for temperature-compensated thickness data.

- Installed temporarily or permanently in under 15 minutes per sensor.

- Wireless gateway supports up to 1,000+ microPIMS nodes and offers up to ~1 mile (1.6km) range in industrial settings.

- Two models: standard and extended thickness range.

- Cellular or ethernet data back-haul through gateway.

microPIMS specifications

	standard thickness range	extended thickness range
elements	single (delay line)	single (delay line)
frequency	7 MHz	7 MHz
element diameter	0.375 in. (10mm)	0.375 in. (10mm)
measurement range	0.125-1" (3-25mm)	0.250-2" (6.35-50.8mm)
sensor surface temperature	-40°F (-40°C) up to 300°F (150°C)	-40°F (-40°C) up to 300°F (150°C)
weight	31.0 oz. (880g)	31.0 oz. (880g)
size (height × housing dia.)	9.25×2.8" (235×70mm)	10-25×2.8" (254-635×70mm)

hazardous location rating . . . . See chart on the right
intrinsic safety
Ingress Protection Rating IP-67
resolution . . . . 0.001" (0.025mm)
battery life (typical)† . . . . 15 yr. @ 1 reading/day 68°F (20°C)
construction . . . . 316 stainless steel
mounting . . . . band clamp
data . . . . digital thickness, RF waveform, temperature, time/date stamp
data access . . . . cloud-based via webPIMS™ portal OR on-premise
local network . . . . LoRaWAN (node to gateway)
connectivity . . . . gateway to cloud (cellular or ethernet) OR on-premise
sensor count . . . . 1,000+ microPIMS units per gateway
gateway* . . . . outdoor; cast alum.; Approx. 12×6×4" (305×152×102mm); 6.0lb (2.7kg)

† Typical Values. Results may vary site to site.
* Without antennas.
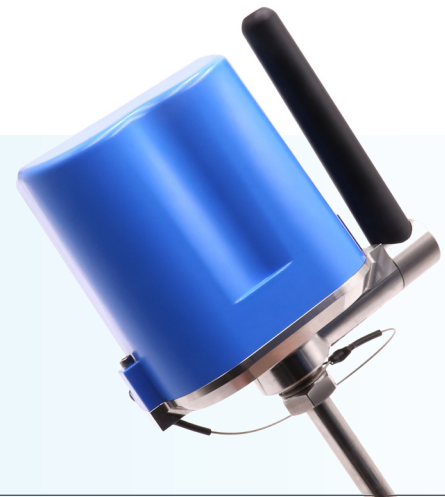
UK CA 2503 CE 2776 ⟨Ex⟩ II 1 G Ex ia IIC T4 Ga, Ta = -40°C to +70°C
CML 21ATEX2356X | CML 21UKEX2357X | IECEx CML 21.0044X

NRTL LISTED MET c us

Ex ia IIC T4 Ga | Class I, Div 1, Gp A-D T4 Ex ia
Class I Zone 0, AEx ia IIC T4 Ga | Class I, Div 1 Gp A-D T4
Ta = -40°C to +70°C
E114158 - Hazardous Location

WARNING: USE ONLY TADIRAN TL-5930, SL-2780 OR XENO XL-205F BATTERIES
WARNING: SPECIAL CONDITIONS FOR SAFE USE, SEE INSTRUCTIONS

IP 67
BATTERY POWERED: 2 Cells, 7.2V, 0.94W
PROGRAMMING PORT: Um = 5V

Contains:
IC: 23069-CW24012
FCC: 2ANDP-CW24-012
Made in the USA

MADE IN USA

PRELIMINARY VERSION: Specifications are subject to change without notice

366 Walker Drive · Suite 200
State College, PA, 16801 USA
+1 (814) 466-7207 · www.sensornetworksinc.com

SENSOR NETWORKS, INC
Inspection, Testing & Asset-Integrity Solutions