

microPIMS®

Sensor Networks



Wireless, Non-Intrusive Ultrasonic Sensors for Corrosion & Erosion Monitoring

microPIMS® IS2 LoRaWAN is a 4th-generation, star-network topology system which leverages Sensor Networks' success and experience in non-invasive corrosion/erosion monitoring. It is an intrinsically safe, fully wireless, non-intrusive, network of ultrasonic sensors. Powered by long-life batteries, it operates using long-range sub-gigahertz LoRaWAN wireless connectivity.

Data is automatically sent to private webPIMS™, cloud-based or on-premise LoRaWAN system + software back-end for analysis, trending and more.

microPIMS sensors are available in 3 tiers, each optimized for asset requirements and criticality.

Full Solution System for Moving from Manual Inspection to Hands-Free Monitoring



- 7-10 years at 1 reading/day (2x D-Size Batteries - 3.6VDC).*
- Surface temperature readings for temperature-compensated thickness data.
- Temporary or permanent installation in under 15 minutes per sensor.
- Wireless gateway supports over 1,000 microPIMS nodes and up to 2 mile (3.2km) range.*
- Cellular or ethernet data back-haul through gateway.
- ULCSA C1D1, ATEX / IECEx Zone 0 hazardous-area certified.

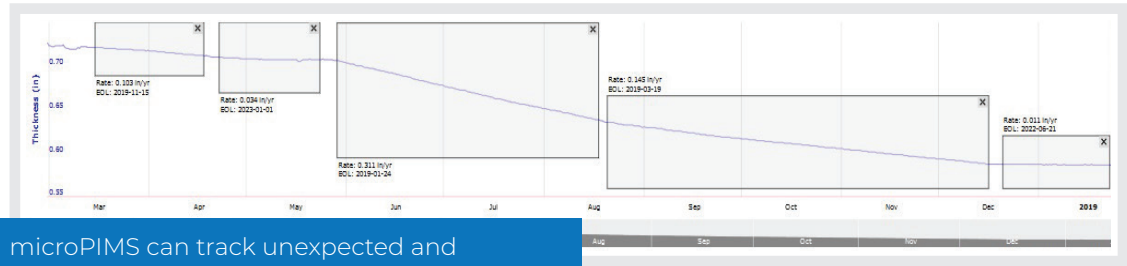


**Eddyfi
Technologies**
Remote Monitoring



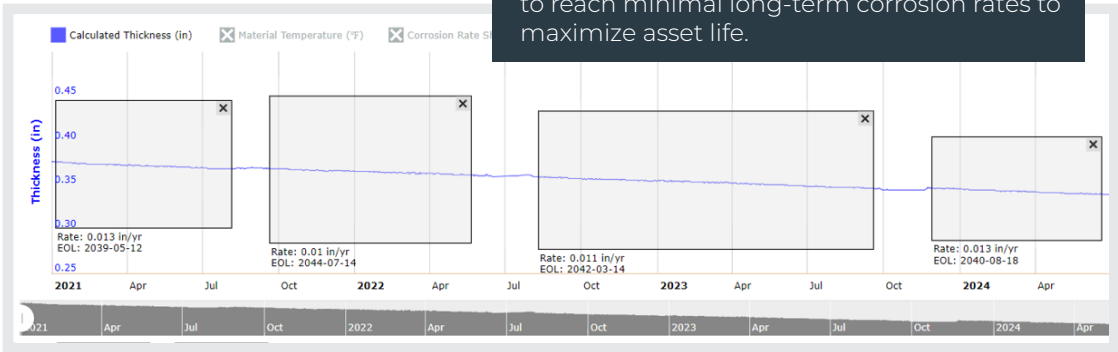
**SENSOR
NETWORKS, INC.**

The Power of Monitoring



microPIMS can track unexpected and prolonged extreme corrosion and erosion rates, allowing operators to correlate processes, and revert to baseline levels of corrosion.

With increased data and insights, owners and operators can learn how to optimize processes to reach minimal long-term corrosion rates to maximize asset life.



Specifications

microPIMS Sensors					
	Composite Dual	HT Standard	UHT Standard	HT Extended Range	UHT Extended Range
Elements	Dual	Single	Single	Single	Single
Frequency	5 MHz	7 MHz	7 MHz	7 MHz	7 MHz
Element Diameter	0.375 in. (10mm)	0.375 in. (10mm)	0.375 in. (10mm)	0.375 in. (10mm)	0.375 in. (10mm)
Measurement Range	0.040-4" (1-100mm)	0.10-1.0" (3-25mm)	0.10-1.0" (3-25mm)	0.25-2.0" (6-50mm)	0.25-2.0" (6-50mm)
Surface Temperature	-40 to 100°C -40 to 212°F	-40 to 150°C -40 to 300°F	-40 to 510°C -40 to 950°F	-40 to 150°C -40 to 300°F	-40 to 510°C -40 to 950°F
Weight	20.5 oz. (580g)	20.5 oz. (580g)	33.6 oz. (952g)	23.6 oz. (670g)	36.75 oz. (1,042g)
Size (height)	10.75 in. (273mm)	11.13 in. (283mm)	16.6 in. (422mm)	12.1 in. (307mm)	17.57 in. (446mm)
Installation Recommended	Magnetic clamps or band clamps	Clamps with bands or welded studs	Clamps with bands or welded studs	Clamps with bands or welded studs	Clamps with bands or welded studs
Couplant	Temporary or permanent (epoxy)	Metal foil	Metal foil	Metal foil	Metal foil
Primary Applications	Over 36" assets (tanks, spheres, vessels, etc.)	Piping from 1-36 in. (2.5-92cm)	Piping from 1-36 in. (5.1-91.4 cm)	Piping from 1-36 in. (5.1-91.4 cm)	Piping from 1-36 in. (5.1-91.4 cm)

Attachment Methods

Clamp Type	Magnetic Clamp (optional band clamp)	Polymer Band Clamp	Legacy UHT Base	SS Band Clamp (Replacing Legacy UHT Base)	Stud Weld	1" Clamp	2" Clamp
Used For	LT microPIMS	HT microPIMS	HT microPIMS UHT microPIMS	HT microPIMS UHT microPIMS	HT microPIMS UHT microPIMS	HT microPIMS UHT microPIMS	HT microPIMS UHT microPIMS
Pipe Dia.	Over 36" (91.4 cm) assets (tanks, spheres, vessels, etc.)	3-36 in. (7.6-91.4 cm) Pipe Diameter	3-36 in. (7.6-91.4 cm) Pipe Diameter	3-36 in. (7.6-91.4 cm) Pipe Diameter	3-36 in. (7.6-91.4 cm) Pipe Diameter	1"	2"
Temp.	-40 to 135°C -40 to 275°F	-40 to 150°C -40 to 300°F	-40 to 510°C -40 to 950°F	-40 to 510°C -40 to 950°F	-40 to 510°C -40 to 950°F	-40 to 510°C -40 to 950°F	-40 to 510°C -40 to 950°F
Couplant	Epoxy or temporary couplant	Metal foil	Metal foil	Metal foil	Metal foil	Metal foil	Metal foil
Dimensions (footprint)	Width: 2.625 in. (6.6 cm) Length: 2.75 in. (6.9 cm)	Width: 3.375 in. (8.5 cm) Length: 4.5 in. (11.4 cm)	Width: 2.625 in. (6.6 cm) Length: 2.75 in. (6.9 cm)	Width: 3.625 in. (9.2 cm) Length: 3.75 in. (9.5 cm)	Width: 1.56 in. (3.9 cm) Length: 3.25 in. (8.2 cm)	Width: 1.75 in. (4.4 cm) Length: 3 in. (7.6 cm)	Width: 2.75 in. (6.9 cm) Length: 3.5 in. (8.9 cm)



microPIMS System Specifications

hazardous location rating intrinsic safety	See chart on the right
Ingress Protection Rating	IP-67
resolution	0.001" (0.025mm)
battery life*	7-10 years @ 1 reading/day 68°F(20°C)
construction	303 or 316 L stainless steel (based on sensor)
mounting	magnetic base; 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)



UK CA 2503 CE 2776 Ex II 1 G Ex ia IIC Tx* Ga, Ta = -40°C to +70°C
CML 26ATEX2108X | CML 26UKEX2098X | IECEx CML 26.0026X



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

* SEE INSTRUCTIONS | VOIR LES DIRECTIVES

WARNING: USE ONLY TADIRAN TL-5930, SL-2780 OR SAFT LS 33600 BATTERIES

WARNING: SPECIAL CONDITIONS FOR SAFE USE, SEE INSTRUCTIONS

AVERTISSEMENT: UTILISEZ UNIQUEMENT DES ACCUMULATEURS TADIRAN TL-5930, SL-2780 OU SAFT LS 33600

AVERTISSEMENT: CONDITIONS PARTICULIÈRES POUR UNE UTILISATION SÉCURISÉE, VOIR LES DIRECTIVES



IP 67
BATTERY POWERED: 2 CELLS, 3.6V, 0.91W
PROGRAMMING PORT: Um = 5V

* Typical Values. Results may vary site to site based on conditions.

† Without antennas.

10.27.26

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microPIMS is covered by five U.S. patents.
LoRaWan® is a registered trademark of the LoRa Alliance.

sensornetworksinc.com
366 Walker Drive - Suite 200
State College PA, 16801 USA

microPIMS Sensor Tiers

Inspect

One reading *per month*

Temperature Compensation - **No**

Optimized for CML optimization programs, and ***locations that rarely fail***, but still ***cost time and money to inspect manually***.

Monitor

One reading *per week*

Temperature Compensation - **Yes**

Optimized for increased surveillance on ***risk-based assets***, providing ***data-driven decision making*** and freeing inspectors for higher-value work.

Optimize

One or more readings *per day*

Temperature Compensation - **Yes**

Enables ***process optimization***, integrity operating window analysis, and data-driven decision making on the ***most critical assets***.

Data Connection Systems

LoRaWan to Cloud

microPIMS Sensors

LoRaWan Gateway

All equipment fully provided by Sensor Networks. microPIMS data transmitted wirelessly from the LoRaWAN gateway to webPIMS for cloud storage, analysis, and reporting.

On-Premises

microPIMS Sensors

LoRaWan Gateway

All equipment fully provided by Sensor Networks. microPIMS data transmitted wirelessly from the LoRaWAN gateway to a local, self-contained webPIMS system for storage, analysis, and reporting.

Private Network Integration

microPIMS Sensors

LoRaWan Gateway

microPIMS Sensors integrated into existing LoRaWAN infrastructure. microPIMS data transmitted wirelessly from the LoRaWAN gateway to webPIMS via cloud or on-prem system for storage, analysis, and reporting.

