

# HotSense™ Automated Wireless Ultrasound for on-stream corrosion, erosion and wear monitoring

Track wall loss rates, detect changes and see into the future to optimise operations and reduce outages

Non-invasive, automated and wireless ultrasonic monitoring solutions for applications across refining, oil & gas, nuclear and process sectors

**Keywords:** corrosion, erosion, wear, on-stream monitoring, extreme environments, high temperatures

ionix

ADVANCED TECHNOLOGIES



## CALIPERAY

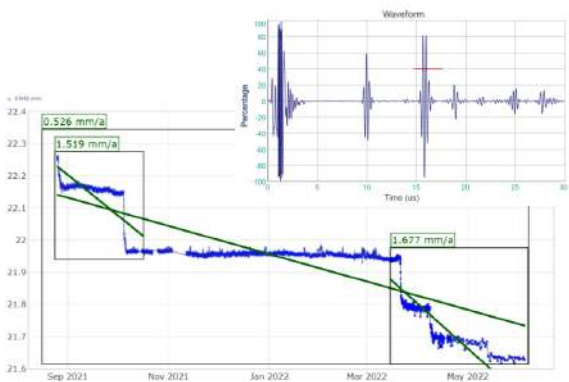
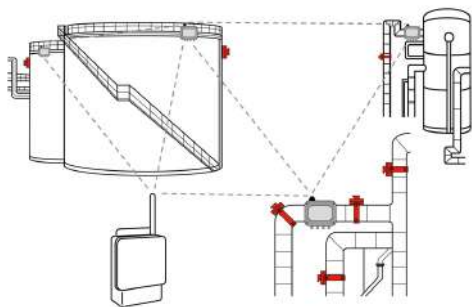
- **Automated non-invasive** corrosion, erosion and wear monitoring.
- **High precision** HotSense™ probes for range of deployment options.
- **-200 to +550 °C** (-328 to +1022 °F) operating range.
- **On-stream installation** on pipes or vessels.
- **Low profile** under insulation or in confined spaces.
- **High frequency data collection** direct to server or control room.
- **Automated, WirelessHART mesh, Battery Powered, Ex.**

## TRENDING

- **Track** wall loss rates, **detect** changes and **forecast** into the future.
- **Understand current wall loss rates** to feed maintenance planning.
- **Detect changes** and relate to process conditions.
- **Extrapolate trends** to predict impact of changes on asset condition.
- **Optimise Decision Making.**
- **Predict maintenance intervals** and avoid un-planned shutdowns.
- **Optimise process conditions** to maximise productivity.

## DATA COLLECTION

- Get trending data now!
- Data collection on-premise or remote server.
- No internet or cloud required (cloud option available).
- Fully contained Field Data Logging Kit can be deployed in under an hour.
- Data in standalone system or integrated into control systems.
- Implement alongside current inspections.
- Complements traditional NDT inspections.
- Integrate with current integrity data.



hotsense® | Powered by ionix



# Automated Wireless Ultrasound



VISIT US

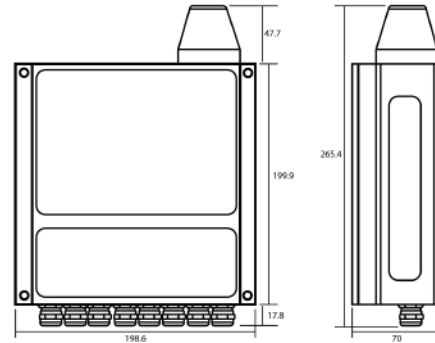
## STANDARD SYSTEM SPECIFICATION

PARAMETER	VALUE
<b>MEASUREMENT</b>	
Temperature Range	-200 °C to +550 °C (-328 to +1022 °F)
Resolution	0.0025 mm**
Detectable Wall Loss Rate	> 0.025 mm / yr
Thickness Range	See transducers
Temperature Compensation	Automated when thermocouple installed
<b>SYSTEM</b>	
Channels Per Node	1-4
Thermocouples	Optional. Up to 4 with HotSense™ 380 and UHT. Up to 2 with HotSense™ DE
Certification	IS/Class I, Division 1, Groups A/B/C/D; Ex ia IIC T4 for -55°C ≤ Ta ≤ +55°C;
Rating	IP66
Battery Type	Lithium D
Battery Life	Up to 5+ years
<b>WIRELESS</b>	
Communication Protocol	WirelessHART (IEC 62591)
Security	128-bit AES Security
Maximum Units per Gateway	25, 100, 200 depending on spec
Maximum Total Number to Devices	30,000
Data Collection Frequency	1 hour +
Single Hop Range	>100m LOS
<b>SOFTWARE</b>	
Data Output	Thickness, wall loss rate (short & long), temperature, battery, A-scan
Export	Whole database or subset, .csv
Data Storage and Access	Local server, DCS, PIMS etc
Protocol	EtherNet/IP, Modbus RTU/TCP, OPC, HART-IP
Diagnostics	Remote diagnostics of transducer, node, network and measurement
Calibration	Automated
Battery Remaining Life	As a function of usage or voltage

\*\* Subject to pipe thickness and temperature.

## STANDARD TRANSDUCER SPECIFICATION

	HOTSENSE™ 150 DE	HOTSENSE™ 380	HOTSENSE™ UHT
Frequency	5 MHz	3.25 MHz	3.25 MHz
Application	Standard temperatures, measurements through coatings, large pipes and vessels	All	All
Thickness Range in Steel	>1 mm	2.5 - 22.5 mm	2.5 mm - 72.5 mm
Continuous Temperature Range	-55 °C to + 150 °C	400 °C	550 °C
Deployment Options	Magnetic mount + Epoxy or strap + rubber couplant	Straps or welded stud	Straps or welded stud
Cable Length	2 or 15 m flex	1 m high temperature + 2 or 15 m flex	1 m high temperature + 2 or 15 m flex
Ex certification	ATEX Zone 0	ATEX Zone 0 / FM Cl1 Div1	ATEX Zone 0 / FM Cl1 Div1



## INSTALLATION, SURVEY AND MAINTENANCE

Ionix, with our system and global service partners can provide planning and pre-installation surveys, as well as ongoing system service and data health packages tailored to your requirements.

Full online monitoring service and data health check packages available:

- Remote or on-site
- Review of system set-up and data outputs
- Sensor and network stability check
- Battery levels and health
- Training



Get in touch for consultation:

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