

# HotSense™ dual element (DE) ultrasonic monitoring sensors

Reduce the cost and complexity of on-stream ultrasonic monitoring

Dual element ultrasonic transducer for on-stream thickness, corrosion and erosion monitoring for use in applications across **refining, oil & gas, energy, nuclear, aerospace** and **process sectors**.

**Keywords:** corrosion, erosion, in-service monitoring, hazardous environments, ultrasonics



## HOTSENSE DE

- **Low cost dual element** ultrasonic monitoring sensors for widespread distribution
- **Through coating** measurements without removal of protective coatings
- **Installation on all sizes** of pipes and vessels
- **Built on the award winning HotSense™ ultrasonic platform**  
Next generation sensors powered by the proprietary Ionix HPZ piezoceramic
- **-55 to +150 °C** [-67 to +302 °F] continuous measurement temperature range
- **Permanent or semi-permanent installation** in extreme or hazardous environments
- **Intrinsically safe certified** to Zone 0
- **Manual or automated** data collection

## DEPLOYMENT

- Deploy on to live assets without shutdown or isolation
- Options for vessels and pipes NPS 52" and above
- Integrated magnetic fixing for ease of installation on ferrous assets
- Epoxy fixings for large pipes and vessels
- Universal strap fixing for small pipe diameters and semi-permanent installation
- Deploy around the circumference, spine or survey grid of piping

## SOLUTION BENEFITS

- Fixed UT sensors provide increased measurement precision and collection frequency for reliable and real-time corrosion trending
- Optimise Asset Integrity and Performance Management (AIM/APM) programmes with accurate and reliable wall loss data
- Reduce operational costs and maximise production margins
- Data collection using standard UT flaw detectors with Measurement Hub
- Autonomous data collection and data direct to control centre with WirelessHART Caliperay

hotsense® | Powered by ionix



## STANDARD TRANSDUCER SPECIFICATION

PARAMETER	VALUE	UNIT
Operating Temperature	-55 to +150 / [-67 to +302]	°C / [°F]
Delay Line Material	Engineering Polymer	-
Tip diameter	11 / [0.434]	mm / [in]
Connector type	Dual UNF 10/32 Microdot	-
Cable length(s)	2 [6.5] standard, 15 [49] by request	m / [ft]
Ruggedisation	Certified to IP 66/68 Stainless steel construction	-
Acoustic characteristics certificate of conformity to EN 12668:2 supplied with each unit		
Transducer centre frequency	5	MHz
Active element diameter	8 / 2	mm
Wear allowance	1.5	mm
For use with Measurement Hub manual and Caliperay automated monitoring solutions Also compatible with UT flaw detectors and thickness gauges		

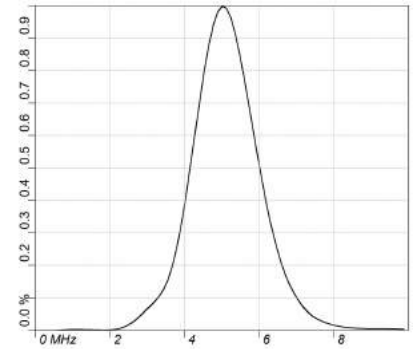
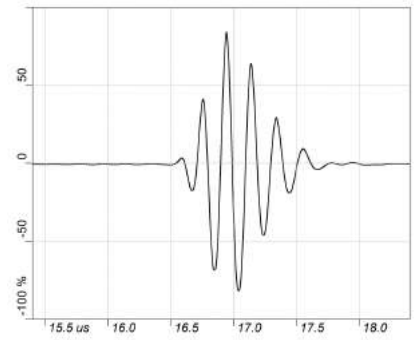
\*Other variations available via special request  
For other specification requirements please contact our sales team

## STANDARD DEPLOYMENT SPECIFICATION

PARAMETER	VALUE	VARIABLES
Strap free deployment		
Applications	Vessels, larger pipe diameters, grids	
Fixing	Magnetic & epoxy adhesive	Optional retention lanyard
Coupling	Epoxy	
Cure time	Minimum of 1 hour at 150 °C	Cure in-service
Diameters	>NPS 3"	Ideal for vessels
Installation on coatings	Yes	
Semi-permanent deployment		
Applications		
Fixing	Magnet & universal steel strap	Optional retention lanyard
Coupling	Solid coupling pad	
Diameters	NPS 2" to 36"	
Installation on coatings	Yes	

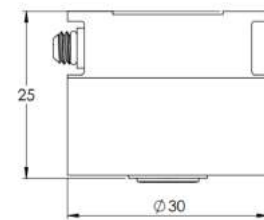
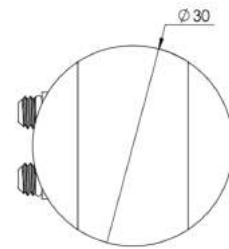
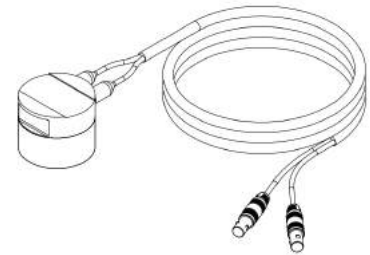
Contact Ionix to order, for further information or to find a solution for your application

## TYPICAL ULTRASONIC RESPONSE



## CERTIFICATION

Ex II 1 GD Ex ia IIC T\* Ga / Ex ia IIIC T\* Da  
CE IP 66/68



Dimensions shown in mm



Want to discuss your demanding environment needs?

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