

Thickness monitoring through coatings with HotSense™ Dual Element

*for applications in Offshore Oil & Gas Productions, Refining, Energy and
Process control*

Highlights:

- ▶ **Thickness measurements through coatings**
- ▶ **Lowest cost** non-invasive wall trending solution
- ▶ **Any sized asset** deployment options
- ▶ **Intrinsically safe** for deployment across all oil & gas applications

Key Features:

- ▶ HotSense™ sensors can perform thickness monitoring without coating removal or damage. Protective coatings are preserved.
- ▶ HotSense™ ultrasonic sensors are the only fully intrinsically safe ultrasonic sensors which can be used to monitor thickness through coatings at high or low temperatures.
- ▶ Dual element sensor, proven on standard oil and gas coatings, ideal for pitting/heavily corroded applications
- ▶ Make measurements using standard ultrasonic gauges or with the automated, wireless, CALIPERAY system.
- ▶ Offering in-service monitoring -55 to +150 °C (-67 to +302 °F)
- ▶ Coated assets can be monitored in-service without the need for shut down, plant access or isolation.
- ▶ Sensors can be deployed while plant is in operation – no welding required, with bonded and sensor relocation options



1. Key benefits:

- ▶ *Lowest cost permanent wireless monitoring solution*
- ▶ *Increase safety with in-service monitoring of coated pipes*
- ▶ *In-service installation with no need for welding maximises plant availability and reduces installation cost*
- ▶ *Deployable across oil & gas and other hazardous industries with ATEX Zone 0 certification*
- ▶ *Ideal for upstream applications, relocatable sensors provide maximum flexibility and value*
- ▶ *Standard UT methods compatible with hardware and practices and upgradeable to fully automated*

2. The Coatings Inspection Challenge

- Many pipes, particularly offshore, are protected from external corrosion by protective coatings.
- There is a requirement to measurement the internal wall loss of assets using non-destructive testing without damaging the integrity of protective coatings.
- Non-invasive ultrasonic thickness measurements must be made through coatings without causing damage which could lead to premature retirement or failure of the asset being inspected.

3. HotSense™ Solution

- Generate high resolution wall loss trending data for coated assets.
- HotSense™ dual element sensors can be deployed directly onto coated assets using a bonded/ magnetic system
- Measurements can be made through standard coating thicknesses of 0.2 – 1.2 mm without coating removal or modification.
- Coupling method maintains coating integrity.
- Relocatable options allow sensors to be repositioned as required.
- Stable thickness measurements can be made across the temperature range of -55 °C/-67 °F to 150 °C/302 °F using the HotSense Measurement Hub and standard flaw detectors or using the CALIPERAY wireless monitoring system.

