CR:SR Solution

CUI MONITORING SYSTEM

OVERVIEW

CorrosionRADAR's CR:SR Solution is a short-range, spot monitoring solution designed to detect and track corrosion under insulation (CUI) risk on high-value assets and hard-to-access locations. CR:SR Solution sensors are installed through existing insulation enabling rapid and cost-effective deployment. Its unique design delivers actionable CUI intelligence between inspection campaigns, providing an accurate status on CUI progression to enable more timely and confident asset integrity decisions.

The data acquired from CR:SR sensors include temperature, humidity, moisture and corrosion. All data is delivered to the CLARITY analytics platform which transforms raw sensor data into prioritized CUI risk intelligence at three visibility levels: Dashboard (combined site view), Site View (overall asset health), and Asset View (pinpointed risk locations).

KEY BENEFITS

- **Deploy quickly**
  Easily installed through controlled access point
- **Identify high-risk locations early**
  Detect persistent corrosivity before failure
- **Optimize inspection scope**
  Focus inspections on confirmed high-risk assets
- **Reduce inspection cost**
  Extend inspection cycles
- **Minimize disruption**
  Reduce unscheduled shutdowns
- **Extend asset life**
  Defer capital expend with data driven intelligence

PHYSICAL SPECIFICATIONS

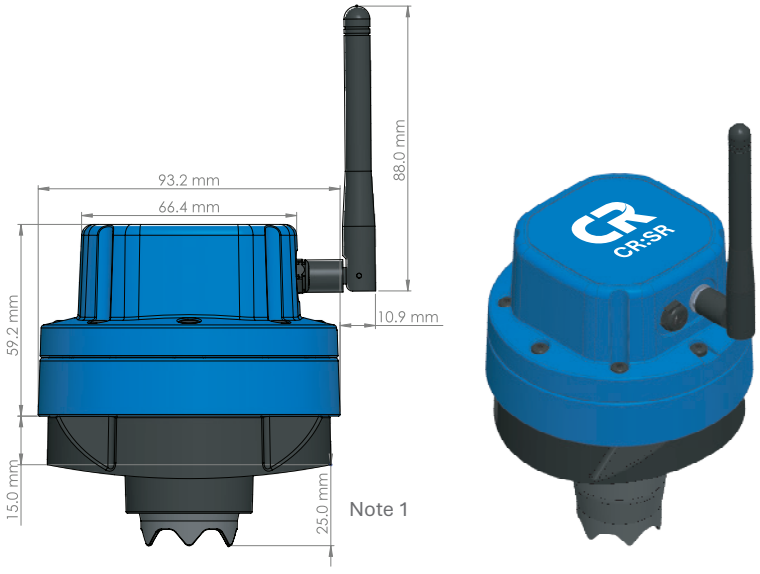

Figure 1 - CR:SR sensor physical properties

Note 1: Dimension varies to accommodate insulation thickness (25mm, 50mm or 100mm)

POWER AND COMMUNICATION

Power Source	• Autonomous battery operation – 5 to 7 years typical lifespan • Ultra-low power design – Optimized for extended monitoring intervals
Wireless Connectivity	• LoRa (Long-Range) – Primary communication protocol. Same as LR monitoring system.

TEMPERATURE OPERATING RANGE

External Ambient Temperature	-40°C to +65°C (-40°F to +149°F)
Asset Surface Temperature	-40°C to +204°C (-40°F to +400°F)

INSTALLATION AND PLACEMENT GUIDANCE

Standard Placement – Linear Assets	For straight pipe runs and linear insulated assets, deploy sensors at 2-metre (≈6.5-foot) intervals to achieve continuous coverage and trend visibility across the asset. The CR:SR Solution has been optimized for applications with mineral wool insulation, with a typical installation time of 20 to 30 minutes from start to finish.
High-Risk Location Priority	CR:SR Solution sensor deployments should be focused on known high-risk geometries and locations where CUI potential is elevated: • Elbows and bends – Points of stress and moisture pooling • Flanges and connections – Thermal cycling and potential ingress points • Support brackets and clamps – Areas of differential thermal expansion • Short pipe runs and low-spots – Areas prone to moisture accumulation
Suitability	CR:SR Solution sensors are designed for use on the following asset types: • Vertical and horizontal pipe columns • Pressure vessels and storage tanks • Heat exchangers and bundle systems • Distillation and process columns

COMPLIANCE AND CERTIFICATIONS

- ATEX/IECEx/cNRTLus – Node (electronics): Class 1 Zone 2 / Class 1 Div 2*
- ATEX/IECEx/cNRTLus – Sensors: Class 1 Zone 1 / Class 1 Div 1*
- IP66 Ingress Protection – Sealed against water and dust intrusion*

** Compliance pending*

CONTACT US

The CR:SR Solution integrates seamlessly into your existing asset monitoring workflows.

To discuss deployment options, conduct a site assessment, or request a technical briefing, contact the CorrosionRADAR team.

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