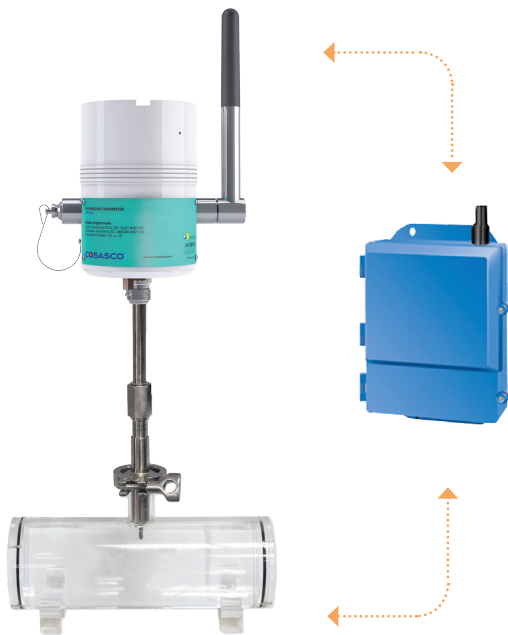


Wireless Rouge Monitor System

Accurate measurement of ultralow rouging rates in stainless steel systems.



Reduces unplanned downtime



Detects real-time rouge rate



Optimizes chemical dosage

The Wireless Rouge Monitor provides accurate measurement of ultralow corrosion (rouging) rates in high purity biopharmaceutical water systems. Monitoring the rouging rate of typical ions of ferric, chromium, molybdenum and nickel oxides in the water assists the determination of derouging and passivation frequency. The installation and use of a Rouge Monitor provide absolute measurements for rouge rate and rouge accumulation (thickness).

The high sensitivity frontend probe consists of electropolished 316L stainless steel and probe assembly. The probe assembly is connected to a battery operated wireless transmitter providing real-time data and seamless integration.

The WirelessHART protocol uses spread spectrum frequency hopping 2.4GHz radios. These radios communicate directly with the gateway or through other transmitters forming a mesh network. The WirelessHART gateway supports up to 100 units. The typical distance between transmitters is 300-900ft. The gateway is located in a central position, powered by 24 VDC and connected to the DCS (Distributed Control System) system. Using a gateway, the rouging rate in microns/month and rouge accumulation in microns is displayed in the DCS, SCADA (Supervisory Control and Data Acquisition), BMS (Building Management System), data highway, or process control system.

Rouge measurement range is 0.001 – 10 μ (1 to 10,000 nanometer).

Operating Specifications

Wireless Transmitter

Measurement Ranges:

| | |
|---------------------------|--|
| Corrosion Rate | Rouging rate: 0 to 9.999 μ /month Rouging rate resolution: 0.001 μ /month |
| Potential Measurement | 0 to 2 volts |
| Potential Input Impedance | >20 M Ω |
| Rouging rate resolution | 0.001 microns/month |
| Data Transmit Rate | 20 to 60 minutes |
| Communication | 2.4 GHz IEEE 802.15.4. WirelessHART 7 Protocol |
| Battery Life | 3 years at 20 min measurement interval |
| Ambient Temperature Range | -40°C to +70°C |
| Antenna | Integrated Omni-directional Antenna Impedance: 50 Ω Gain: +2dBi Maximum SWR (Standing Wave Ratio):3:1 Maximum radio power output: 10 mW |



Probe

| | |
|-------------------|--|
| Housing Materials | 316L stainless steel probe body with electropolished stainless steel (or other alloy) electrodes with Tri-Clover Flange Mounting |
| Temperature Range | 0-200° C |
| Deposition rate | 0.000-3.000 μ /month at 1.3 μ S/cm (0.7 M Ω -cm) 0.000-0.100 μ /month at 0.054 μ S/cm (18 M Ω -cm) |
| Operating Range | 100-0.025 μ S/cm conductivity 0.01-40 M Ω -cm resistivity |

Wireless Transmitter Physical Specifications

Enclosure

| | |
|-------------------|--|
| Rating | IP66 |
| Housing Materials | 6061-T6 Aluminum with Polyester Enamel over Epoxy Primer 316 Stainless Steel |

Power Supply

7.2 V Lithium Power Module

Hazardous Area Location Certified. (replacement okay in hazardous locations).

Weight

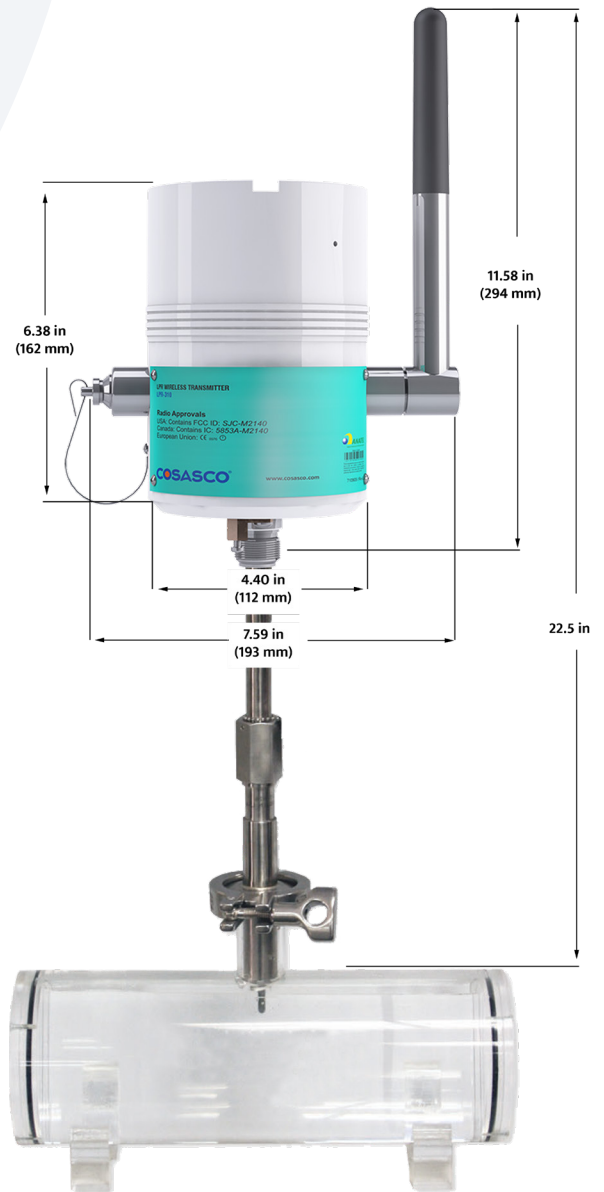
| | |
|-------------------------|---|
| Aluminum Housing | 7.5 lbs (3.4 kg) with Lithium Power Module installed |
| Stainless Steel Housing | 15.3 lbs (6.9 kg) with Lithium Power Module installed |

Operational Pole or Wall Mounting

Metal Bracket for direct wall mount and adjustable U-Bolt mounting for 2" pipe size vertical or horizontal pole mounting.

Probe Mounting

Directly to probe via Probe Adapter.
Probe Adapter Length: Minimum 6.75"



1420 WirelessHART Gateway Functional Specifications



Input Power

24 VDC, 500 milliamps required to power the Smart Wireless

Gateway module (included)

Radio frequency power output from Antenna

Maximum of 10 MW (10 dBm) EIRP

Maximum of 40 MW (16 dBm) EIRP for WNZ

High gain option

Environmental

Operating Temperature Range -40 to 158°F (-40 to 70°C)

Operating Humidity Range 10-90% relative humidity

EMC Performance

Complies with EN61326-1:2006

Self-Organizing Network Specifications

Protocol IEG62591 (WirelessHART) 2.4 - 2.5 GHz DSSS

Maximum Network Size 100 wireless devices @ 8 sec.

Supported Device Update Rates 1-60 minutes (based on R-310 transmitter)

Network Size/Latency 100 Devices: less than 10 sec.
50 Devices: less than 5 sec.

Data Reliability >99%

Communication Specifications RS485, Ethernet, Modbus, OPC

*1410 WirelessHART also available

Gateway Physical Specifications

Weight

10 lb (4.5 kg)

Materials of Construction

Housing Low-copper aluminum, NEMA 4X

Paint Polyurethane

Cover Gasket Silicone Rubber

Antenna

PBT/PC integrated Omnidirectional Antenna

Certifications

Class 1 Division 2 (U.S.) Equivalent Worldwide

