Rosemount™ WT210 Wireless Corrosion Transmitter

- Gain visibility to health of critical piping with a non-intrusive, easy to install corrosion monitoring system
- Increase uptime by proactive maintenance on corroding piping, pairing with Data Manager for long term tracking and actionable alerts
- Backed by proven experience in wireless field instrumentation and expert technical support from Emerson
Emersons Wireless solution

IEC 62591 (WirelessHART®) ... the industry standard

Self-organizing, adaptive mesh routing

- Backed by Emerson’s proven experience in Wireless field instrumentation and expert technical support.
- The self-organizing, self-healing network manages multiple communication paths for any given device. If an obstruction is introduced into the network, data will continue to flow because the device has other established paths.

Reliable wireless architecture

- Standard IEEE 802.15.4 radios
- 2.4 GHz ISM band sliced into 15 radio-channels
- Time Synchronized Channel Hopping
- Direct sequence spread spectrum (DSSS) technology delivers high reliability in challenging radio environment

Emerson’s Wireless

- Seamless integration to all existing host systems
- Native integration into DeltaV™ and Ovation™ is transparent and seamless
- Gateways interface with existing host systems using industry standard protocols including OPC, Modbus® TCP/IP, Modbus RTU, and EtherNet/IP™

Layered security keeps your network safe

- Ensures data transmissions are received only by the wireless Gateway.
- Network devices implement industry standard Encryption, Authentication, Verification, Anti-Jamming, and Key Management.
- Third party security verification including Achilles and FIPS197, with password strength monitoring, user-based log in, password reset requirements, automatic lockout, password expiration requirements.

Contents

Emersons Wireless solution........................................................................................................................................................................... 2
Rosemount WT210 Wireless Corrosion Transmitter........................................................................................................................................ 3
Ordering information.................................................................................................................................................................................. 4
Specifications.......................................................................................................................................................................................... 5
Product certifications.................................................................................................................................................................................. 7
Dimensional drawing.................................................................................................................................................................................. 9
Rosemount WT210 Wireless Corrosion Transmitter

Corrosion and erosion monitoring
- May be used on metal with continuous service temperatures up to 600 °C (1112 °F).
- Transmitter communicates process variable and status information via the wireless network for integration into existing host systems.

Reliable data in challenging environments
- Data Manager application provides long term pipe thickness status and trending, allowing for proactive maintenance with actionable alerts based on pipe condition.
- Built-in thermocouple monitors pipe surface temperature and allows compensation in the thickness measurement for the most reliable measurement, even in high temperature environments.

Mounting flexibility
- Rosemount WT210 corrosion monitoring sensors can be installed using studs welded to the pipe or vessel.
- Sensor mounting clamps are used as an alternative to stud welding up to 300 °C (570 °F).

Reliable transmitter performance
- Rugged and robust design of the transmitter ensures reliable performance in harsh environments.
- WirelessHART® creates a self-forming and self-managing wireless mesh, delivering continuous wall thickness measurements of the highest integrity and accuracy.
Ordering information

Table 1: Rosemount WT210 Ordering Information

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Model</th>
<th>Product description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT210</td>
<td>Permasense Corrosion Transmitter ★</td>
</tr>
</tbody>
</table>

**Transmitter output**

| X     | Wireless ★                                              |

**Measurement type**

| 1     | Insight ★                                                |

**Product certifications**

| NA    | No Approval ★                                           |
| I1    | ATEX Intrinsic Safety ★                                 |
| I5    | USA Intrinsically Safe ★                                |
| I6    | Canada Intrinsically Safe ★                             |
| I7    | IECEx Intrinsic Safety ★                                |

**Wireless update rate; operating frequency, and protocol**

| WA3   | User configurable update rate, 2.4 GHz, WirelessHART ★  |

**Omni-directional wireless antenna and SmartPower™ solutions**

| WP6   | Internal antenna, compatible with Corrosion Power Module (Standard Power Module Included) ★ |

**Typical model number:** WT210 X 1 NA WA3 WP6

Table 2: Spare Parts and Accessories

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP20E-5100-0001</td>
<td>BP20E Power Module, SGSus-c ★</td>
</tr>
<tr>
<td>BP20E-5100-0002</td>
<td>BP20E Power Module, ATEX, IECEx ★</td>
</tr>
<tr>
<td>BP20E-5100-0003</td>
<td>BP20E Power Module, EAC EX</td>
</tr>
<tr>
<td>BP20E-5100-0004</td>
<td>BP20E Power Module, Japan</td>
</tr>
<tr>
<td>IK220-2000-0101</td>
<td>Commissioning kit (SGSus-c)</td>
</tr>
<tr>
<td>IK220-2000-0102</td>
<td>Commissioning kit (ATEX, IECEx, IA)</td>
</tr>
<tr>
<td>IK220-2000-0103</td>
<td>Commissioning kit (EAC)</td>
</tr>
<tr>
<td>IK220-2000-0104</td>
<td>Commissioning kit (CML)</td>
</tr>
</tbody>
</table>

For more information, please refer to the following documents:
BP20E PDS 00813-0100-4212 and IK220 PDS 00813-0100-4213
Specifications

Functional specification

Output
IEC 62591 (*WirelessHART*) 2.4 GHz

Humidity limits
0-100 percent relative humidity

Transmit rate
Every 12 hours by default

Radio frequency power output from antenna
Internal (WP option) antenna: Less than 10 mW (10 dBm) EIRP

Surface temperature
Accuracy:10 °C (18 °F)
Repeatability: within 1 °C (2 °F)

Physical specifications

Application requirements

| Wall thickness:         | Minimum 0.125 in. (3 mm) |
|                        | Maximum 2 in. (50 mm)    |
| Maximum insulation thickness: | 8 in. (200 mm) |
| Compatible pipe materials: | Carbon steel |
|                         | Duplex Stainless Steel |
|                         | Super Duplex Stainless Steel |
|                         | Unhardened martensitic steels |

Material selection
Emerson provides a variety of Rosemount products with various product options and configurations including, materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser’s sole responsibility to make a careful analysis of all process parameters (such as all chemical components, temperature, pressure, flow rate, abrasives, contaminants, etc.), when specifying product materials, options, and components for the particular application. Emerson is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product options, configuration, or materials of construction selected.

Electrical connections/power module
- Replaceable, non-rechargeable, Intrinsically Safe Lithium-Thionyl Chloride power module
- Nine-year power module life at reference conditions with BP20E module(1)

Field Communicator connections
Commission the WT210 using CC21 with BP20E not installed

Materials of construction

(1) Reference conditions are 68 °F (20 °C), transmit rate of twelve hours, and routing data for three additional network devices.
Housing [PBT/PC]
Power module housing [PBT/PC]

**Waveguide and Thermocouple Sheath**
Stainless steel

**Potting compound**
Epoxy

**Sensor type**
Waveguide based, dual probe arrangement (no couplant required)

**Mounting**
Transmitters are directly attached to process piping or vessel by welded stainless steel studs and can withstand pipe operating temperature up to +1112 °F (up to +600 °C)
Alternate methods include mounting the transmitter using pipe clamps up to 570 °F (300 °C)

**Weight**
WT210 with BP20E power module: 2.1 lb. (0.97 kg)
WT210 without power module: 1.3 lb. (0.61 kg)

**Enclosure ratings**
IP67(2)

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**Performance specifications**

**Temperature limits**
Ambient limit: –40 to 167 °F (–40 to 75 °C)
Storage limit: –58 to 167 °F (–50 to 75 °C)

**Electro Magnetic Compatibility (EMC)**
Meets all relevant requirements of EN 61326-1: 2013

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**Wireless output specifications**

**Range**
Up to 160 ft. (50 m) line of sight

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(2) When mated to the power module.
Product certifications

Rev 0.1

European Directive Information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at Emerson.com/Rosemount.

Telecommunications Compliance

All wireless devices require certification to ensure they adhere to regulations regarding the use of the RF spectrum. Nearly every country requires this type of product certification. Emerson is working with governmental agencies around the world to supply fully compliant products and remove the risk of violating country directives or laws governing wireless device usage.

FCC and IC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation. This device must be installed to ensure a minimum antenna separation distance of 7.87 in. (20 cm) from all persons.

Ordinary Location Certification

As standard, the Power Module has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

USA

Certificate: SGSNA/17/SUW/00281
Markings: CLASS I, DIV 1, GP ABCD, T4, Tamb = -50 °C to +75 °C, IP67
Canada

Certificate: SGSNA/17/SUW/00281
Standards: CAN/CSA C22.2 No. 157-92 (R2012) +UPD1 +UPD2
Markings: CLASS I, DIV 1, GP ABCD, T4, Tamb = -50 °C to +75 °C, IP67

Europe

Certificate: Baseefa14ATEX0053X
Standards: EN IEC 60079-0:2018
EN 60079-11: 2012
Markings: Ex II 1 G, Ex ia IIC T4 Ga, Tamb = -50 °C to +75 °C, IP67

Specific Conditions for Safe Use (X):
1. The optional silicone rubber boot may present a potential electrostatic ignition risk and must not be rubbed or cleaned with a dry cloth.
2. The enclosure may present a potential electrostatic ignition hazard and must not be rubbed or cleaned with a dry cloth.

International

Certificate: IECEx BAS 14.0022X
Markings: Ex ia IIC T4 Ga, Tamb = -50 °C to +75 °C, IP67

Specific Conditions for Safe Use (X):
1. The optional silicone rubber boot may present a potential electrostatic ignition risk and must not be rubbed or cleaned with a dry cloth.
2. The enclosure may present a potential electrostatic ignition hazard and must not be rubbed or cleaned with a dry cloth.
Dimensional drawing

Figure 1: Rosemount WT210 with BP20E Power Module

Dimensions are in inches (millimeters).