Wireless Transmitter for Contacting Conductivity

- High accuracy and reliability for monitoring and control applications
- Self-organizing network for high data reliability and network stability
- Industry Leading wireless Security
- Compatible with smart Wireless gateway and Emerson Process Management Wireless HART® networks
- Easy to read two-line display with easy to use menus in six local languages
- Wireless HART® 7 Digital Communications
- Compatible with 2-electrode and 4-electrode sensors from Rosemount Analytical

Features and Applications

The 6081-C transmitter is ideal for monitoring applications, especially in hard-to-reach or cost-prohibitive locations. The 6081-C measures conductivity, resistivity, total dissolved solids or custom curve variable in the range 0 to 600,000 µS/cm (600mS/cm) The transmitter has a rugged, cast aluminum weatherproof and corrosion-resistant enclosure (NEMA 4X, IP66). The transmitter includes a two-line 16-character display with simple and intuitive menu screens. Plain language prompts in six (6) local languages guide the user through the programming and calibration procedures. The 6081 is compatible with 2-electrode and 4-electrode contacting conductivity sensors manufactured by Rosemount Analytical.

Installation and start-up of the 6081-C wireless transmitter is simple. Just power the 6081-C and assign it to a wireless network with a Smart Wireless Gateway. The unit will auto-locate the most efficient path to the host and will begin transmitting measurement data via 2.4 GHz wireless communications. The Self-Organizing Network ensures exceptional data reliability and network stability. All of Emerson Process Management's wireless devices employ Encryption, Authentication, Verification, Anti-Jamming and Key Management to ensure data transmission and security. Rosemount Analytical devices include intelligent power management to reduce power consumption and extend power module life while delivering highly reliable measurements with rich HART data and diagnostic information. HART digital communication allows access to AMS (Asset Management Solutions) for live process variables, useful diagnostics and troubleshooting information.

Specifications - General

Enclosure: Cast aluminum. NEMA 4X, IP66
Dimensions: 6.55" x 5.40" x 5.15" (166mm x 137mm x 131mm)
Conduit Openings: ¾" FNPT
Ambient Temperature: -4 to 149 °F (-20 to 65 °C)
Storage Temperature: -22 to 158 °F (-30 to 70 °C)
Relative Humidity: 0 to 95% (non-condensing)
Weight/Shipping Weight: 7 lbs/8 lbs (3.2/3.6 kg)
Digital Communications: HART 7 WirelessHART

ROSEMOUNT® Analytical

EMERSON™ Process Management

Wireless Specifications

Output: WirelessHART V7

Transmit Rate: User selectable, 1/sec. to 1/60 min (via Smart wireless Gateway or AMS™)

Measurement update rate: 1/sec. to 1/60 min

Antenna: PBT/PC integrated omni-directional antenna

Radio Frequency: 2.4 GHz DSSS

Transmission distance - line of sight: about 600 ft (ideal RF conditions and power module condition)

Power: Lithium thionyl chloride long life power module

Power Module Life (estimated): Four years at once per minute update rate, 25 °C ambient, and minimum display usage.

Functional Specifications

Measurements: conductivity in the range 0 to 600,000 µS/m (600mS/cm). Measurement choices are conductivity, resistivity, total dissolved solids, salinity, and % concentration. The % concentration selection includes the choice of five common solutions (0–12% NaOH, 0–15% HCl, 0–20% NaCl, and 0–25% or 96-99.7% H_2SO_4).

Input filter: time constant 1–999 sec, default 2 sec.

Response time: 3 seconds to 100% of final reading

Salinity: uses Practical Salinity Scale

Information and Status: Information screens display cell constant, zero offset in air, zero offset in water, RTD offset, faults and warnings, ambient temperature, radio transmission status, network ID number, Power Module voltage and estimated life, transmitter model, and software version. The conductivity concentration algorithms for these solutions are fully temperature compensated. Three temperature compensation options are available: manual slope (X%/°C), high purity water (dilute sodium chloride), and cation conductivity (dilute hydrochloric acid). Temperature compensation can be disabled, allowing the analyzer to display raw conductivity.

Note: Selected 4-electrode, high range contacting conductivity sensors are compatible with 6081-C.

Display: 2-line, 16 character display supports display of µS/cm, mS/cm, MΩ-cm, % concentration, and ppm units. Display shows temperature.

Recommended Sensors:

140	Retractable Conductivity
141	Insertion High Conductivity
142	Insertion Low Conductivity
150	Insertion/Submersion Conductivity
400/VP	Screw-In Low Conductivity
401	Screw-In High Conductivity
402/VP	Retractable Conductivity
403/VP	Sanitary Conductivity
404	Low Flow Conductivity
410/VP	Four Electrode Sensor

Diagnostics: The internal diagnostics can detect:

- CPU Error
- RTD Error
- Temperature High Warning
- Temperature Low Warning
- Sense Line Open Warning
- Negative Reading Warning
- Out of Range Warning
- % of Range Warning
- Need Factory Cal Warning
- Need Curve Setup Warning
- Battery V Low Warning
- EE Chksum Error
- EE Write Error
- Keyboard Stuck Warning

Once a fault or warning is detected, the display will show a message describing the problem.

Sensor Temperature Range: -10 to 200 °C (PT1000)

Approvals:

RFI/EMI: EN-61326
EN-61326
EN 301 489-1 V1.2 2002
EN 301 489-17: V1.4.1 2002
EN 60950-1: 2001
EN 300 328 V 1.6.1 (2004-11)
EN 60079-0:2009
EN 60079-11:2007 per CE certificate

CE

Hazardous Location Approvals

Intrinsic Safety:

Class I, Division 1, Groups A, B, C and D
Class II, Division 1, Groups E, F and G;
Class III T4 Tamb : -20 to +65 °C
Type 4x, IP66

CE 1180 II1G
Baseefa 10 ATEX 0149X
Ex ia IIC T4 Ga (-20 °C ≤ Ta ≤ +65 °C)

Intrinsically Safe

Class I, Division 1, Groups A-D; T4
Ta = -20 °C to 65 °C in accordance with Control Drawing No.1400322
IP66

Class I, Zone 0, AEx ia IIC T4
Ta = -20 ˚C to 65 ˚C; in accordance with Control Drawing No. 1400322
IP66

Non-Incendive:

Class I, Division 2, Groups A, B, and D
Dust Ignition Proof
Class II, Division 2, Groups F and G
T4 Tamb : -20 to +65 °C

Class I, Division 2, Groups A-D, T4
Ta = -20 °C to 65 °C;

Contacting Conductivity

Temperature Specifications: Two Electrode Sensors

Temperature range	0–200 °C
Temperature Accuracy, Pt-1000, 0-50 °C	± 0.1 °C
Temperature Accuracy, Pt-1000, Temp. > 50 °C	± 0.5 °C

Recommended Sensors for Conductivity:

All Rosemount Analytical ENDURANCE 400 series conductivity sensors (Pt 1000 RTD) and PUR-Sense 410 sensor.

PUR-SENSE™ family 4-electrode sensors

ENDURANCE series of conductivity sensors

Performance Specifications

Two Electrode Contacting Conductivity Linearity		
Cell Constant	**Loop Range µS/cm**	**Loop Linearity (@ 25 °C ambient)**
0.01	0.01 to 0.03	1.5% of reading +/- 0.0005 µS/cm
0.01	0.03 to 6.0	1.5% of reading.
0.01	6.0 to 50	3% of reading
0.1	0.5 to 50	1.5% of reading
0.1	50 to 600	3% of reading
1.0	50 to 6000	0.5% of reading
1.0	6000 to 20,000	3% of reading (with capacitance correction OFF: default)
1.0	6000 to 50,000	3% of reading (with capacitance correction ON)

Four Electrode Contacting Conductivity Linearity	
Loop Range	Loop Linearity (@ 25 °C ambient)
0.03 µS/cm to 600 mS/cm	+/- 4% of reading +/- 1 µS/cm

Ordering Information

The 6081-C measures conductivity in the range 0 to 600,000 µS/cm and is compatible with 2-electrode and 4-electrode sensors from Rosemount Analytical. The transmitter has a rugged, cast aluminum enclosure (NEMA 4X). The device transmits live process variables and useful diagnostics via HART 7 digital communications to a 1420 Wireless Gateway. The Emerson Process Management complete wireless solution implements a Self-Organizing Network for high data transmission reliability and state-of-the-industry wireless security using robust 2.4 GHz DSSS radio transmissions.

Model	Description
6081	Wireless Transmitter (must be operated with the 1420 Gateway with Burst Rate, Operating Frequency and Protocol Ordering option "A3"
Measurement	Required Option
C	Contacting Conductivity
Agency Approval	Required Option
60	None Required (General Purpose Installation)
67	FM Approved, Intrinsically Safe, and Non-Incendive
69	CSA Approved, Intrinsically Safe, and Non-Incendive
73	ATEX Approved, Intrinsically Safe
Spectrum Approval	Required Option
101	United States, Canada and Modular Approval Countries[1]
102	European Union and Modular Approval Countries[2]
103	Mexico
104	Singapore
105	China
106	Australia
107	India
108	Brazil
109	France
110	Argentina
111	Ecuador
112	Japan
113	Malaysia
114	Peru
116	Russia
117	Saudi Arabia
118	South Africa
119	South Korea
120	Turkey
121	Venezuela
122	United Arab Emirates

Accessories	
23820-00	Pipe/Wall Mounting Bracket kit for the 6081, carbon steel, painted
PN 701PBKKF	Power Module

Note: One power module included in price of 6081, but not installed

1. Modular Approval Countries for code -101: Aruba, Bahamas, Barbados, Belize, Bolivia, Bosnia & Herzegovina, Chile, Columbia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Kyrgyzstan, Montenegro, Morocco, Netherlands Antilles, Nicaragua, Panama, Puerto Rico, Serbia, Trinidad & Tobago
2. Modular Approval Countries for code -102: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden. Switzerland, and United Kingdom.

Emerson's Smart Wireless Solution

Self-Organizing, Adaptive Mesh Routing

- No wireless expertise required, devices automatically find the best communication paths
- Network continuously monitors paths for degradation and repairs itself
- Adaptive behavior provides reliable, hands-off operation and simplifies network deployments, expansion and reconfiguration
- Supports both star and mesh topologies

Industry Standard Radio with Channel Sequencing

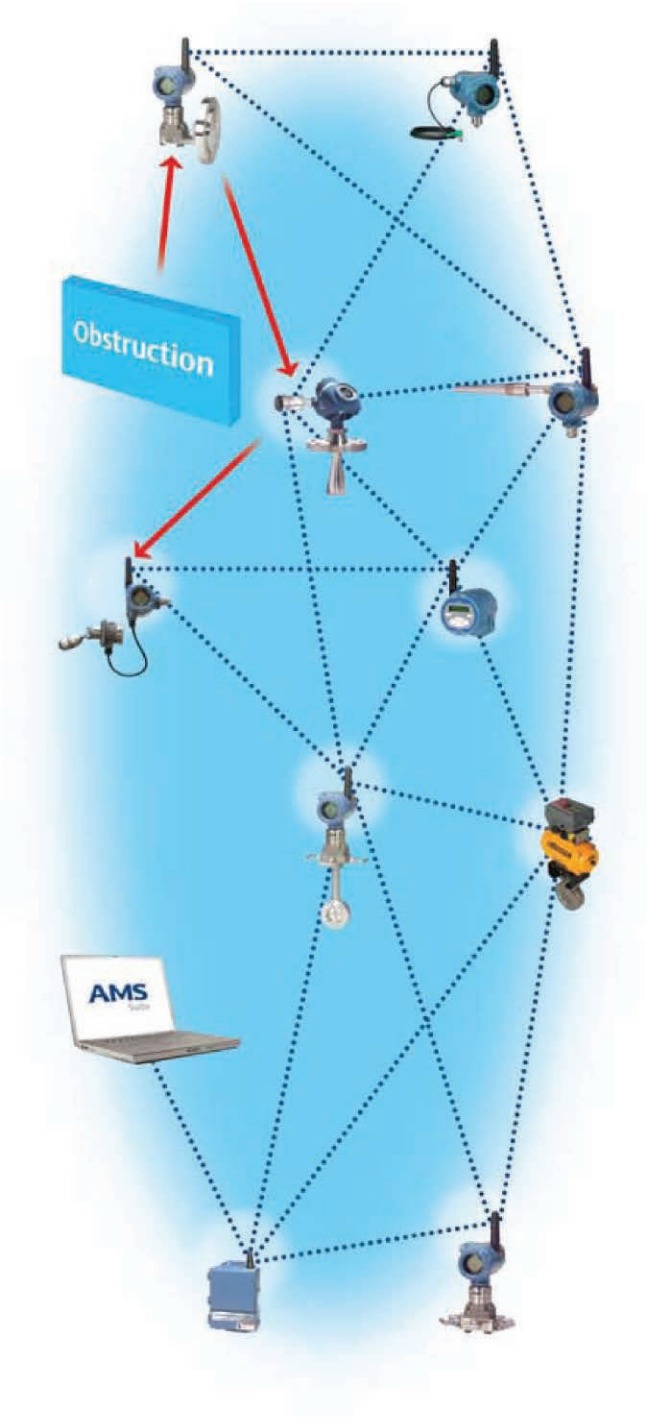
- Standard IEEE 802.15.4 radios
- 2.4 GHz ISM band sliced into 16 radio-channels
- Continually steps through channels to avoid interference and increase reliability
- Direct Sequence Spread Spectrum (DSSS) technology delivers high reliability in challenging radio environment

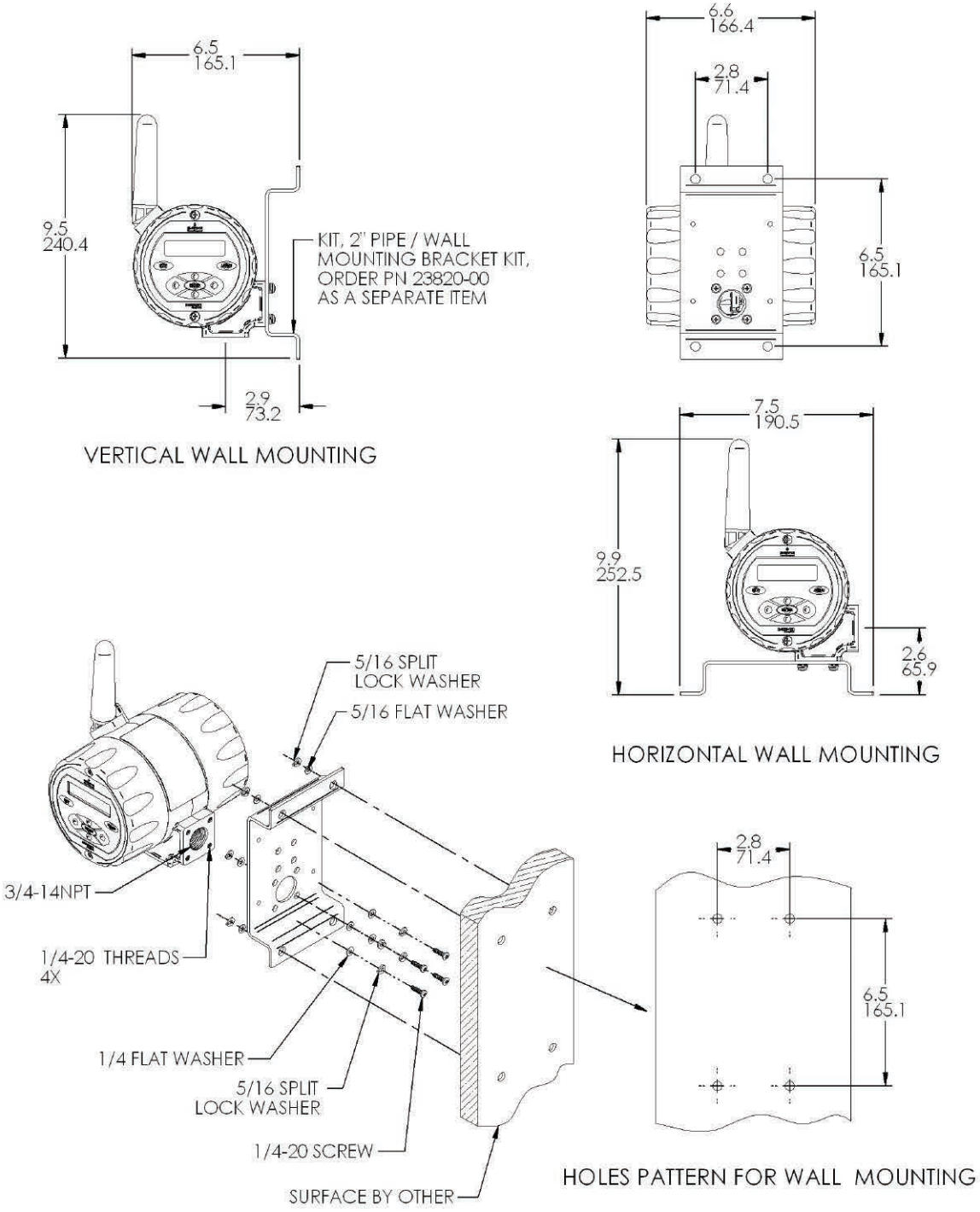
Self-Healing Network

- If an obstruction is introduced into the mesh network, devices will automatically find the best alternate communication path. This alternate path will be created and the information will continue to flow.

Seamless Integration to Existing Hosts

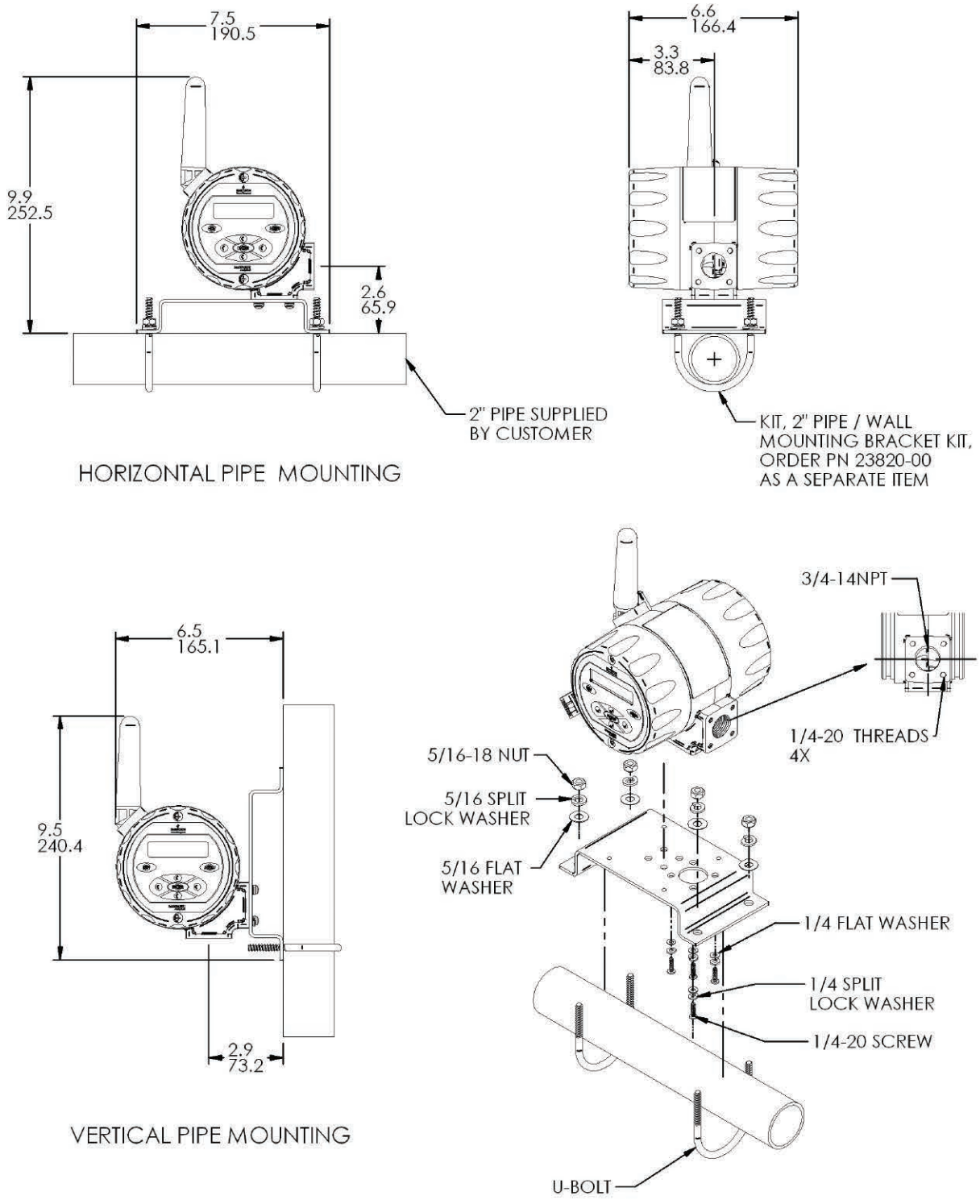
- Transparent and seamless integration
- Same control system applications
- Gateways connect using industry protocols





Wall Mounting Installation for 6081. Use Pipe/Wall Mounting Bracket Kit, PN 23820-00

Note: PN 23820-00 mounting bracket kit includes mounting hardware for pipe mounting only. Wall mounting hardware to be provided by customer. Only use suitable fasteners and hardware to securely fasten the bracket and transmitter to the wall surface.



Pipe Mounting Installation for 6081. Use Pipe/Wall Mounting Bracket Kit, PN 23820-00

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Are You Wireless?

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