

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 1420 WIRELESS GATEWAY and Emerson Process Management WirelessHART™ networks
- EASY TO READ two-line display with easy to use menus in six local languages
- WirelessHART™ 7 Digital Communications
- COMPATIBLE WITH 2-electrode and 4-electrode sensors from Rosemount Analytical



FEATURES AND APPLICATIONS

The Model 6081-C transmitter is ideal for monitoring applications, especially in hard-to-reach or cost-prohibitive locations. Model 6081-C measures conductivity, resistivity, total dissolved solids or custom curve variable in the range 0 to 600,000 $\mu\text{S}/\text{cm}$ (600mS/cm). The transmitter has a rugged, cast aluminum weather-proof and corrosion-resistant enclosure (NEMA 4X). 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. Model 6081 is compatible with 2-electrode and 4-electrode contacting conductivity sensors manufactured by Rosemount Analytical.

Installation and start-up of the Model 6081-C wireless transmitter is simple. Just power the Model 6081-C and assign it to a wireless network with a Model 1420 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.

Dimensions: 6.55" x 5.40" x 5.15" (166mm x 137mm x 131mm).

Conduit Openings: 3/4" FNPT

Ambient Temperature: 32 to 149°F (0 to 65°C)

Storage Temperature: -4 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

WIRELESS SPECIFICATIONS

Output: WirelessHART V7

Transmit Rate: User selectable, 1/sec. to 1/60 min
(via 1420 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 at 25°C ambient.

FUNCTIONAL SPECIFICATIONS

Measurements: conductivity in the range 0 to 600,000 $\mu\text{S}/\text{cm}$ (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 ($X\%/^{\circ}\text{C}$), high purity water (dilute sodium chloride), and cation conductivity (dilute hydrochloric acid). Temperature compensation can be disabled, allowing the analyzer to display raw conductivity. For more information concerning the use and operation of the contacting conductivity sensors, refer to the product data sheets.

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

Display: 2-line, 16 character display supports display of $\mu\text{S}/\text{cm}$, mS/cm, M Ω -cm, % concentration, and ppm units. Display shows temperature.

RECOMMENDED SENSORS:

Model 140	Retractable Conductivity
Model 141	Insertion High Conductivity
Model 142	Insertion Low Conductivity
Model 150	Insertion/Submersion Conductivity
Model 400/VP	Screw-In Low Conductivity
Model 401	Screw-In High Conductivity
Model 402/VP	Retractable Conductivity
Model 403/VP	Sanitary Conductivity
Model 404	Low Flow Conductivity
Model 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)

HAZARDOUS LOCATION APPROVALS

Intrinsic Safety (with appropriate safety barrier):



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

Non-Incendive:



Class I, Division 2, Groups A, B, and D
Dust Ignition Proof
Class II, Division 2, Groups F and G
NEMA 4/4X Enclosure
T4 Tamb : -20 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 Model 400 series conductivity sensors (Pt 1000 RTD) and PUR-Sense Model 410 sensor.



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 +/- 0.0005μS/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 +/- 1μS/cm

ORDERING INFORMATION

Model 6081-C measures conductivity in the range 0 to 600,000 $\mu\text{S}/\text{cm}$ 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 Model 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 Model 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)
69	CSA Approved, Intrinsically Safe
Spectrum Approval	Required Option
101	United States, Canada and Modular Approval Countries ¹
102	EU 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
115	Qatar
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 Model 6081, carbon steel, painted
00753-9220-0001	Power Module

Note: One power module included in price of Model 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.

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

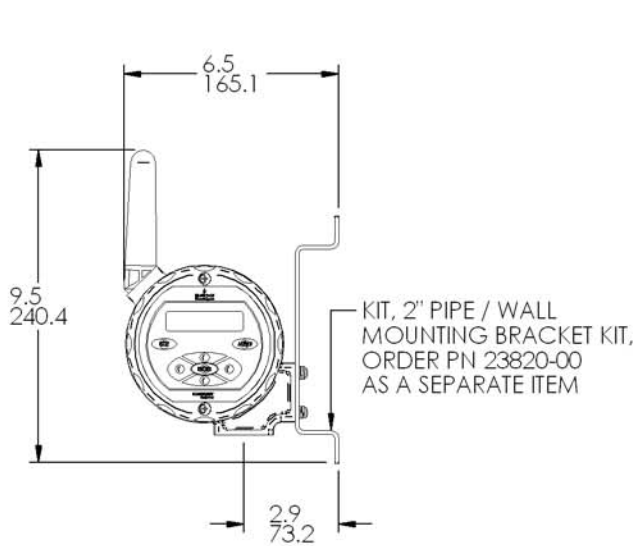
SELF-HEALING NETWORK

- 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.

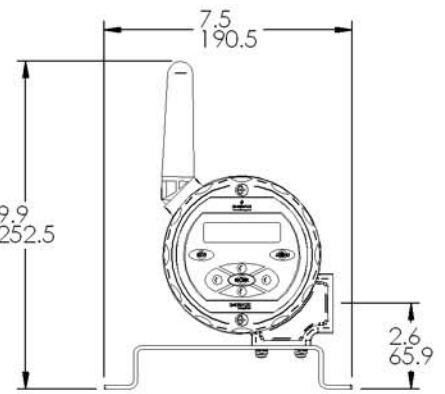
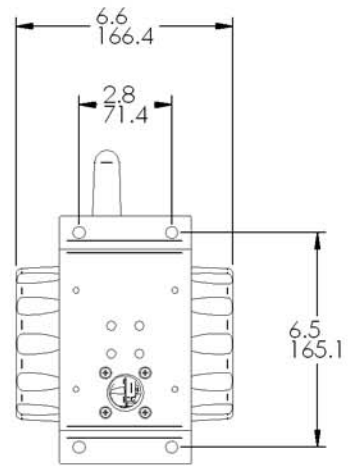
SEAMLESS INTEGRATION TO EXISTING HOSTS

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

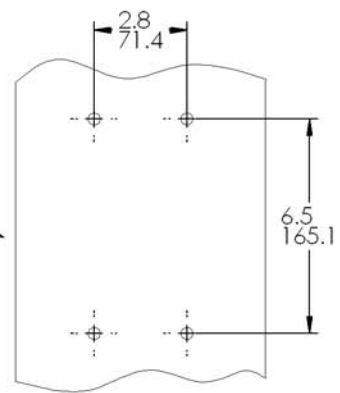
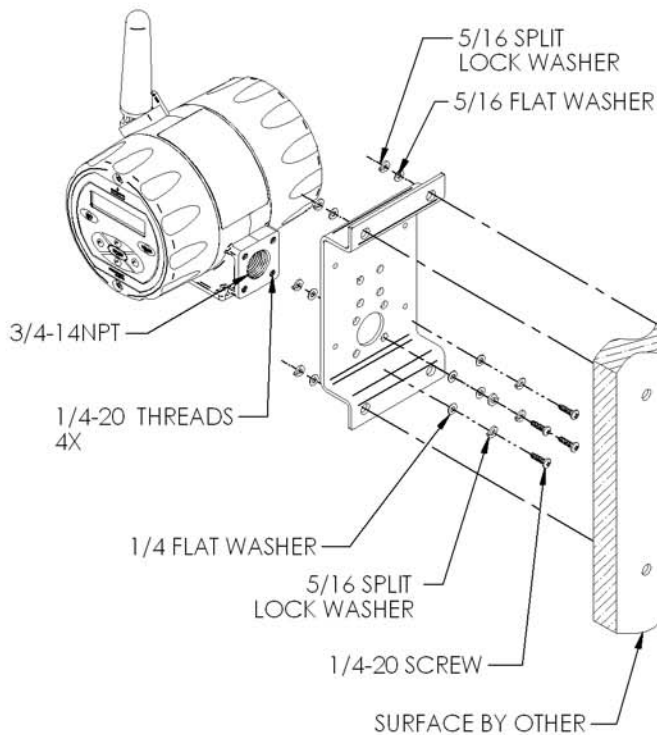




VERTICAL WALL MOUNTING

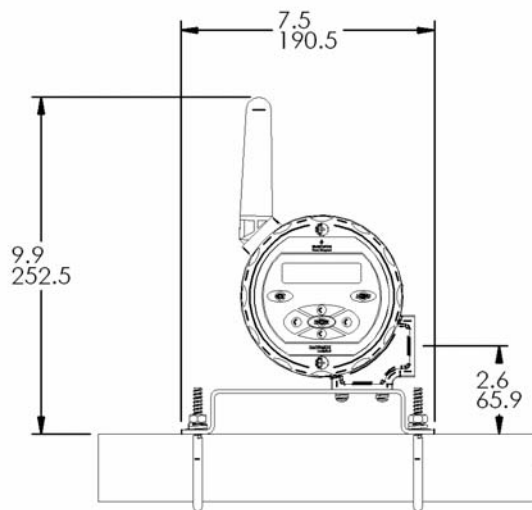


HORIZONTAL WALL MOUNTING



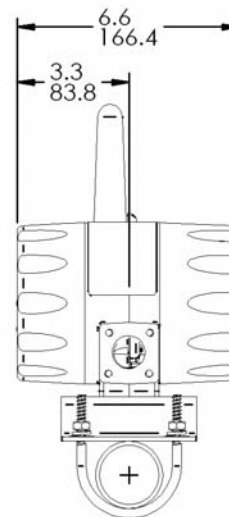
HOLES PATTERN FOR WALL MOUNTING

Wall Mounting Installation Model 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.

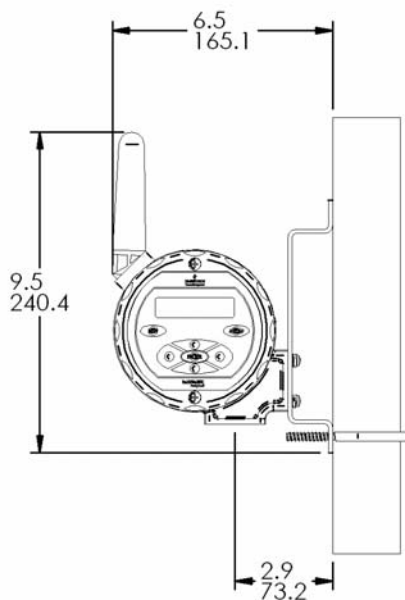


HORIZONTAL PIPE MOUNTING

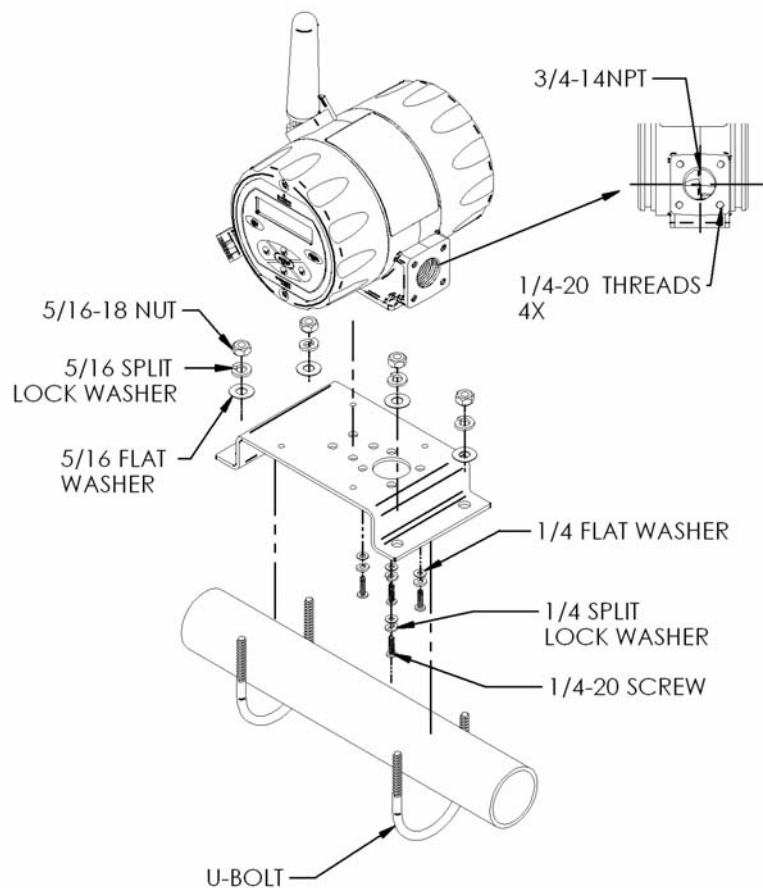
2" PIPE SUPPLIED BY CUSTOMER



KIT, 2" PIPE / WALL MOUNTING BRACKET KIT, ORDER PN 23820-00 AS A SEPARATE ITEM



VERTICAL PIPE MOUNTING



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



*The right people,
the right answers,
right now.*

**ROSEMOUNT ANALYTICAL
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