Honeywell

XYR 6000 SmartCET®Wireless Corrosion Monitoring Transmitter

Model CETW6000M

34-XY-03-31
7/23/07

Specification and Model Selection Guide

Introduction

Building upon the tremendously successful SmartCET series transmitter line; Honeywell brings simple, safe, and secure wireless technology to its measurement portfolio in the XYR 6000 SmartCET Wireless Transmitters.

The XYR 6000 series measurements are part of the WNSIA (Wireless Network for Secure Industrial Applications) compliant field devices.

Measurement and information without wires! The XYR 6000 wireless transmitters series enable customers to obtain data and create information from remote and hazardous measurement locations without the need to run wires, where running wire is cost prohibitive and/or the measurement is in a hazardous location. Without wires, transmitters can be installed and operational in minutes, quickly providing information back to your system.

XYR 6000 wireless transmitters send information to a multinode or series of multinodes creating a MESH infrastructure. Wireless System Gateways (WSG) provide the path to bring that information into Experion PKS or any other control system wirelessly via OPC client or Modbus-TCP.

Each multinode accepts signals from up to 20 wireless transmitters reporting at 1 second, and up to 400 transmitters reporting at slower rates. Up to 20 multinodes can be implemented in the same infrastructure. WSG also provides Modbus-TCP data access to wireless data in addition to OPC.

Transmitter power is supplied by two “D” size lithium batteries with an expected lifetime of up to ten years. Transmitter range with the integral antenna is 1000’ (305 m) under ideal conditions.

The SmartCET transmitter utilizes state-of-the-art algorithms and data analysis techniques to accurately measure corrosion rate and pitting.

The CETW6000M model provides four outputs, which include general corrosion rate, an indicator for localized corrosion (Pitting Factor), Stern-Geary constant (B-value), and fourth variable to help diagnose the corrosion mechanism. The transmitter connects to the process environment through a process specific probe and electrode combination.

Figure 1—XYR6000 SmartCET Corrosion Monitoring Transmitter

Features

- On-line, Real-Time Corrosion Monitoring
- Multivariable Output with general corrosion rate, localized corrosion indicator (pitting), dynamic B-value, and an additional variable for corrosion mechanism analysis
- Withstands 1500 psi (102 bar) Process Pressure (consult factory for high pressure applications)
- Standard ¾” NPT Process Connection for Insertion Probe Type
- Custom Configuration

Implement the value of wireless technology today:

- Measure remote access points simply, safe and securely
- Obtain and utilize previously inaccessible information due to high wiring cost or hazardous locations.
- Easily meet Regulatory Requirements
- Improve process efficiency
- Enhance Flexibility to monitor applications:
  - that have no access to power
  - that are remote or difficult to reach
  - that may require frequent reconfiguration
  - where manual readings have been required previously.

Specifications

Operating Conditions

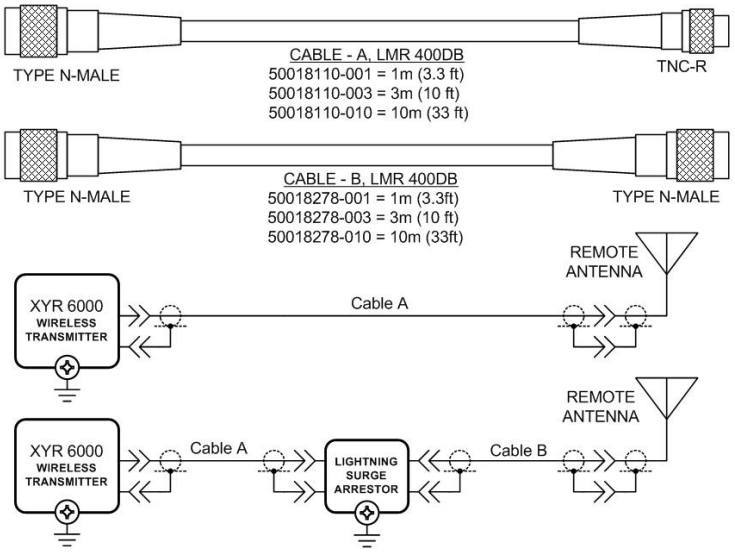
Parameter	Reference Condition (at zero static)		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature	25 ±1	77 ±2	-30 to 85	-22 to 185	-40 to 85	-40 to 185	-40 to 85	-40 to 185
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Ambient Temperature LCD Display visible range	25 ±1	77 ±2	-20 to 70°C -4 to 158°F					
Vibration	Maximum of 4g over 15 to 200Hz.							
Shock	Maximum of 40g.							

Wireless Specifications

Parameter	Description
Wireless Communication	2,400 to 2,483.5 MHz (2.4 GHz) Frequency Hopping Spread Spectrum (FHSS) USA – FCC Certified Canada – IC Certified European Union – RTTE/ETSI Conformity
RF Transmitter Power	125 mW (20.9 dBm) maximum per FCC/IC not including antenna, or 400 mW (26.0 dBm) maximum EIRP including antenna for USA and Canadian locations. 100 mW (20.0 dBm) maximum EIRP per RTTE/ETSI including antenna for EU locations.
Data	Rate: 250 Kbps
Antennas	Integral – 2 dBi omnidirectional monopole Remote – 8 dBi omnidirectional monopole with up to 20 m cable and lightning surge arrester. Remote – 14 dBi Directional parabolic with up to 20 m cable and lightning surge arrester.
Signal Range	Nominal 305 m (1,000 feet) between Field Transmitter and Infrastructure Unit (multinode) or Gateway Unit with a clear line of sight.*

Actual range will vary depending on antennas, cables and site topography.

Remote antenna



CABLE PARAMETERS			LIGHTNING SURGE ARRESTOR PARAMETERS
CABLE A, B LENGTH	CAPACITANCE	INDUCTANCE	
1 m	78.4 pF	0.2 µH	CAPACITANCE = 1 pF
3 m	235.2 pF	0.6 µH	INDUCTANCE = 10 nH
10 m	784 pF	2.0 µH	

Performance under Rated Conditions

Parameter	Description
Rated Range ***General Corrosion*** ***Local Corrosion (Pitting Factor)*** ***B – Value*** ***Corrosion Monitoring Index***	 0 to 200 Mils/Year 0 to 5 Millimeters/Year 0.001 to 1.000 0 to 100 mV -2000 to +2000
B Value (default)	25.6mV
Accuracy	±0.10% of span
Lightning Surge Arrester (Remote antenna only)	Frequency range: 0 – 3 GHz, 50 Ohms, VSWR = 1:1.3 Max, Insertion Loss = 0.4 dB Connectors Type N Female, Max, Gas Tube Element: 90 V ± 20%, Impulse Breakdown Voltage = 1,000 V ± 20%, Maximum Withstand Current = 5 KA.
CE Conformity	These transmitters are in conformity with the protection requirements of European Council Directives: 89/336/EEC, the EMC Directive and 1999/5/EC, the Telecommunications Directive per EN 300 328 V1.7.1, EN301 893 V1.3.1, EN301 489-17 V1.2.1, EN301 489-1 V1.6.1and EN61326-1 (1st Edition, 2002-02, Industrial Locations). Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements.
Hazardous Location Certifications	See the Model Selection Guide on page 8.

- Performance specifications are based on reference conditions of 25°C (77°F) and 10 to 55% RH.

Physical Specifications

Parameter	Description
Mounting Bracket	Carbon Steel (Zinc-plated) or Stainless Steel angle bracket or Carbon Steel flat bracket available (standard options).
Terminal Assembly wiring gauge range	28 to 14 AWG
Electronic Housing	Epoxy-Polyester hybrid paint. Low Copper-Aluminum. Meets NEMA 4X (hosedown and corrosion resistant), IP 66/67 (hosedown and submersible to 1m)
Process Connection	See probe specifications
Electrical Connection	¾" NPT
Mounting	Can be mounted in virtually any position using the standard mounting bracket. Mounting should result in the antenna being vertically oriented. Bracket is designed to mount on 2-inch (50 mm) vertical or horizontal pipe. See Figure 3.
Probe Mounting	Probe mounts direct on process pipe, transmitter remote mounted to probe.
Dimensions	See Figure 4.
Net Weight	Approximately 6 pounds (2.7 Kg)

Process Conditions

Parameter	Description
Process Temperature (Max.)	Up to 500°F (260°C). See probe specification.
Process Pressure (Max.)	Up to 3000 psi. See probe specification.

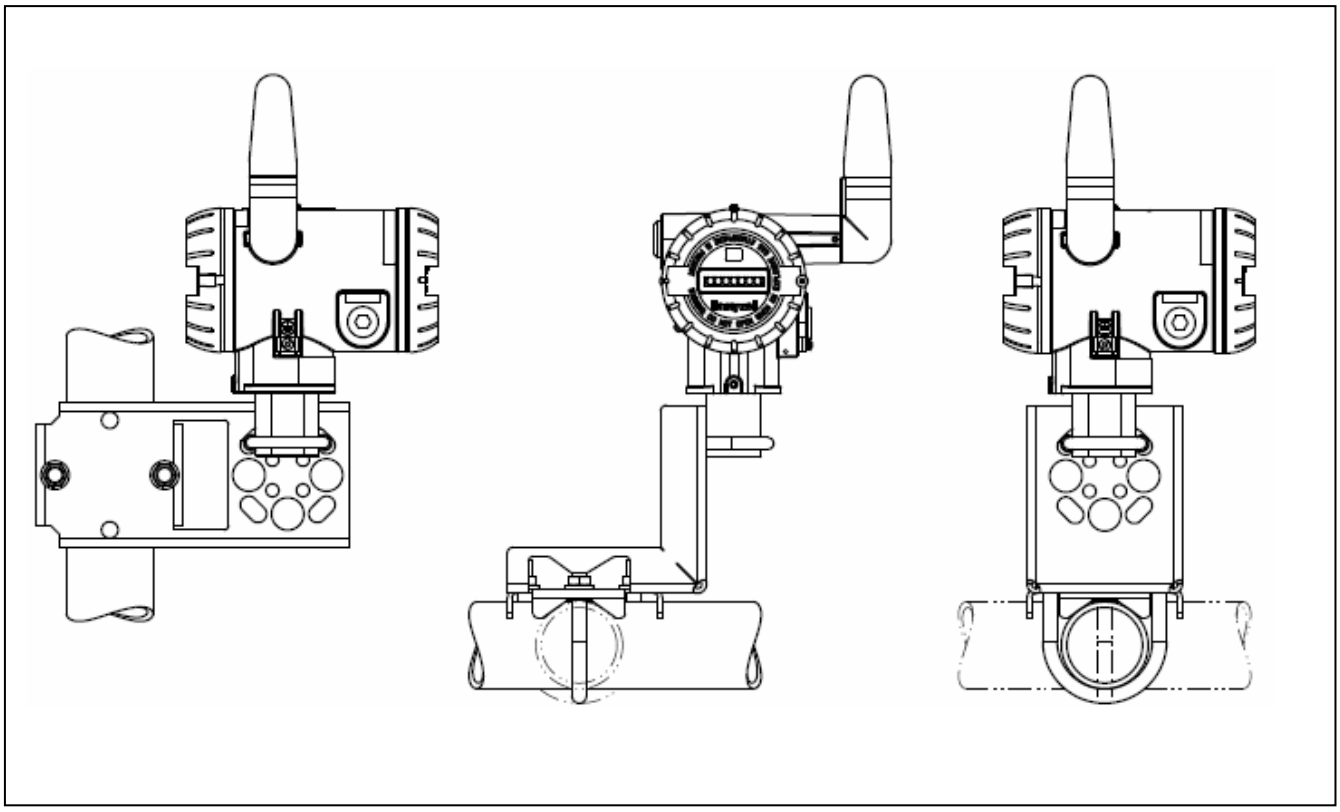


Figure 2—Examples of typical mounting positions

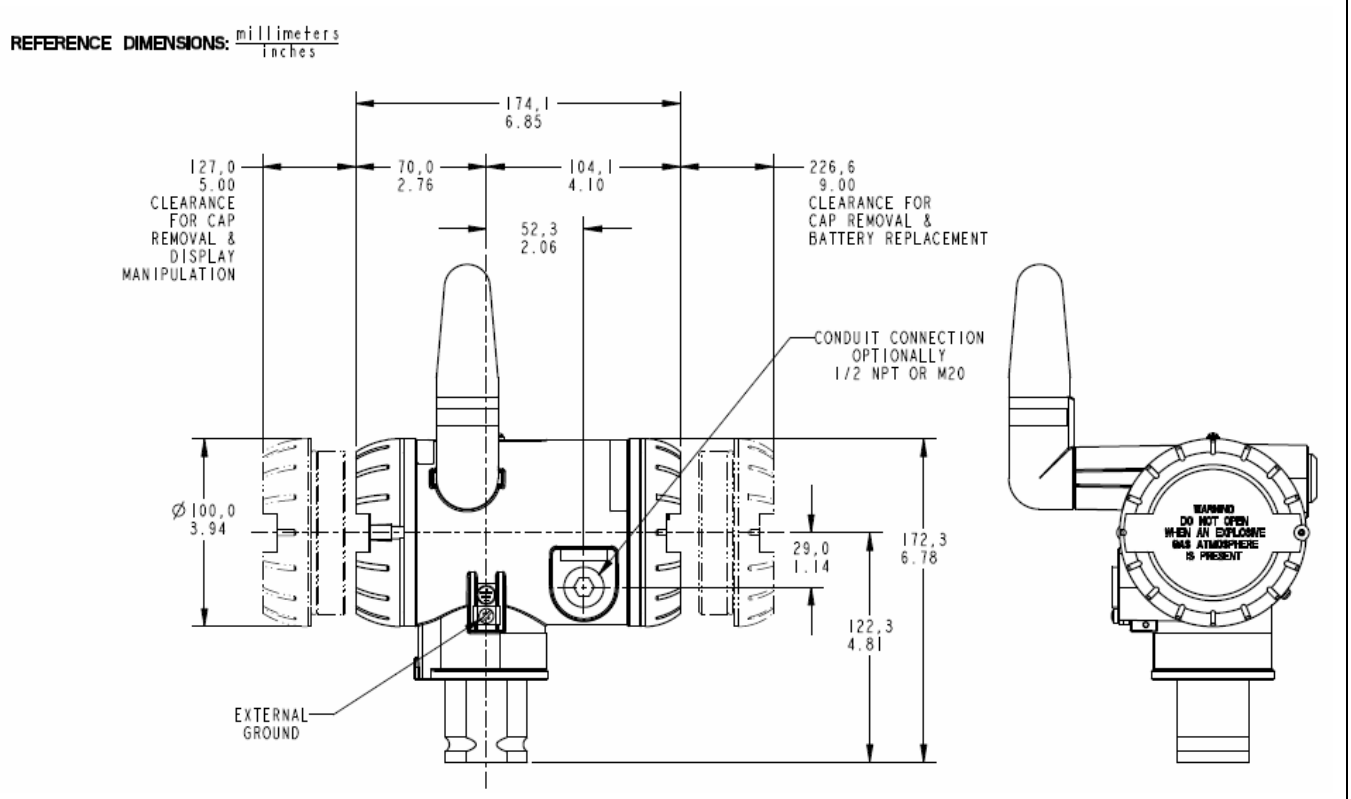


Figure 3—Typical mounting dimensions for reference.

Options

Mounting Bracket
The angle mounting bracket is available in either zinc-plated carbon steel or stainless steel and is suitable for horizontal or vertical mounting on a two inch (50 millimeter) pipe, as well as wall mounting. An optional flat mounting bracket is also available in carbon steel for two inch (50 millimeter) pipe mounting.

Tagging (Option TG)
Up to 30 characters can be added on the stainless steel nameplate mounted on the transmitter's electronics housing at no extra cost. A stainless steel wired on tag with additional data of up to 4 lines of 28 characters is also available. The number of characters for tagging includes spaces.

Transmitter Configuration
All configurable parameters are accessible via the WNSIA network via READ/WRITE transactions.

Specifications are subject to change without notice.

Ordering Information

Contact your nearest Honeywell sales office, or

In the U.S.:
Honeywell
Industrial Automation & Control
16404 North Black Canyon Hwy.
Phoenix, AZ 85053
1-800-288-7491

In Canada:
The Honeywell Centre
155 Gordon Baker Rd.
North York, Ontario M2H 3N7
1-800-461-0013

In Latin America:
Honeywell Inc.
480 Sawgrass Corporate Parkway,
Suite 200
Sunrise, FL 33325
(954) 845-2600

In Europe and Africa:
Honeywell S. A.
Avenue du Bourget 1
1140 Brussels, Belgium

In Eastern Europe:
Honeywell Praha,
s.r.o. Budejovicka 1
140 21 Prague 4,
Czech Republic

In the Middle East:
Honeywell Middle East Ltd.
Khalifa Street,
Sheikh Faisal Building
Abu Dhabi, U. A. E.

In Asia:
Honeywell Asia Pacific Inc.
Honeywell Building,
17 Changi Business Park Central 1
Singapore 486073
Republic of Singapore

In the Pacific:
Honeywell Pty Ltd.
5 Thomas Holt Drive
North Ryde NSW Australia 2113
(61 2) 9353 7000

In Japan:
Honeywell K.K.
14-6 Shibaura 1-chrome
Minato-ku, Tokyo, Japan 105-0023

Or, visit Honeywell on the World Wide Web at: **http://www.honeywell.com**

Model Selection Guide (34-XY-16-48)

Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each table, I and II, using the column below the proper arrow.
- A (•) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions are listed in Restrictions Table.

Key Number	I	II	III	IV	V
_ _ _ _ _ _ _ _ _	_ _ _	0 0 0 0 0	_ _ _ _	_ _ , _ _ , _ _	X X X X

KEY NUMBER		Selection	Availability
SmartCET Wireless Transmitter **Note 1**		CETW6000M	↓
TABLE I - Options			
No selection		0	•
TABLE II			
No Selection		00000	•
TABLE III - ANTENNA OPTIONS			
Antennas	Integral Right-angle, vertical (Standard)	V _ _ _ _	d
	Integral Straight, horizontal	S _ _ _ _	d
	Remote Omnidirectional, 8 dBi	M _ _ _ _	e
	Remote Directional, 14 dBi	D _ _ _ _	e
Cable A for Remote Antenna	None	_ 0 0 _ _	•
	1.0m remote Cable A, TNC-R - N (Req'd to connect to XYR 6000	_ 0 1 _ _	•
	3.0m remote Cable A, TNC-R - N (Req'd to connect to XYR 6000	_ 0 3 _ _	•
	10.0m remote Cable A, TNC-R - N (Req'd to connect to XYR 6000	_ 1 0 _ _	•
Lightning Protectio for remote Antenna With Cable B	None	_ _ _ 0 0	•
	Lightning Protection + 1.0m Cable B to Antenna, N - N	_ _ _ 0 1	•
	Lightning Protection + 3.0m Cable B to Antenna, N - N	_ _ _ 0 3	•
	Lightning Protection + 10.0m Cable B to Antenna, N - N	_ _ _ 1 0	•

Note:

1. For sensors and probes see Model Selection Guide

TABLE IV - Options	Selection	Availability	
None	00	•	
Transmitter Housing & Electronics Options			
Custom Calibration and I.D. in Memory	CC		
Transmitter Configuration and ID in Memory	TC	•	
M20 Conduit Thread (1/2" NPT is standard)	A1	•	b
1/2" NPT to 3/4" NPT 316 SS Conduit Adapter	A2	•	b
Stainless Steel Customer Wired-On Tag	TG	•	
(4 lines, 28 characters per line, customer supplied information)			b
Stainless Steel Customer Wired-On Tag (blank)	TB	•	
End Cap Warning Label in Spanish	SP	•	
End Cap Warning Label in Portuguese	PG	•	b
End Cap Warning Label in Italian	TL	•	
End Cap Warning Label in German	GE	•	
Transmitter Mounting Bracket Options		•	
Mounting Bracket - Carbon Steel	MB	•	
Mounting Bracket - 304 SS	SB	•	b
Flat Mounting Bracket - Carbon Steel	FB	•	
Services/Calibration/Conformance Options			
User's Manual Paper Copy	UM	•	
Calibration Test Report and Certificate of Conformance (F3399)	F1	•	b
Certificate of Conformance (F3391)	F3	•	b
Certificate Options			
Certificate of Origin (F0195)	F5	•	
Warranty Options			
Additional Warranty - 1 year	W1	•	
Additional Warranty - 2 years	W2	•	b

Approval Body	Approval Type	Location or Classification	Selection		
No hazardous location approvals			9X	•	
CSA cus	Nonincendive	Nonincendive, CL I, Div 2, Groups A,B,C & D, CL II & III, Div 2, Groups F & G, T4 Ta = 85°C	2N	•	b
	Non-Sparking	Class I, Ex/AEx nC IIC; T4, Ta ≤ 85°C, Zone 2; IP 66/67			
ATEX	Non-Sparking	**Ex II 3 GD**; Ex nL IIC; T4, Ta ≤ 85°C, Zone 2; IP 66/67	3N	•	

WARNING – Division 2 / Zone 2 apparatus may only be connected to processes classified as non-hazardous or Division 2 / Zone 2. Connection to hazardous (flammable or ignition capable) Division 1 / Zone 0, or 1 process is not permitted.

TABLE V

Factory Identification		XXXX	•	

RESTRICTIONS

Restriction Letters	Available Only With		Not Available With	
	Table	Selection	Table	Selection
a	Approvals Pending			
b	Select only one option from this group			
d	III	_ 00 _ _, _ _ _ 00		
e			III	_ 00 _ _

Supplemental Accessories and Kits

Description	Part Number
Remote Probe Cable for Wireless transmitter – 6 Ft	50021078-001
Remote Probe Cable for Wireless transmitter – 12 Ft	50021078-002

** Consult Honeywell Order Entry Systems for current parts pricing.

Honeywell Field Solutions
Honeywell International Inc.
2500 W. Union Hill Drive
Phoenix, Arizona 85027