

XYR 5000 Wireless Analog Input Transmitters

WI550

34-XY-01-04 12/2004

PRODUCT SPECIFICATION AND MODEL SELECTION GUIDE

Function

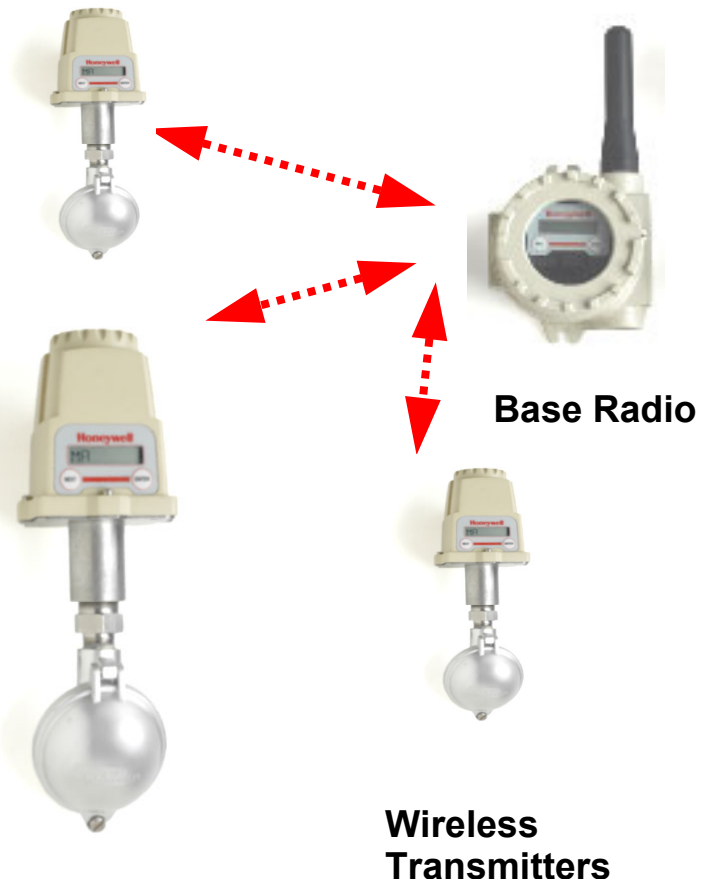
The WI550 Analog Input Field Transmitter is part of the XYR 5000 family of wireless products. It is used to add wireless capabilities to new or existing analog transmitters, such as pressure, temperature, level, flow meters, pH meters, or any device that has voltage (0 – 10 V) or current (4 – 20 mA) outputs. The Smart Response Manager allows the transmitter to adapt to changing process conditions, allowing greater visibility to process variation. Smart Response Manager allows the user to set thresholds which, when exceeded, cause the transmitter to adjust sampling and data transmission rates. Optional discrete inputs and outputs switches are available for

- Monitoring process variables
- Activating local devices (lights, alarms, etc.)
- Discrete monitoring at the base radio.

The transmitter combines a high resolution signal conditioner, with a Radio Frequency (RF) transceiver that communicates in a digital protocol, using Frequency Hopping Spread Spectrum (FHSS). FHSS ensures data integrity by continually switching the carrier wave over a wide range of frequencies. Power is supplied by a C size 3.6 V lithium battery, with an expected lifetime of up to five years.

Enjoy the benefits of wireless technology today:

- Improve Product Quality
- Ensure High Uptime
- Reduce Maintenance and Operational Costs
- Meet Regulatory Requirements
- Enhance Flexibility



Multi-Input

Model #	INPUTS	INPUT CHARACTERISTICS
WI551	Two 4 – 20 mA inputs	10 ohms
WI552	Two 0 – 10 volt inputs	100 k ohms

WIRELESS GENERAL SPECIFICATIONS

Wireless Communication	902 MHz – 928 MHz Frequency Hopping Spread Spectrum (FHSS) FCC certified ISM license-free band. Every data block transmitted is verified (CRC check) and acknowledged by the Base Radio.
RF Transmit Power	31 mW, 17.8 mW typical.
Data Rate	Configurable: 4.8 Kbps, 19.2 Kbps, or 76.8 Kbps.
Antenna	Internal 3" omni-directional, ¼ wave, monopole.
Signal Range	Up to 2000 feet (600 meters) from Base Radio with clear line of sight.*

*Actual range may vary depending on site topography.

PERFORMANCE

Accuracy (linearity and hysteresis)	±0.1% of full scale reading at Reference Conditions (24 • C, 75 • F).
Ambient Temperature Effect	±0.01% of reading per • C.
Resolution	24-bit A/D converter.

DISCRETE INPUT/OUTPUT SWITCHES (TWO EACH, OPTIONAL)

Discrete Input Switch (Dry Contact Only, no Voltage or Current Allowed)

Maximum Impedance at Input	1 K ohm.
Isolation	110 K ohms between Output (-) and Input (-).
Wiring	Plug – Wire Size 28 to 16 gauge maximum.
Warning	No external voltage or current shall be applied to input terminals.

Discrete Output Switch

Type	Avalanche MOSFET, Common (-) Connection.
Isolation	110 K ohms between Output (-) and Input (-).
Operating Voltage	6 – 30 Vdc.
On Resistance	9 m-ohms typical, 15 m-ohms maximum.
Maximum Load Current	1 amp dc per point.
Wiring	Plug – Wire Size 28 to 16 gauge maximum.
Approval	Discrete Output Switches negate hazardous area approvals.

DEVICE CONFIGURATION

Parameter Configuration	<ul style="list-style-type: none"> • RF Channel Setup: 1 to 16. • Baud Rate: 4.8 Kbps, 19.2 Kbps, 76.8 Kbps. • RF ID: 1 to 50. • Password . • Tag Name (up to 21 characters). • Normal Transmit Rate: (1–5 sec, 10 sec, 15 sec, 20 sec, 40 sec, 1 min). • Normal Sampling Rate: (1–10 sec, 15 sec, 20 sec, 30 sec, 1 min). • Abnormal Transmit Rate: (1–5 sec, 10 sec, 15 sec, 20 sec, 40 sec, 1 min). • Abnormal Sampling Rate: (1–10 sec, 15 sec, 20 sec, 30 sec). • Analog Input Normal Upper Value: Disabled/Enabled. Enabled to change Sampling and Transmit rates during abnormal process conditions. • Analog Input Normal Lower Value: Disabled/Enabled. Enabled to change Sampling and Transmit rates during abnormal process conditions. • Engineering Units: Current model (mA/A); Voltage model (V/mV). • Offset: User defined offset will be transmitted instead of actual value. • Trim: Applies a user-defined one- or two-point correction curve to the actual value. • Discrete Input/Output parameters are configured from the Wireless Management Toolkit
Configuration Panel	<p>Integrated LCD display with membrane switch buttons for local configuration.</p> <p>LCD display is 7-digit (alternating) high contrast, anti-reflective monochrome.</p> <p>Display cycles between input 1, input 2, and RF status.</p>

SELF DIAGNOSTICS

Self-checking software and hardware that identifies and reports out of spec conditions, and field unit low battery voltage.

OPERATING/STORAGE CONDITIONS

Humidity	99% RH (non-condensing).
Temperature	Ambient Electronics: -40 to +185• F (-40 to +85• C) Display (Full visibility): -4 to +158• F (-20 to +70• C) Display (Reduced visibility): -40 to +185• F (-40 to +85• C) Storage: -58 to +185• F (-50 to +85• C).

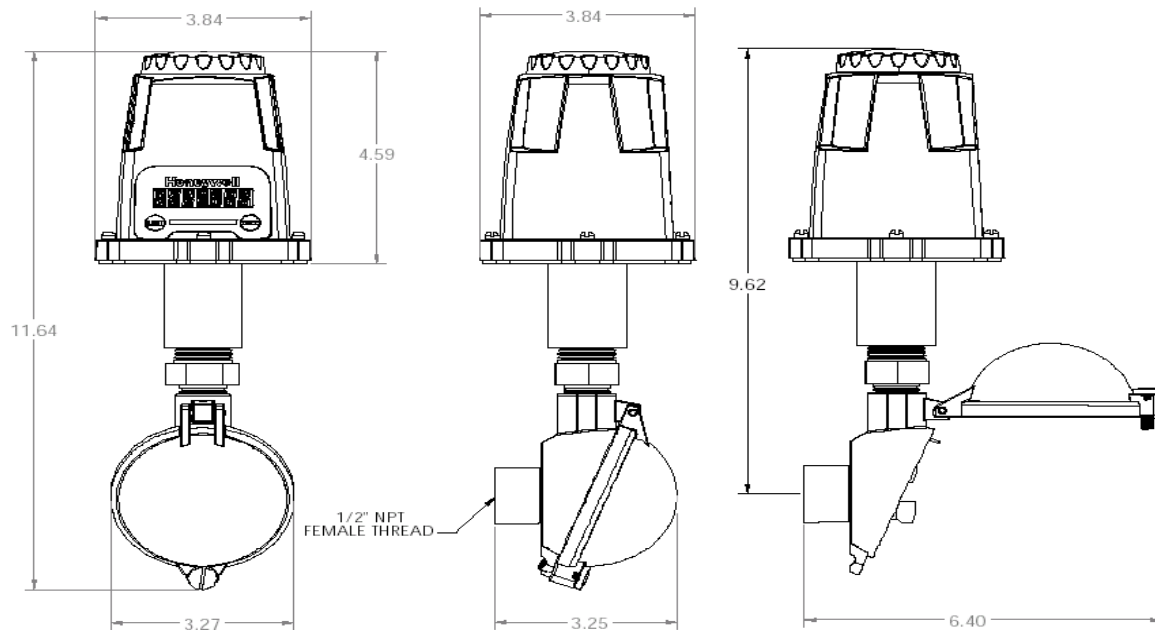
PHYSICAL SPECIFICATIONS

Base	Aluminum junction box.
Electronic Housing	GE Lexan. V0 Rating and UV Stable.
Vibration and Shock	Certified per IEC EN00068 2-6 (Vibration) and 2-27 (Shock)
Random Vibration	Certified to withstand 6 g's, 15 minutes per axis from 9 – 500 Hz.
Net weight	0.6 kg (1.2 lbs).
Electromagnetic Compatibility (CE Compliance)	Operates within Specifications in fields from 80 to 1,000 MHz with Field Strengths to 30 V/m. Meets EN 50082-1 General Immunity Standard and EN 55011 Compatibility Emissions Standard.

APPROVALS

Environmental protection	NEMA 4.
Electrical classification	CSA and FM Rated Intrinsically Safe for Class I, Div. 1, Groups A,B,C,D; Class II, Div. 1, Groups E,F,G; Class III, Div. 1.

DIMENSIONS



Model Selection Guide

XYR 5000 Wireless Dual Analog Input Interface

Model Selection Guide
34-XY-16U-04 Issue 1

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Instructions

- Select the desired key number.

Key Number	I (Options)	II (Approvals)
_ _ _ _	_ _	_ _

KEY NUMBER	Selection Availability
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Description	Selection Availability
Wireless Dual Analog Input Interface (4 - 20 mA)	WI551 ↓
Wireless Dual Analog Input Interface (0 - 10 V)	WI552 ↓

TABLE I - OPTIONS

No Digital input/output switches	XX	•
Digital input switches (Note 1)	DA	•
Digital output switches	DB	c
Digital input/output switches	DC	c

Note 1 - no voltage or current allowed; dry contact only

TABLE II - CERTIFICATION OPTIONS

Certificate	Approval Type	Location or Classification	Code
NONE	NONE	Ordinary Non-Hazardous Location	9X •
Combined FM	Intrinsically Safe	CL I, II, III, Div 1, Gp A,B,C,D,E,F,G T4; CL I, Zone 0, AEx ia IIC T4; Enclosure Type 4	A2 •
	Nonincendive	Class I, Div 2, Groups A,B,C,D; Suitable for CL II, III, Div 2, Gp F,G, T4; CL I, Zone 2, AEx nA IIC T4; Enclosure Type 4	
CSA	Intrinsically Safe	CL I, II, III, Div 1, Gp A,B,C,D,E,F,G T4; CL I, Zone 0, Ex ia IIC T4; Enclosure Type 4	
	Nonincendive	Class I, Div 2, Groups A,B,C,D; Suitable for CL II, III, Div 2, Gp F,G, T4; CL I, Zone 2, Ex n IIC T4; Enclosure Type 4	b

RESTRICTIONS

Restriction Letter	Available Only With	Not Available With
c	Table Selection	Table Selection
_	II a	9X
mutually exclusive - select one		

