

OneWireless
XYR 6000 HLAI Transmitter
User's Manual

34-XY-25-17
R100
6/7/07

Release 100

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About This Document

This document describes preparation, operation and maintenance of the XYR 6000 Wireless HLAI Transmitters. Mounting, installation and wiring are covered in other documents.

Honeywell does not recommend using devices for critical control where there is a single point of failure or where single points of failure result in unsafe conditions. The initial release of OneWireless (R100) is targeted at open loop control, supervisory control, and controls that do not have environmental or safety consequences. As with any process control solution, the end-user must weigh the risks and benefits to determine if the products used are the right match for the application based on security, safety, and performance. Additionally, it is up to the end-user to ensure that the control strategy sheds to a safe operating condition if any crucial segment of the control solution fails.

Release Information

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References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

Document Title

XYR 6000 Transmitters Quick Start Guide
Getting Started with Honeywell OneWireless Solutions
OneWireless Wireless Builder User's Guide
OneWireless Builder Parameter Reference

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Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user, often in terms of performing a task.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.
	CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. CAUTION symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. WARNING symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING, Risk of electrical shock: Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.
	ESD HAZARD: Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	Protective Earth (PE) terminal: Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	Functional earth terminal: Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
	Earth Ground: Functional earth connection. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	Chassis Ground: Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

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1. Introduction

1.1 Purpose

This manual describes the Honeywell OneWireless XYR 6000 HLAI Transmitter function, operation and maintenance.

1.2 Scope

The manual includes:

- Details of topics that relate uniquely to the Honeywell XYR 6000 HLAI Transmitter,
- This manual does not cover installation, mounting, or wiring. See XYR 6000 Transmitter Quick Start Guide (document 34-XY-25-15).

1.3 OneWireless network overview

OneWireless is an all digital, serial, two-way communication mesh network that interconnects industrial field sensors to a central system.

OneWireless has defined standards to which field devices and operator stations communicate with one another. The communications protocol is built as an "open system" to allow all field devices and equipment that are built to OneWireless standard to be integrated into a system, regardless of the device manufacturer. This interoperability of devices using OneWireless technology is to become an industry standard for automation systems.

1.4 About the transmitter

The XYR 6000 HLAI Transmitter is furnished with OneWireless interface to operate in a compatible distributed OneWireless system. The transmitter will interoperate with any OneWireless-registered device.

The transmitter includes OneWireless electronics for operating in a 2.4GHz network. It features function block architecture.

Input

The transmitter supports one input channel. The channel is configurable as follows.

- Voltage (0-5V) & (1-5V)
- Current (0-20mA) & (4-20mA)

The transmitter measures analog signal and transmits a digital output signal proportional to the measured value. Figure 1 shows the functional diagram.

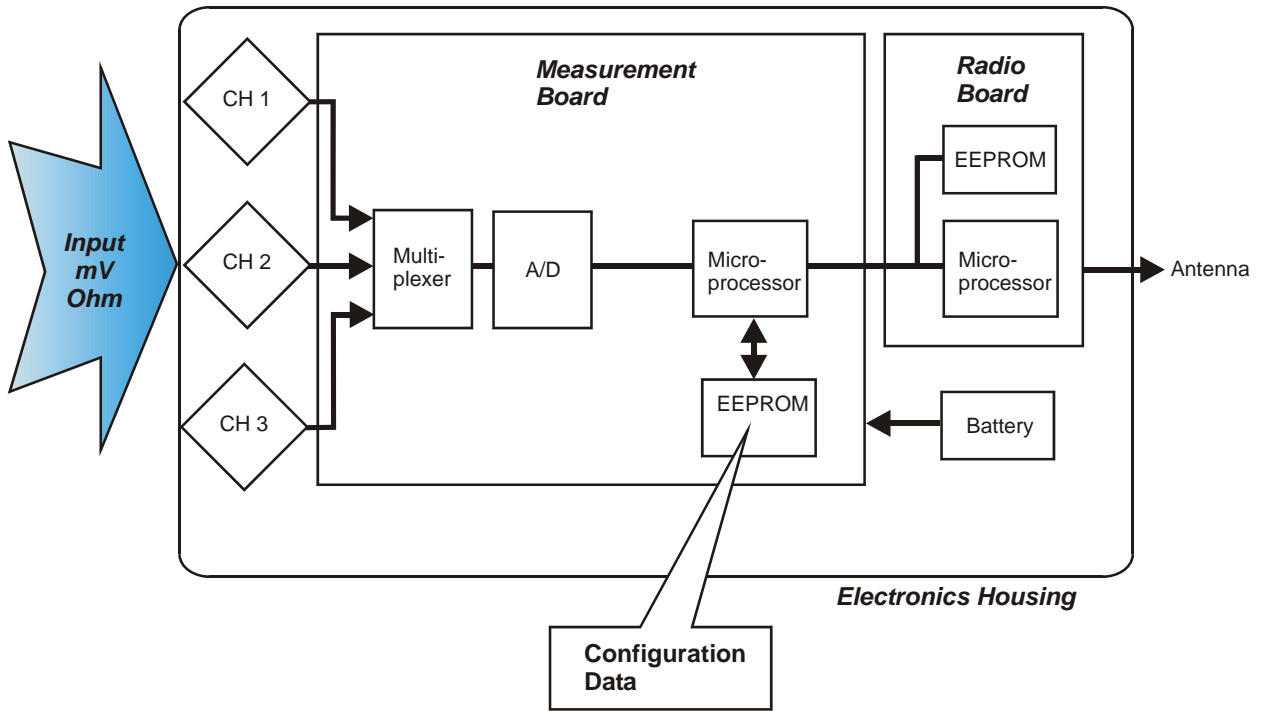



Figure 1 XYR 6000 Functional Diagram

2. Specifications

2.1 Certifications and approvals

Transmitter

Approval / Item	Ratings / Description
Nonincendive	Nonincendive, CL I, Div 2, Groups A,B,C & D, CL II & III, Div 2, Groups F & G, T4 Ta = 85°C
Non-Sparking	CL I, Ex/AEx nC IIC T4; Ta = 85°C, Zone 2 Ex II 3 GD, EEx nA IIC T4; Ta = 85°C, Zone 2
Process Connections	 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.
Enclosure Type	Type 4X, IP 66/67

For detailed transmitter specifications see the following Specification and Model Selection Guides.

- XYR 6000 Wireless Transmitter HLAI (document 34-XY-03-30)

Authentication Device

Install the Authentication Device application on any PDA having

- Windows Mobile version 4.2+
- infrared port.

3. Preparation

3.1 Installation

Refer to the XYR 6000 Transmitter Quick Start Guide (document 34-XY-25-21) for installation, mounting and wiring of your XYR 6000 transmitter.

3.2 Configuration

The XYR 6000 Transmitter contains the electronics interface compatible for connecting to the OneWireless network. An operator uses the Wireless Builder application to configure blocks, to change operating parameters, and to create linkages between blocks that make up the transmitter's configuration. These changes are written to the transmitter when it is authenticated by a security key.

3.3 Connecting to network

Use Authentication Device to connect your transmitter to the OneWireless network. See page 17.

3.4 Calibrating the transmitter

Methods

The following calibration methods are available through the transmitter menu.

- User Calibration - Calibrates the channel to the low and high range values for selected input type.
- Restore Calibration - constants for the channel 1 are restored to factory defaults.
- Clear Calibration - FACTORY or USER Calibration constants for the channel can be cleared.

Wireless Builder

Wireless Builder must be used to unlock and take the channel to be calibrated out of service. Calibration Point High (CAL_PT_HI), Calibration Point Low (CAL_PT_LO) & Cal Unit (CAL_UNIT) can be set from Wireless Builder.

PV value is scaled to Engineering Units. For example, for 1-5V input type if EU 0 = 0 and EU 100 = 100 then Input (1-5V) will be scaled to 0 to 100.

Calibration points CAL_LO and CAL_HI are considered in terms of engineering units. For example,

- If channel is to be calibrated for (1-3V) with above settings then set CAL_PT_LO to 0 and CAL_PT_HI to 50.
- If channel is to be calibrated for (1-4V) with above settings then set CAL_PT_LO to 0 and CAL_PT_HI to 75. Calibration unit has no significance.

Table 1 User calibration

Step	Action
1	In Wireless Builder, set transmitter's Write Lock to Unlocked.
2	In Wireless Builder, set the transmitter's channel to OOS (Out of Service).
3	Loosen the M3 locking set screw on the transmitter's battery end-cap (opposite end from display). Unscrew and remove the end cap.
4	See Figure 2 for terminal connections. If your process input is connected to the channel, disconnect it first, then connect a calibrator source to the channel's terminals. It is not necessary to disconnect any jumper wires on the terminals.
5	Select USER CAL by scrolling through menu. Follow displayed instructions. <ul style="list-style-type: none"> Using your calibration source, apply the low calibration value indicated on display. Press Enter to accept the value. Display will say BUSY, then CAL LO COMPLETE. Press Enter to continue. Apply the high calibration input value indicated on display. Press Enter to accept the value. Display will say BUSY, then SUCCESS. If calibration is unsuccessful at any of steps mentioned above an error message is displayed. See Table 2. Press Enter to return to PV display.
6	Exit the menu.
7	Reverse steps 3 and 4.
8	When ready, in Wireless Builder return the transmitter's channel to service and set Write Lock to Locked.

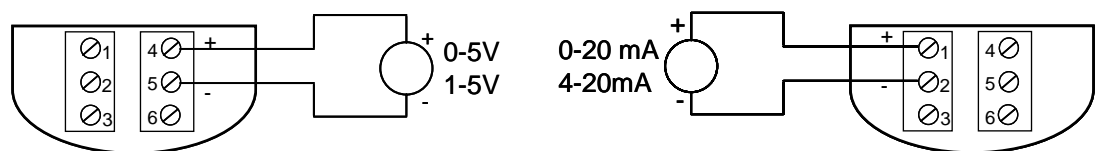


Figure 2 Calibration wiring: voltage (left), current (right)

3. Preparation

3.4. Calibrating the transmitter

Table 2 Calibration error messages

Message	Meaning
CALIBRATION_FAIL	1. Calibration gain is greater than 5%. 2. Calibration offset is greater than 5% of sensor span. (TC span is in mV. RTD span is in Ohms.)
BAD TRIM POINT	CAL_POINT_HI is greater than sensor high range value OR CAL_POINT_LO is less than greater than sensor low range value.
BAD_USER_CALIBRATION	CAL_SOURCE is user and user calibration constants contain invalid values.
BAD_FACTORY_CALIBRATION	1. CAL_SOURCE is factory and factory calibration constants do not contain valid values. 2. CAL_RESTORE command was issued but factory calibration constants do not contain valid values.
BAD_SENSOR	Sensor is bad or faulty input thermocouple.
BAD UNITS	Units in CAL UNITS parameter are invalid or not supported by the sensor type.
INTERNAL ERROR	An error occurred during calibration that prevents calibration from being completed successfully.
SUCCESS WITH EXCESS	The calibration succeeded but the calculated calibration values are greater than 5 percent beyond the normal calibration values. Typically this indicates that the applied calibration value was significantly different from the expected value or that the sensor is not within expected tolerances for the applied characterization.

Table 3 Restore calibration

Step	Action
1	In Wireless Builder, set transmitter's Write Lock to Unlocked.
2	In Wireless Builder, set the transmitter's channel to OOS (Out of Service).
3	Use Authentication Device's Device Local Configuration buttons to navigate to the transmitter's CAL menu. If the transmitter is locked a LOCKED message will be displayed. Go to step 1. If CAL menu is passcode protected, enter the passcode. If the channel is not out of service a WRONG MODE message will be displayed. Go to step 2.
4	<ul style="list-style-type: none"> • Select CAL RSTR by scrolling through menu. • Press Enter to continue. • Display will say BUSY, then SUCCESS. • If calibration is unsuccessful an error message is displayed. See Table 2. • Press Enter to return to PV display.
5	Exit the menu.
6	When ready, in Wireless Builder return the transmitter's channel to service and set Write Lock to Locked.

Table 4 Clear calibration

Step	Action
1	In Wireless Builder, set transmitter's Write Lock to Unlocked.
2	In Wireless Builder, set the transmitter's channel to OOS (Out of Service).
3	Use Authentication Device's Device Local Configuration buttons to navigate to the transmitter's CAL menu. If the transmitter is locked a LOCKED message will be displayed. Go to step 1. If CAL menu is passcode protected, enter the passcode. If the channel is not out of service a WRONG MODE message will be displayed. Go to step 2.
4	<ul style="list-style-type: none"> • Select CAL CLR by scrolling through menu. • Press Enter to continue. • Display will say BUSY, then SUCCESS.
5	Exit the menu.

4. Function blocks

4.1 Introduction

This section explains the construction and contents of the XYR 6000 HLAI Transmitter Function Blocks.

4.2 Block description

Block types

Blocks are the key elements that make up the transmitter’s configuration. The blocks contain data (block objects and parameters) which define the application, such as the inputs and outputs, signal processing and connections to other applications. The XYR 6000 Transmitter contains the following block types.

Block Type	Function
Device	Contains parameters related to the overall field device rather than a specific input or output channel within it. A field device has exactly one device block.
AITB	Contains parameters related to a specific process input or output channel in a measurement or actuation device. An AITB defines a measurement sensor channel for an analog process variable represented by a floating-point value. There is one AITB per sensor.
Radio	Contains parameters related to radio communication between the transmitter and the multimode(s).

Block diagram

Figure 3 shows the blocks of the XYR 6000 Transmitter.

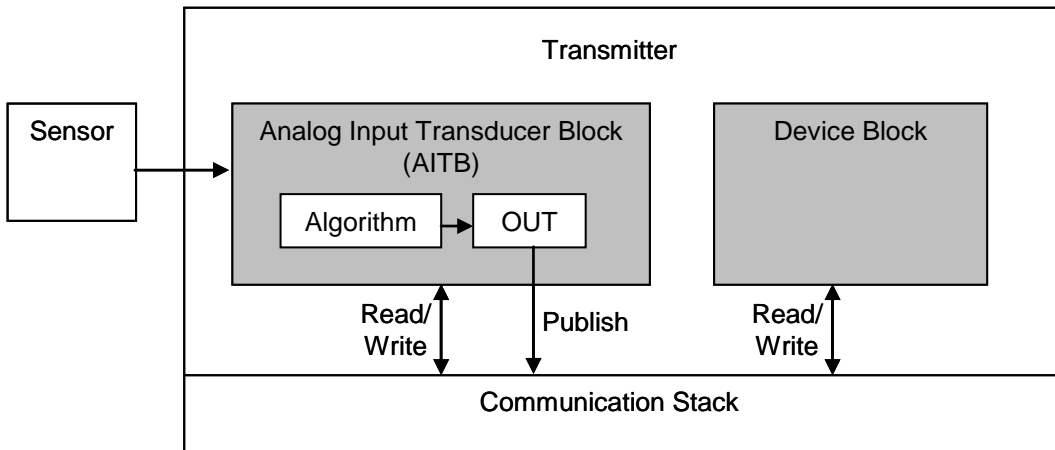


Figure 3 Block Diagram

Each of these blocks contains parameters that are standard WNSIA-transmitter defined parameters. The AITB and device blocks contain standard parameters common to all XYR 6000 transmitter models (that is, pressure, temperature, corrosion, HLAI) as well as HLAI-specific parameters. The radio block contains parameters for communication with the wireless network.

4.3 Parameter details

The transmitter itself displays a few basic parameters, such as tag, serial number, device revision, build, device address, WF ID.

For more information on parameters, refer to the following documents.

- OneWireless Wireless Builder User's Guide
- OneWireless Builder Parameter Reference

5. Operation

5.1 Overview

Display modes

The transmitter has the following display modes.

- Test. Appears briefly after power-up to self-test the display.
- PV display. Default mode of the transmitter displays the PV and any status messages. See below.
- Quick view of parameters. Displays read-only parameters then returns to PV display. See page 14.
- Menu. Displays the menu. See page 15.

Authentication Device

To navigate the transmitter displays and menus, hold the Authentication Device no more than 6" from the transmitter and aim the infrared beam at the transmitter display while tapping the Device Local Configuration buttons (Table 9).

5.2 Transmitter PV display

In PV display, the following information is displayed in sequence.

Item displayed	Example	Details
Channel number	1	Channel number.
PV value	50.0	Latest PV value.
PV engineering units	mV	See Table 5.
PV status	BAD	See Table 6. If PV status is not displayed then the PV value is good.
Device status	LOW BATT	See Table 7. If device status is not displayed then the device status is normal. If two or more device status messages are in effect they are displayed alternating with the PV.

Table 5 PV engineering units

Engineering units	Description
Deg C	degree Celsius
Deg F	degree Fahrenheit
Rev	revolution
L	liter
Gal	US gallon

Engineering units	Description
RPM	Revolutions Per Mi
Pa	Pascal
Psi	Pounds per squa
Psia	Pounds per square inch absolute
Psig	Pounds per square inch gauge
inH2O	Inches of Water
inH2O (4 deg C)	Inches of Water at 4 deg C
mmHg	millimeters of mercury
mmHg (0 deg C)	millimeters of mercury at 0 deg C
mA	Milliampere
V	Volt
%	Percent
L/min	liters per minute
GPM	US gallons per minute
pH	pH
	no units

Table 6 PV status

PV status	Cause - Action
(blank)	<ul style="list-style-type: none"> PV is normal – no action required
BAD	<ul style="list-style-type: none"> Possible calibration error – Clear calibration AITB can not execute due to internal firmware state – Attempt cold restart of device. AITB can not execute due to hardware fault – Replace sensor board Sensor failure – Check Connection between Sensor board and Meter Body. Meter Body Characterization Data is Bad – Replace Meter Body Meter Body A/D Failure – Replace Meter Body Meter Body Sensor Fail – Replace Meter Body
BAD CONFIG	<ul style="list-style-type: none"> Configuration is bad – Check possible units and range settings for input type and correct AITB configuration.
BAD E FAIL	<ul style="list-style-type: none"> Hardware fault detected - Replace sensor board
OUTSVC	<ul style="list-style-type: none"> AITB mode is out of service – Restore mode to Auto in Wireless Builder
UNC	<ul style="list-style-type: none"> Warning: Input inaccurate due to uncertain input data integrity. Warning: Input inaccurate due to input conversion limitations or resolution. Warning: Input outside of characterized range. Value is estimated.

Table 7 Device status

Status	Root Status Bit	Definition	What to do
E FAIL	DEV_ST_ELEC_FAIL	Electrical Failure detected on Sensor Board. Could be caused by one of the status items marked by *.	Replace sensor board
IP ERR	DEV_ST_INPUT_FAIL	Input Error	Possible meter body sensor failure.
LOW BAT	DEV_ST_LOW_BAT	Batter Voltage Critically Low	Replace batteries as soon as possible.
CFG ERR	DEV_ST_CONF_ERR	Configuration Check Error.	Database is corrupted. Cold start and reload configuration.
CAL ERR	DEV_ST_CAL_ERR	Calibration Data Invalid or could not be read.	Use Cal Clear, Restore, or User Calibrate.
NO RADIO	DEV_ST_RADIO_ERR	Radio Board is not accessible.	Check radio board installed. Replace radio board.

Status	Root Status Bit	Definition	What to do
HEAP ERR*	DEV_ST_HEAP_ERR	Heap Allocation Failure. Software detected heap shortage and some communication packets may have been dropped.	Clear by warm restart of device. If condition persists contact Honeywell service.
FW ERR*	DEV_ST_DEV_FW_ERR	Sensor Board Firmware Error. The software did not pass verification tests.	Contact Honeywell service for replacement module.
WDT ERR*	DEV_ST_WDT_ERR	Sensor Watch Dog Timeout. The processor was restarted due to unexpected operation.	Clear by warm restart of device. If condition persists contact Honeywell service.
ROM ERR*	DEV_ST_ROM_FAULT	Startup diagnostics detected defect in Sensor Read Only Memory	Replace sensor module.
RAM ERR*	DEV_ST_RAM_FAULT	Startup diagnostics detected defect in Processor Random Access Memory	Replace sensor module.
NVM ERR*	DEV_ST_NVM_FAULT	Startup diagnostics detected defect in Sensor Non-Volatile Memory	Replace sensor module.
AD ERR*	DEV_ST_AD_FAULT	Diagnostics detected defect with Analog to Digital Converter.	Replace sensor module.
BAD RADIO SPI	radio diag status Bit 0	Radio detected loss of communication with sensor board over the inter-processor communication link.	The sensor module or radio board is not functioning properly. Reset both the radio and sensor module. If condition persists contact Honeywell service.
BAD RADIO EEPROM	radio diag status Bit 1	Radio EEPROM SPI Communication failure	The radio will not be able to perform firmware upgrades but will operate normally using installed code. Replace radio board.
RADIO WDT RESET	radio diag status Bit 2	Radio Watch Dog Timeout detected	The radio firmware is not operating normally. Restart radio board. If condition persists install new firmware or replace radio module.
BAD RADIO FHSS	radio diag status Bit 3	Radio Frequency Hopping Spread Spectrum Radio circuitry failure	The radio processor detected error on internal radio circuitry. Replace radio board.

5. Operation

5.3. Transmitter quick view of parameters

5.3 Transmitter quick view of parameters

If you press the up or down arrow key during the PV display, the following quick view parameters are shown sequentially, then the PV display resumes.

Parameter	Description
Transmitter type	HONEYWELL XYR 6000 HLAI
Tag	The name given to this transmitter
Serial number	Transmitter serial number
Device revision	This parameter changes whenever objects and parameters are added, deleted, or the data type or range changes. It does not change if the application firmware changes without affecting the device description.
Build	Sensor firmware number

5.4 Transmitter menu

Menu tree

At the PV display, press Enter to access the menus. To interact with the menus use the Device Local Configuration. See page 18.

Table 8 Menu tree

Menu item	Description																																	
CAL	Calibration menu. May be password-protected. See Table 9 on page 18 for password number entry. See page 4 for calibration details.																																	
CAL RESTR	Constants for the channel 1 are restored to factory defaults.																																	
USER CAL	Calibrates the channel to the low and high range values for selected input type.																																	
CAL CLR	FACTORY or USER Calibration constants for the channel can be cleared.																																	
RADIO	Radio menu																																	
PRI RSSI	<p>Primary receive signal strength. Read only. Signal strength 00 is too weak to connect to the network.</p> <table border="1"> <thead> <tr> <th><u>Displayed Value</u></th> <th><u>Value dBm</u></th> <th><u>Rx Margin dB</u></th> </tr> </thead> <tbody> <tr> <td>00</td> <td>< -86</td> <td>< 10</td> </tr> <tr> <td>01</td> <td>-86 to -81</td> <td>10 to 15</td> </tr> <tr> <td>02</td> <td>-80 to -75</td> <td>16 to 21</td> </tr> <tr> <td>03</td> <td>-74 to -69</td> <td>22 to 27</td> </tr> <tr> <td>04</td> <td>-68 to -63</td> <td>28 to 33</td> </tr> <tr> <td>05</td> <td>-62 to -57</td> <td>34 to 39</td> </tr> <tr> <td>06</td> <td>-56 to -51</td> <td>40 to 45</td> </tr> <tr> <td>07</td> <td>-50 to -45</td> <td>46 to 51</td> </tr> <tr> <td>08</td> <td>-44 to -11</td> <td>52 to 85</td> </tr> <tr> <td>09</td> <td>≥ -10</td> <td>Saturation</td> </tr> </tbody> </table>	<u>Displayed Value</u>	<u>Value dBm</u>	<u>Rx Margin dB</u>	00	< -86	< 10	01	-86 to -81	10 to 15	02	-80 to -75	16 to 21	03	-74 to -69	22 to 27	04	-68 to -63	28 to 33	05	-62 to -57	34 to 39	06	-56 to -51	40 to 45	07	-50 to -45	46 to 51	08	-44 to -11	52 to 85	09	≥ -10	Saturation
<u>Displayed Value</u>	<u>Value dBm</u>	<u>Rx Margin dB</u>																																
00	< -86	< 10																																
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02	-80 to -75	16 to 21																																
03	-74 to -69	22 to 27																																
04	-68 to -63	28 to 33																																
05	-62 to -57	34 to 39																																
06	-56 to -51	40 to 45																																
07	-50 to -45	46 to 51																																
08	-44 to -11	52 to 85																																
09	≥ -10	Saturation																																
SEC RSSI	Secondary receive signal strength. Same as PRI RSSI. Read only.																																	
NWK STAT	<p>Network status. Read only.</p> <p>CONNECTED means the transmitter radio and a multinode have detected each other. It does not necessarily mean security has been enabled or that the Wireless Builder has sensed the transmitter.</p> <p>NOT CONNECTED means radio communications with a multinode have not been established, or signal strength is too weak.</p>																																	
WFN ID	Wireless Field Network ID. Read only.																																	
DEV ADD	Device address. Read only.																																	
TX POWER	Radio transmit power. Read only.																																	

5.5 Authentication device menus

Overview

Hold the Authentication Device no more than 6" from the transmitter and aim the infrared beam at the transmitter display while tapping on the screen command or button.

Main menu

The main menu is shown below.

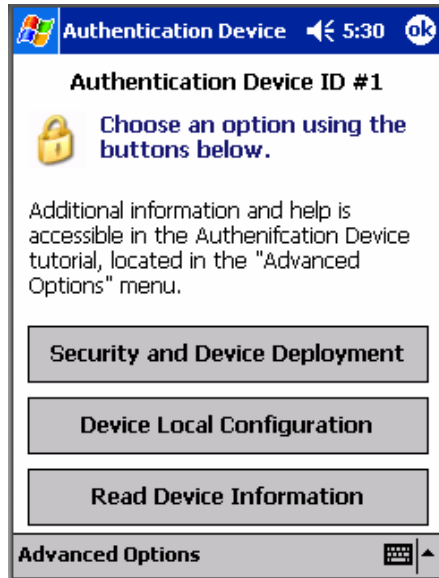


Figure 4 Main menu

Security and Device Deployment

Use this to receive and transmit security keys for connecting the transmitter to the OneWireless network.



Figure 5 Security and Device Deployment

To connect your transmitter to the OneWireless network perform the following steps.

Step	Action
1	If the Authentication Device does not contain any security keys, receive security keys from the PC application Key Server Manager.
2	If the keys in the Authentication Device are not valid or are expired, select Advanced, Clear Keys From Handheld, then repeat step 1 to obtain new keys.
3	When the Authentication Device has valid unexpired keys, aim it at the transmitter and transmit a key to the transmitter. This authenticates the transmitter as a valid device and connects it to the OneWireless network. To verify your transmitter has been authenticated, see Security under Read Device Info (page 19).

For more details on keys, refer to Getting Started with Honeywell OneWireless Solutions.

5. Operation

5.5. Authentication device menus

Device Local Configuration

Use Device Local Configuration buttons (Table 9) to navigate the transmitter menus (Table 8) and to make selections and changes.

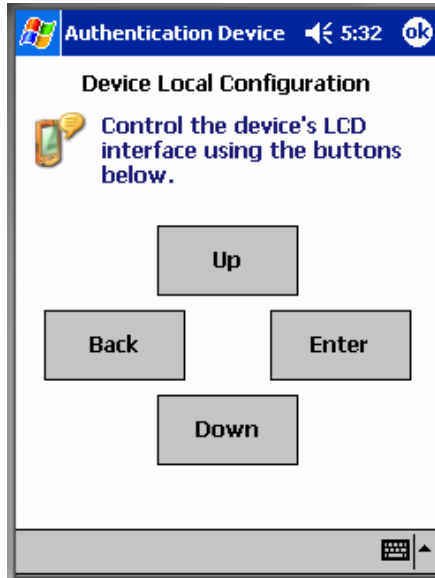

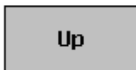

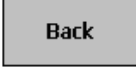


Figure 6 Device Local Configuration screen

Table 9 Buttons for Device Local Configuration

Button	Function
	<ul style="list-style-type: none">• Enter the Menu Tree.• Enter submenu of the menu that is appearing on the screen.• Execute action.• Submit the entered number while doing number entry.• Read value of certain displayed parameters.
	<ul style="list-style-type: none">• Go to the next menu in the same level.• View quick view parameters in Normal Display Sequence (PV Display).• During number entry, increment the digit or change +/- sign.
	<ul style="list-style-type: none">• Go to the previous menu in the same level.• View quick view parameters in Normal Display Sequence (PV Display).• During number entry, decrement the digit or change +/- sign.
	<ul style="list-style-type: none">• Go to the upper menu level.• When changing a number value, move cursor to the left/more significant digit, then wrap around to the least significant digit.

Read Device Information

Use this to read the device information shown in Figure 7. Similar to quick view parameters on the transmitter display. (See page 14.)



Figure 7 Read Device Information

Item	Description
Tag	The name given to this transmitter
Serial	Transmitter serial number
DevAddr	Device Address in hexadecimal.
DevRev	Device Revision. This parameter changes whenever objects and parameters are added, deleted, or their data type or range changes. It does not change if the application firmware changes without affecting the device description. Range: 0 to 65535.
Build	Sensor and radio firmware build numbers.
WFN ID	Wireless Field Network ID. Range: 0 to 255.
FH Mode	Frequency group or frequency channel selection used by the wireless network of the device. The value must match the value set in the gateway and interface nodes to allow communication between the device and the wireless network. Modes: US Channel number 1 US Channel number 6 US Channel number 11 Guard bands outside US Channel number 1, 6 and 11

5. Operation

5.5. Authentication device menus

Item	Description
	EU Channel number 1 EU Channel number 7 EU Channel number 13 Guard bands outside EU Channels 1, 7 and 13
FH ID	Frequency hopping pattern used by the wireless network of the device. The value must match the value set in the gateway and interface nodes to allow communication between the device and the wireless network. Range: 0 to 255
Security	Security Disabled - the transmitter has not been authenticated with a security key. Security Establishing - a security key has been sent to the transmitter and the transmitter is waiting for authentication by a multinode. Security Enabled - the transmitter has been authenticated and is connected to the OneWireless network.

Advanced Options

Advanced options are non-typical configuration commands.

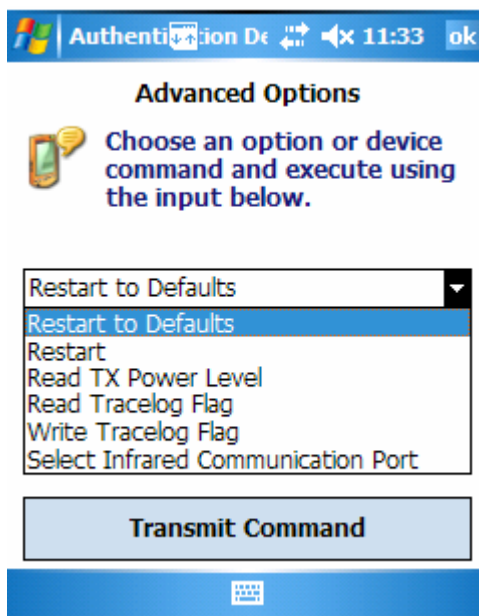


Figure 8 Advanced Options

Table 10 Advanced Options

Item	Description
Restart To Defaults	Commands the transmitter to restart to factory default configuration. Network and security configurations will be cleared.
Restart	Commands the transmitter to restart with the current configuration.
Read TX Power Level	Reads the transmission power level of the transmitter radio.
Read Tracelog Flag	Not available for transmitters. Used with multinodes. Reads conditional tracelog flag value. Tracelog flags are used to enable and disable logging functionality used for field support by development engineering.
Write Tracelog Flag	Not available for transmitters. Used with multinodes. Writes conditional tracelog flag value. Tracelog flags are used to enable and disable logging functionality used for field support by development engineering.
Select Infrared Communication Port	Overrides the detected infrared communication port detected on your PDA. If infrared communication is not functioning, you can override the detected settings using this option.

6. Maintenance/Repair

6.1 Replacing display/sensor module

Tools required

- #1 Phillips Screwdriver or 1/8" Slotted Screwdriver
- Torque Screwdriver
- 1.5 mm hex key

Procedure



WARNING

Risk of death or serious injury by explosion. Do not open transmitter enclosure when an explosive gas atmosphere is present.



CAUTION

Take precautions against electrostatic discharge to prevent damaging the display/sensor module.

Table 11 Display/sensor module replacement

Step	Action
1	Honeywell recommends that the transmitter be removed from service and moved to a clean area before servicing.
2	Loosen the M3 locking set screw on the display end-cap. See item 1 in Figure 9. Unscrew and remove the end cap.
3	Loosen the two screws on the display/sensor module. See items 2 in Figure 9.
4	Disconnect each connector on the display/sensor module. See items 3 in Figure 9.
5	Install new sensor module. Be sure to orient display/sensor module in the proper viewing orientation before tightening two sensor compartment screws.
	Reverse steps 1-4.
	Torque screws to 0,4 – 0,6 N-M (3.5 – 5.3 Lb-in).
	Honeywell recommends lubricating the end cap O-ring with a Silicon Grease such as Dow Corning #33 or equivalent before replacing the end cap.
	Return transmitter to service.

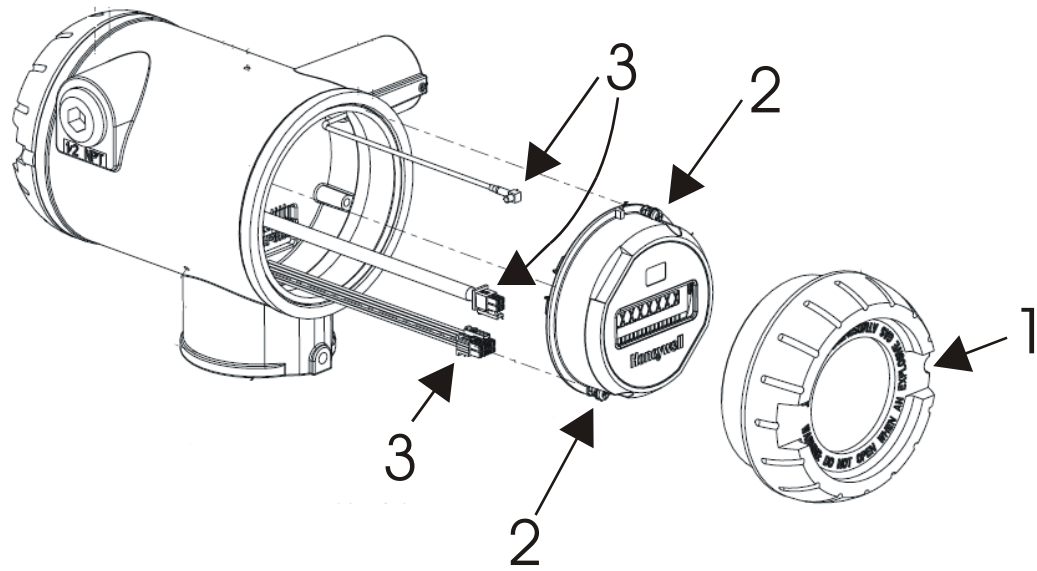


Figure 9 Display/sensor module removal and replacement

6.2 Replacing batteries

When to replace

When the transmitter displays a LO BATT message you have 2-4 weeks to replace both batteries before they expire. When batteries are removed or expired, all transmitter data is retained in the transmitter's non-volatile memory.

Tools required

- #1 Phillips Screwdriver or 1/8" Slotted Screwdriver
- Torque Screwdriver
- 1.5 mm hex key

Procedure



ATTENTION

Batteries must be replaced only by a trained service technician.



WARNINGS

- Risk of death or serious injury by explosion. Do not open transmitter enclosure when an explosive gas atmosphere is present.
 - The battery used in this device may present a risk of fire or chemical burn if mistreated. Do not recharge, disassemble, heat above 100°C (212°F), or incinerate.
-

Table 12 Battery replacement procedure

Step	Action
	ATTENTION You must replace both batteries. Both batteries must be the same model from the same manufacturer. Mixing old and new batteries or different manufacturers is not permitted. Use only the following 3.6V lithium thionyl chloride (Li-SOCl ₂) batteries (non-rechargeable), size D. No other batteries are approved for use in XYR 6000 Wireless Transmitters. <ul style="list-style-type: none">• Xeno Energy XL-205F• Eagle Picher PT-2300H• Tadiran TL-5930/s• Honeywell p/n 50026010-001 (Two 3.6V lithium thionyl chloride batteries)• Honeywell p/n 50026010-002 (Four 3.6V lithium thionyl chloride batteries)• Honeywell p/n 50026010-003 (Ten 3.6V lithium thionyl chloride batteries)
1	Loosen the M3 locking set screw on the battery end-cap (opposite end from display). See item 1 in Figure 10. Unscrew and remove the end cap.
2	Using thumb and forefinger, squeeze the battery connector at top and bottom to disengage the locking mechanism, then pull to disconnect. See item 2 in Figure 10.

- | Step | Action |
|------|---|
| 3 | Loosen the two battery holder retaining screws (closest to the batteries). See item 3 in Figure 10. The screws are captive. |
| 4 | Pull the battery holder out of the transmitter. |
| 5 | Remove the old batteries from the battery holder. If needed, pry out the batteries by using a slotted screwdriver as a lever in the holder's side slots. See item 4 in Figure 10. |
| 6 | Insert the new batteries using correct polarity shown on the battery holder. |
| 7 | Insert the battery holder into the transmitter. Reattach the screws and tighten to 0,4 – 0,6 N-M (3.5 – 5.3 Lb-in). |
- Re-connect battery connector.
- Honeywell recommends lubricating the end cap O-ring with a Silicon Grease such as Dow Corning #33 or equivalent before replacing the end cap.
- | | |
|---|--|
| 8 | Screw the end cap back on and tighten the M3 locking screw. |
| 9 | Dispose of used battery promptly per local regulations or the battery manufacturer's recommendations. Keep away from children. Do not disassemble and do not dispose of in fire. |

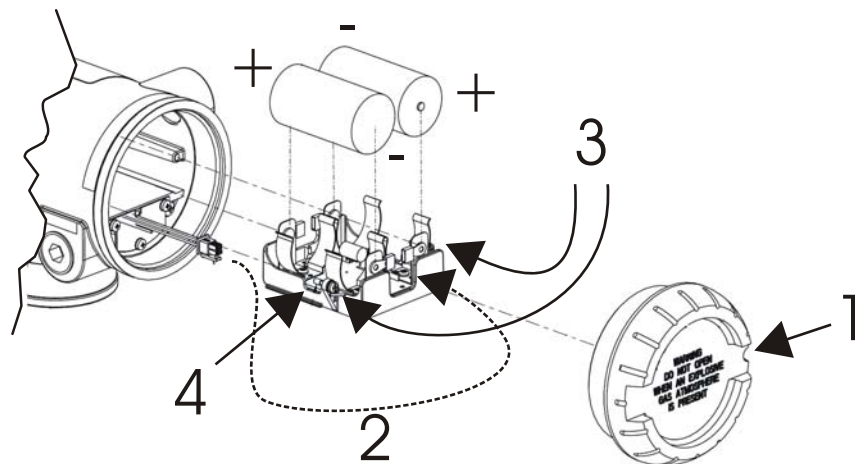


Figure 10 Battery replacement

6.3 Replacing antenna

Tools required

- #1 Phillips Screwdriver or 1/8" Slotted Screwdriver
- Torque Screwdriver
- 1.5 mm hex key

Procedure



ATTENTION

You must replace your antenna with the same type, that is, elbow, straight, or remote. Changing to a different antenna type is not permitted by approval agencies.



CAUTION

Take precautions against electrostatic discharge to prevent damaging the display/sensor module.



WARNING

POTENTIAL ELECTROSTATIC CHARGING HAZARD

The integrally mounted antenna shroud is made of Teflon® and has a surface resistance greater than 1Gohm per square. When the XYR 6000 transmitter is installed in potentially hazardous locations care should be taken not to electrostatically charge the surface of the antenna shroud by rubbing the surface with a cloth, or cleaning the surface with a solvent. If electrostatically charged, discharge of the antenna shroud to a person or a tool could possibly ignite a surrounding hazardous atmosphere.

Table 13 Antenna replacement procedure

Step	Action
1	Honeywell recommends that the transmitter be removed from service and moved to a clean area before servicing.
2	Loosen the M3 locking set screw on the display end-cap. See item 1 in Figure 11. Unscrew and remove the front end cap.
3	Loosen the two screws on the display/sensor module. See items 2 in Figure 11.
4	Remove the display/sensor module from the transmitter body and disconnect the antenna connector from CN2 connector on the display/sensor module. See item 3 in Figure 11.
5	Loosen the locking set screw at the antenna base. Unscrew the antenna from the transmitter. Remove the antenna and its connector from the transmitter. See Figure 11.
6	Feed the new antenna's connector through the antenna hole to the front of the transmitter. Do not connect to display/sensor module yet. Screw new antenna into transmitter body until finger-tight, then back off 180 degrees to permit adjustment later.
7	Attach antenna connector to CN2 connector on display/sensor module. See item 3 in Figure 11.
8	Insert display/sensor module. Orient in the proper viewing orientation before tightening two sensor compartment screws. See items 2 in Figure 11. Torque screws to 0,4 – 0,6 N-M (3.5 – 5.3 Lb-in).
9	Replace the front end cap. Honeywell recommends lubricating the front end cap O-ring with a Silicon Grease such as Dow Corning #33 or equivalent before replacing the end cap.
10	Adjust antenna for best reception. Don't rotate antenna more than 180 degrees either direction or you could twist and break the antenna wiring inside. Tighten the antenna locking set screw.

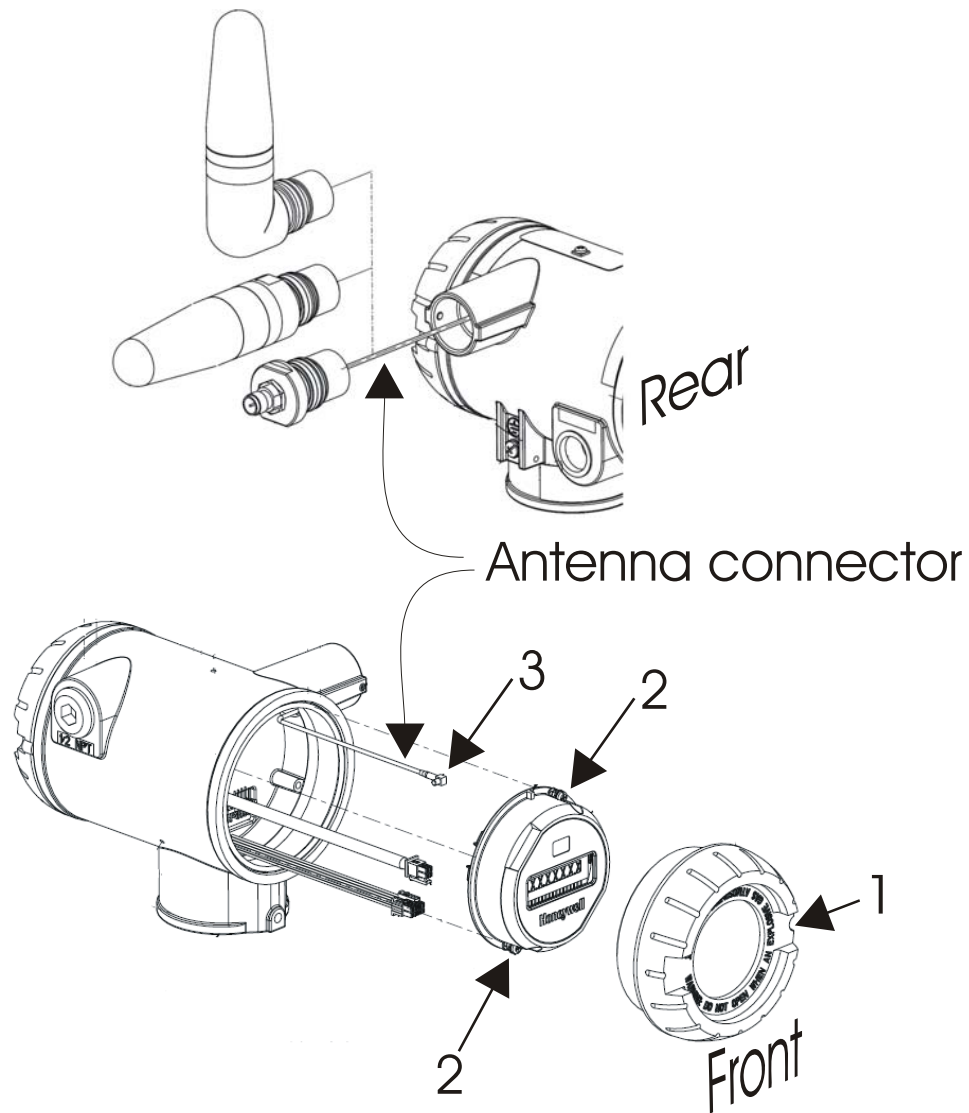


Figure 11 Antenna replacement

6.4 Parts

For other replacement parts, refer to XYR 6000 Wireless Transmitter HLAI specification (document 34-XY-03-30).

