Honeywell

OneWireless

OWA 100 OneWireless Adapter

User Manual

34-XY-25-40
Revision 2
July 2011

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Revision 2 July 2011

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Honeywell Process Solutions

1860 West Rose Garden Lane

Phoenix, AZ 85027

About This Document

This document describes mounting, installation, wiring, operation and maintenance of the OWA 100 Wireless Adapter 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. OneWireless 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.

Revision Information

Document Name	Document ID	Revision Number	Publication Date
OWA 100 Adapter User Manual	34-XY-25-40	1	January 2011
Release version	34-XY-25-40	2	July 2011

References

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

Document Title
Getting Started with Honeywell OneWireless Solutions
OneWireless Wireless Builder User's Guide
OneWireless Builder Parameter Reference

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Honeywell Solution Support Online:

http://www.honeywell.com/ps

Elsewhere

Outside US: Phone 001-215/641-3610 or call your nearest Honeywell office.

Training Classes

Honeywell Automation College:

http://www.automationcollege.com

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.
	**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.

continued

Symbol	Description
	The Factory Mutual® Approval mark means the equipment has been rigorously tested and certified to be reliable.
	The Canadian Standards mark means the equipment has been tested and meets applicable standards for safety and/or performance.
	The Ex mark means the equipment complies with the requirements of the European standards that are harmonised with the 94/9/EC Directive (ATEX Directive, named after the French "ATmosphere EXplosible").
	For radio equipment used in the European Union in accordance with the R&TTE Directive the CE Mark and the notified body (NB) identification number is used when the NB is involved in the conformity assessment procedure. The alert sign must be used when a restriction on use (output power limit by a country at certain frequencies) applies to the equipment and must follow the CE marking.

Symbol	Description
	The C-Tick mark is a certification trade mark registered to ACMA (Australian Communications and Media Authority) in Australia under the Trade Marks Act 1995 and to RSM in New Zealand under section 47 of the NZ Trade Marks Act. The mark is only to be used in accordance with conditions laid down by ACMA and RSM. This mark is equal to the CE Mark used in the European Union. N314 directly under the logo is Honeywell's unique supplier identification number.
	Brazil – National Agency for telecommunications

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1. Introduction

1.1 Safety Messages

These instruction procedures may require special precautions to ensure the safety of the personnel performing the operations. Information that potentially raises safety issues is indicated by a warning symbol (⚠). Please refer to the following safety messages before performing an operation preceded by this symbol.

Warnings	WARNING
⚠	**Failure to follow these instructions could result in death or serious injury.** • Make sure only qualified personnel perform the installation. **Explosions could result in death or serious injury.** • Before connecting the OWA 100 OneWireless Adaptor in an explosive atmosphere, make sure the instruments are installed in accordance with intrinsically safe or nonincendive field wiring practices. • Verify that the operating atmosphere of the transmitter is consistent with the appropriate hazardous locations certifications. **Electrical shock could cause death or serious injury.** • Use extreme caution when making contact with the leads and terminals.

1.2 Purpose

This manual describes the Honeywell OneWireless OWA 100 Adapter installation, function, operation and maintenance.

1.3 Scope

The manual includes:

- Details of topics that relate uniquely to the Honeywell OWA 100 Adapter
- This manual covers installation, mounting and wiring of the OneWireless OWA 100 Adapter.

1.4 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.

1.5 About the OWA 100 OneWireless Adapter

The OneWireless Adapet (OWA 100) is designed with an OneWireless interface to allow wired HART® devices to operate in a compatible distributed OneWireless system. The adapter will interoperate with any OneWireless-registered device and provide the HART diagnostic and process information to any ISA100.11a compliant system.

The OWA 100 Adapter includes OneWireless electronics for operating in a 2.4GHz network.

Outputs

The Process Variable (PV) is available for monitoring and alarm purposes. Available PV update rates are 5, 10, 30, 60 seconds and are set via the OneWireless application. Slower update rates extend battery life.

Figure 1 shows a block diagram of a OWA 100 Adapter's operating functions.

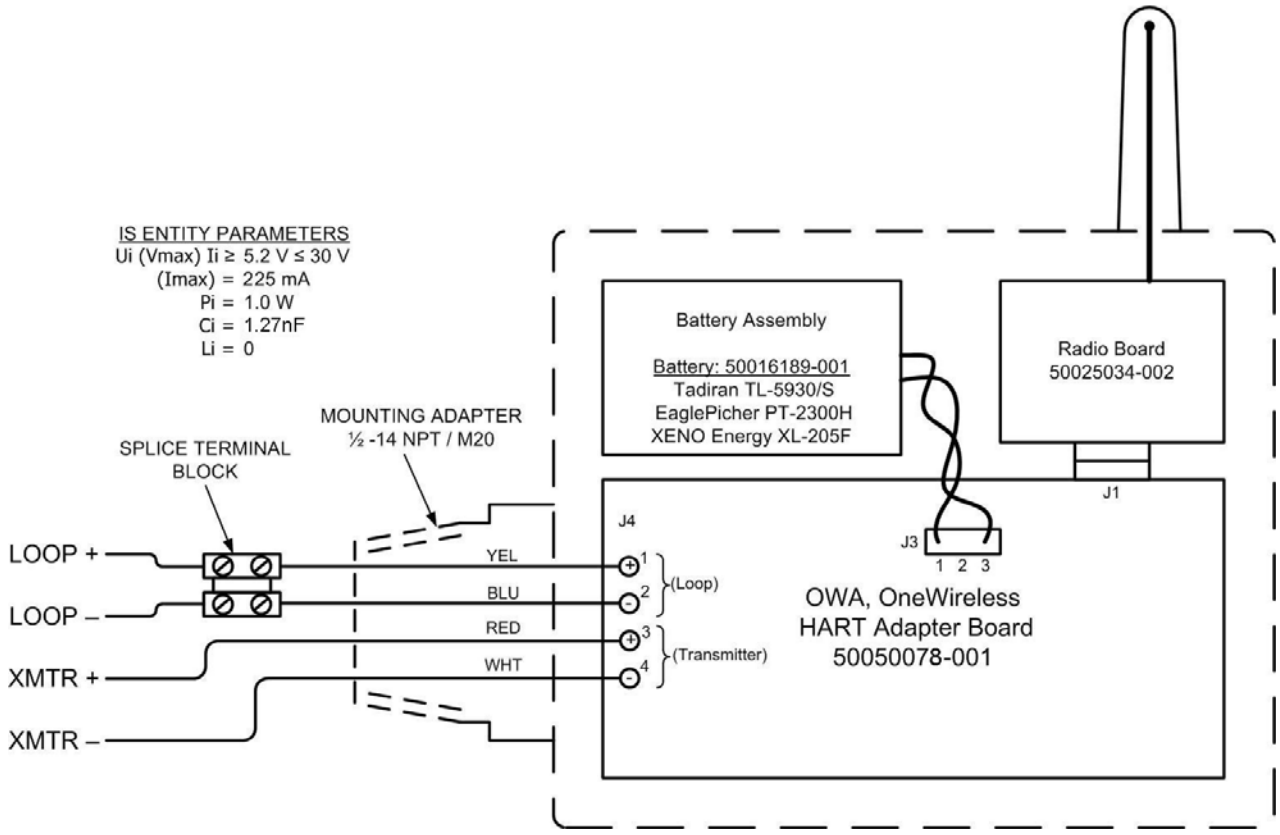


Figure 1-1 OWA 100 Adapter Functional Diagram

2. Specifications

2.1 European Union Usage

This product may be used in any of the following European Union nations.

Country	ISO 3166 2 letter code	Country	ISO 3166 2 letter code
Austria	AT	Latvia	LV
Belgium	BE	Liechtenstein	LI
Bulgaria	BG	Lithuania	LT
Cyprus	CY	Malta	MT
Czech Republic	CZ	Netherlands	NL
Denmark	DK	Norway	NO
Estonia	EE	Poland	PL
Finland	FI	Portugal	PT
France	FR	Romania	RO
Germany	DE	Slovakia	SK
Greece	GR	Slovenia	SI
Hungary	HU	Spain	ES
Iceland	IS	Sweden	SE
Ireland	IE	Switzerland	CH
Italy	IT	United Kingdom	BG

2.2 Certifications and approvals

Hazardous Location Certifications	**CSA - USA and Canada** **Intrinsic Safety** Class I, II, III Division 1, Groups C, D, E, F, & G; T4 Ex ia IIB; T4; Ex tb IIIC T90°C IP66 Ambient Temperature: –40°C ≤ Ta ≤ +70°C Enclosure: Type 4x/ IP46 **Non Incendive** Class I, Division 2, Groups CD; Class II, Division 2, Groups F & G; Suitable for Class III, Division 2; T4 Class I, Zone 2 AEx nA IIB, T4 Ex tb IIIC T90°C, IP66 Ambient Temperature: –40°C ≤ Ta ≤ +85°C Enclosure: Type 4x/ IP46 **IECEx** **DEKRA- Intrinsic Safety** Ex ia IIB, T4 Ex tb IIIC T90°C, IP66 Ambient Temperature: –40°C ≤ Ta ≤ +70°C Enclosure: IP66 **DEKRA- Non Sparking** Ex nA IIB T4, Gc Zone 22, Ex tb IIIC T90°C IP66, Dc, Ambient Temperature: –40°C ≤ Ta ≤ +85°C Enclosure: IP66

	ATEX **DEKRA- Intrinsic Safety**  II 1 G Ex ia IIB T4 II 1 D Ex tb IIIC T90°C, IP66 Ambient Temperature: –40°C ≤ Ta ≤ +70°C Enclosure: IP66 **DEKRA- Non Sparking**  II 3 G Ex nA IIB T4 II 3 D Ex tb IIIC T90°C IP66 Ambient Temperature: –40°C ≤ Ta ≤ +85°C Enclosure: IP66

For detailed OWA 100 Adapter specifications see the following Specification and Model Selection Guide.

- OWA 100 Adapter (document 34-XY-03-43)

Provisioning Device

Install the Provisioning Device application on any PDA having

- Windows Mobile version 4.2+
- Infrared port.

2.3 Agency compliance information

This section contains the Federal Communications Commission (FCC), Industry Canada (IC) and Radio Frequency compliance statements for the OneWireless Multinode device.

ATTENTION

OWA 100 ADAPTER 100 units must be professionally installed in accordance with the requirements specified in the *OneWireless Agency Compliance Professional Installation Guide*.

FCC compliance statements

- This device complies with Part 15 of FCC Rules and Regulations. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radiofrequency energy and, if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Intentional or unintentional changes or modifications must not be made to the Multinode unless under the express consent of the party responsible for compliance. Any such modifications could void the user's authority to operate the equipment and will void the manufacturer's warranty.

IC compliance statements

- To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropic radiated power (EIRP) is not more than that permitted for successful communication.
- Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- This Class A digital apparatus complies with Canadian ICES-003.
- French: Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Radio Frequency (RF) statement

To comply with FCC's and Industry Canada's RF exposure requirements, the following antenna installation and device operating configurations must be satisfied.

- This device must not be co-located with any other antenna or OWA 100 Adapter device and have a separation distance of at least 20cm from all persons.

European Union Conformity

The OWA100 Wireless Transmitters are in conformity with the applicable portions of the ETSI standards as required by the R&TTE Directive 1999/5/EC.

2.4 Honeywell European (CE) Declaration of Conformity (DoC)

This section contains the European Declaration of Conformity (DoC) statement for the OWA 100 OneWireless Adapter.

CE

Honeywell

EC Declaration of Conformity

50061463 Issue A2

PRODUCT:

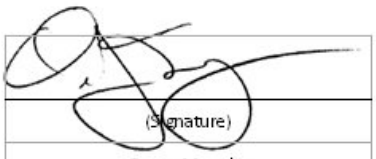
OWA 100, OneWireless Adapter

MANUFACTURE:

Honeywell International Inc.
Honeywell Field Solutions
512 Virginia Drive
Fort Washington, PA 19034
United States of America

To which this declaration relates, is in conformity with the provisions of the European Community Directives, including the latest amendments as shown on the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and when applicable and required, a European Community notified body certification, as shown in the attached schedule.



(Signature)

Owen Murphy
Product Safety and Approvals Engineer

1 June 2011

(Date)

CE

Honeywell

Schedule

50061463 Issue A2

EMC Directive (2004/108/EC)

EN 61326-1: 2006

R&TTE Directive (1999/5/EC)

Emissions Specification and Method: EN 300 328 V1.7.1
Immunity Specification: EN 301 489-17 V1.2.1
Immunity Method: EN 301 489-1 V1.6.1

ATEX Directive (94/9/EC)

Intrinsically Safe:

Standard	Year	Title
EN 60079-0	2009	Apparatus for Explosive Gas Atmospheres – General Requirements
EN 60079-11	2007	Electrical Apparatus for Explosive Gas Atmospheres – Intrinsic Safety
EN 60079-31	2009	Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure "t"

Non -Sparking:

Standard	Year	Title
EN 60079-0	2009	Apparatus for Explosive Gas Atmospheres – General Requirements
EN 60079-15	2005	Electrical Apparatus for Explosive Atmospheres – Part 15: Equipment protection by type of protection "n"
EN 60079-31	2009	Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure "t"

Production Quality Assurance Notification

DEKRA Certification Inc. (Notified body Number: 0344)
Ultrechtseweg 310
6812 AR Arnhem
The Netherlands

2.5 IECEx Conditions of Certification:

The enclosure is non-conducting and the area of the non-conducting part exceeds the maximum permissible areas for Zone 0, Gb according to IEC 60079-0. Therefore when it is used within a potentially explosive atmosphere, appropriate measures must be taken to prevent electrostatic discharge.

2.6 ATEX Conditions for Safe Use:

The enclosure is non-conducting and the area of the non-conducting part exceeds the maximum permissible areas for Category II 1 G (Zone 0) Gb according to EN 60079-0. Therefore when it is used within a potentially explosive atmosphere, appropriate measures must be taken to prevent electrostatic discharge.

3. Configuration

3.1 Safety Messages

These instruction procedures may require special precautions to ensure the safety of the personnel performing the operations. Information that potentially raises safety issues is indicated by a warning symbol (⚠). Please refer to the following safety messages before performing an operation preceded by this symbol.

Warnings

WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD

The OWA 100 OneWireless Adaptor enclosure is non-conductive Lexan, EXL9330 Polycarbonate and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam), which might cause a build-up of electrostatic charge on non-conducting surfaces.

WARNING

Failure to follow these instructions could result in death or serious injury.

- Make sure only qualified personnel perform the installation.
- Explosions could result in death or serious injury.
- The OneWireless Adapter can only be opened for battery insertion and activation, or installed in a potentially hazardous location when the location is declared to be non-hazardous.
- Before mounting the OneWireless Adapter to an existing field transmitter, verify that the instruments are installed in accordance with applicable intrinsically safe or nonincendive field wiring practices.
- Verify that the certification parameters of the OneWireless Adapter are consistent with the appropriate hazardous locations certifications.

Electrical shock could cause death or serious injury.

- Use extreme caution when making contact with the leads and terminals.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation.

This device must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

3.2 Installation

1. Loosen the four M4 screws to remove the cover, (See Figure 3-1)
   If a new battery needs to be installed follow the directions for Replacing the Battery in Section 5.2.
   If a battery is installed remove the shipping tag between the battery and battery holder and replace the cover. Torque M4 screws to 1.0 N.m / 9.0 lbf-inch
2. Remove termination cover to which the adapter is to be connected.
3. Remove plastic protective cover on adapter hub
4. Insert wires through conduit entry of the unit to which it is to be mounted then start to thread the adapter hub into the conduit entry. Use the hex on the adapter hub (smaller hex - See Figure 3-2)) to securely tighten the adapter hub to the unit (See Note). To reorient the antenna of the adapter loosen the jam nut (Turn larger hex nut CC when looking at the front of the OWA 100 Adapter) and rotate the unit to the desired antenna location then retighten the jam nut to 9 N.m /7lb-foot. Note: The rotation of the unit is limited to 350 degrees.
5. Install the four wires per the OWA 100 Adapter Interconnection Diagram per Figure 3-5 to Figure 3-12.
6. Replace the termination cover.

Note: It is the User/Installer's responsibility to install the 100 Adapter in accordance with the national and local code requirements.

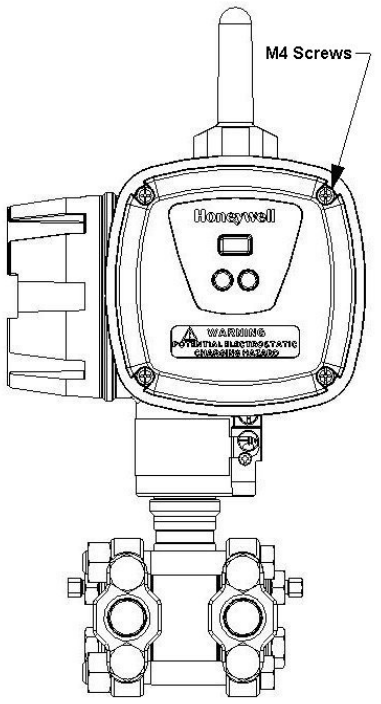


Figure 3-1 Installation, Front view

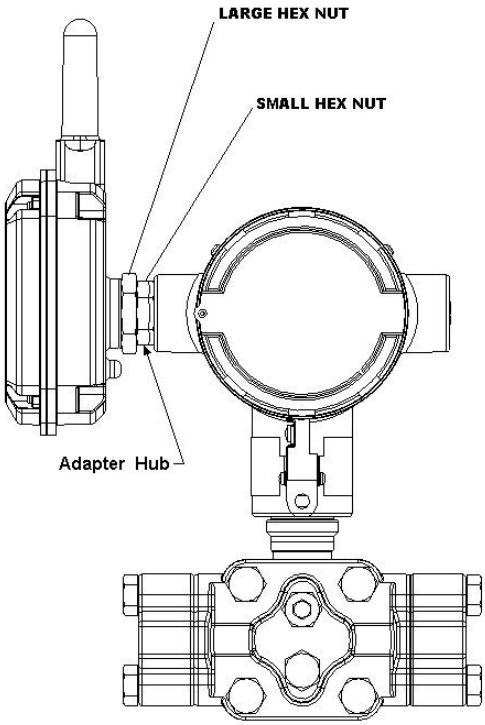


Figure 3-2 Installation, Back view

Dimensions

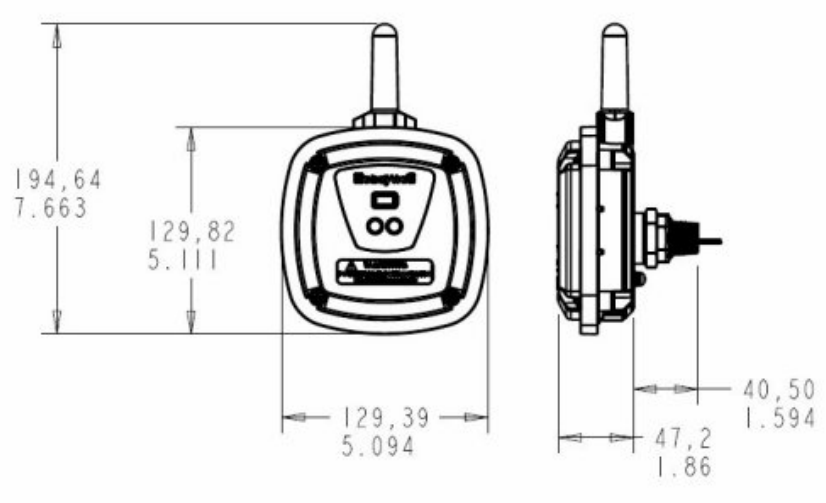


Figure 3-3 Dimensions

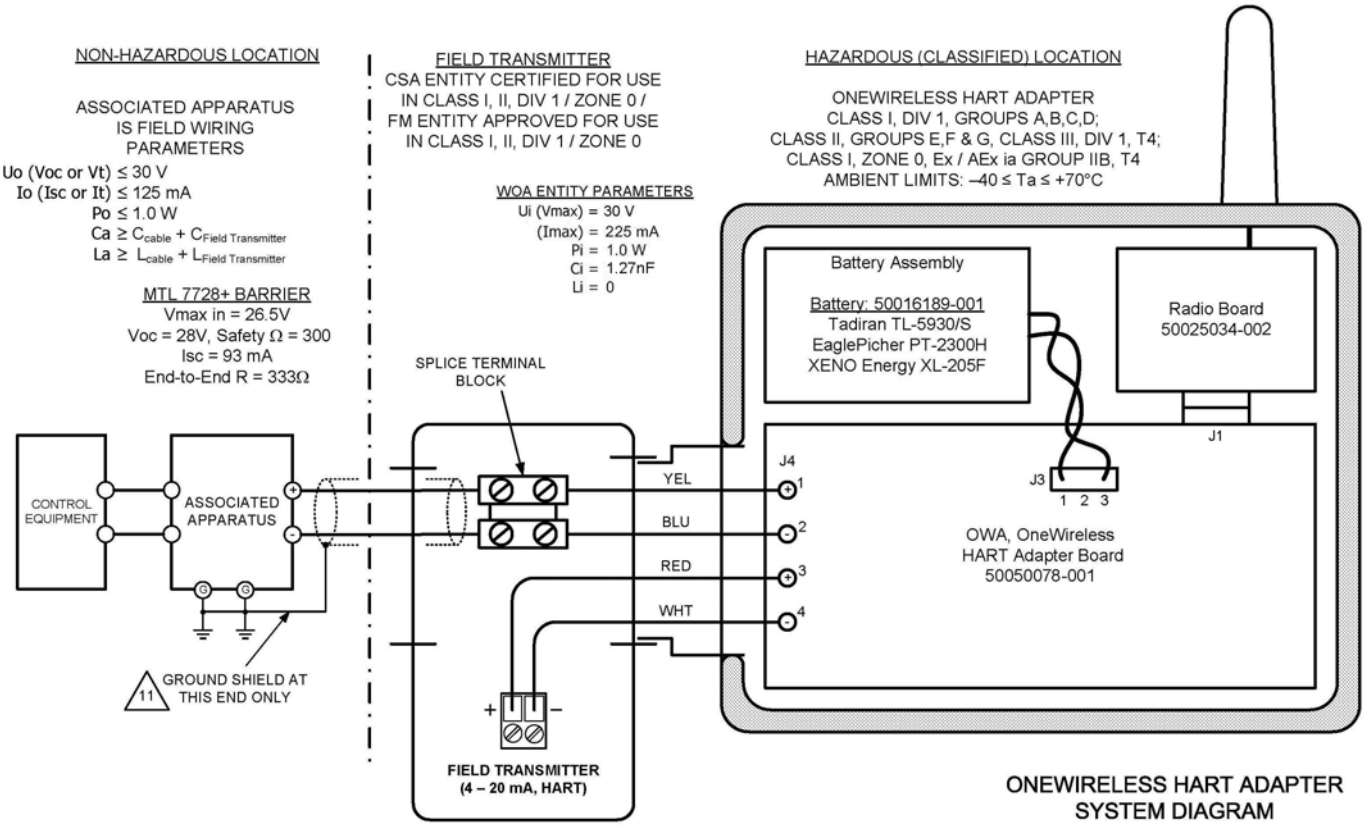


Figure 3-4 System Wiring Diagram

3.3 Connecting to network

Before the adapter can be configured it must be unlocked with a security key so it can join the network. Use the Provisioning Device Pocket PC software to receive security keys from the Key Server manager, then aim the Pocket PC at the OWA 100 Adapter and transmit a key.

Use Provisioning Device to connect your OWA 100 Adapter to the OneWireless network, see section 4.2.

See Getting Started with Honeywell OneWireless Solutions for more information.

3.4 Configuration

The OWA 100 Adapter contains the electronics interface compatible for connecting to the OneWireless network. An operator uses the OneWireless application to configure blocks and to change operating parameters. These changes are written to the OWA 100 Adapter when it is authenticated by a security key. No local configuration of device is required.

When configuring the OWA via the OneWireless application, the PV Publish rate of the OWA should be set to values between 5 seconds and one minute.

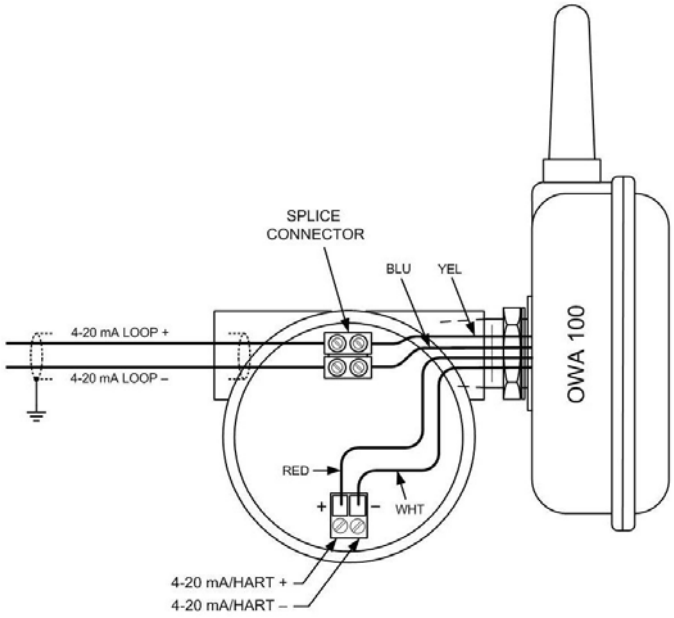


Figure 3-5 OWA 100 – TWO-WIRE CONFIGURATION

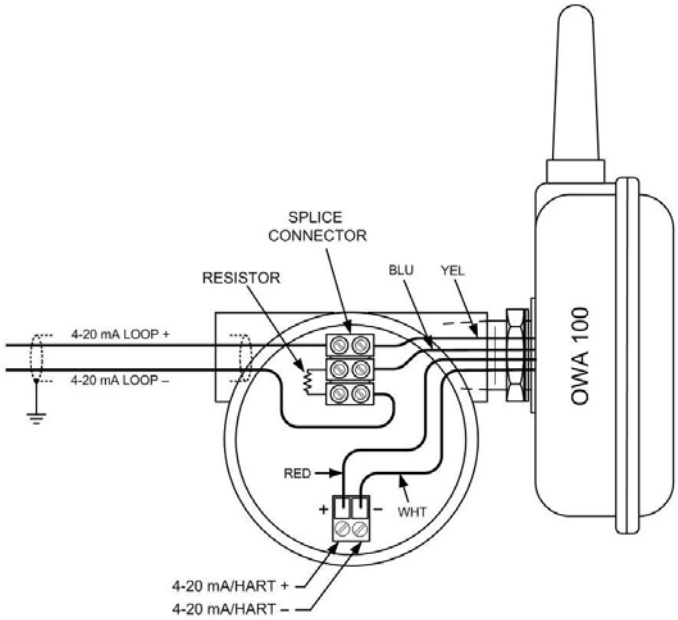
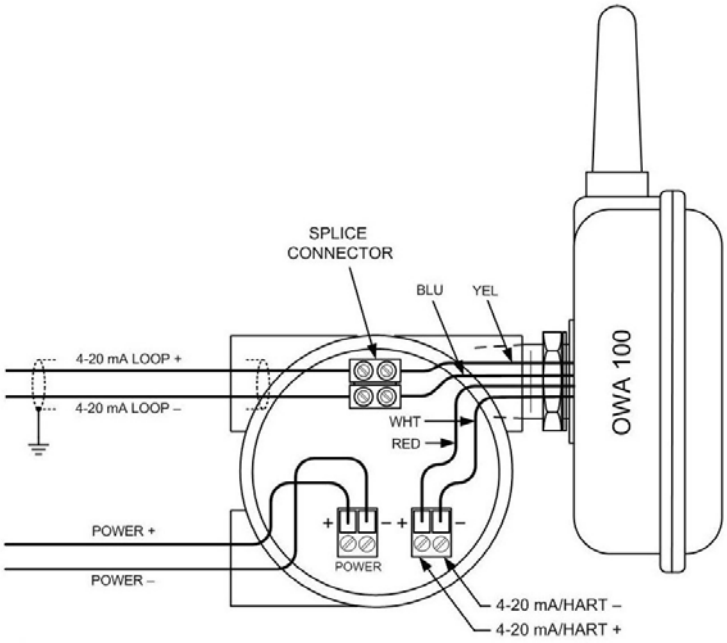
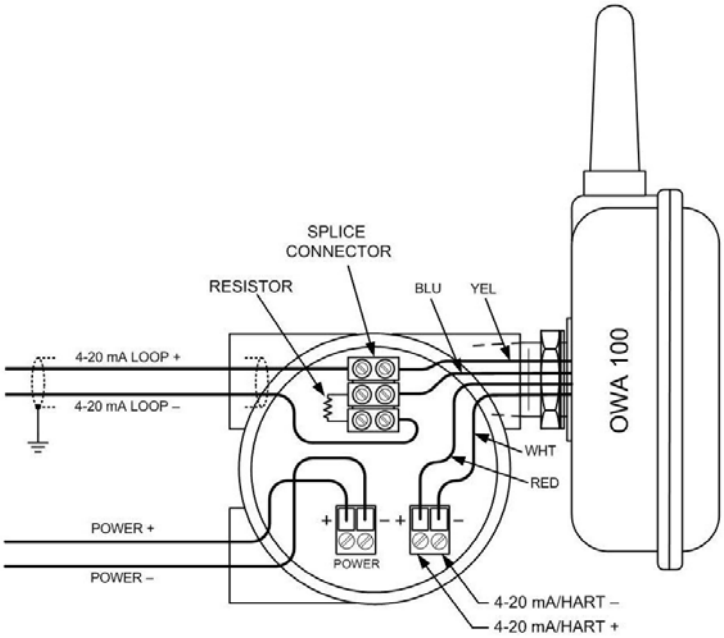


Figure 3-6 OWA 100 – TWO-WIRE CONFIGURATION WITH RESISTOR



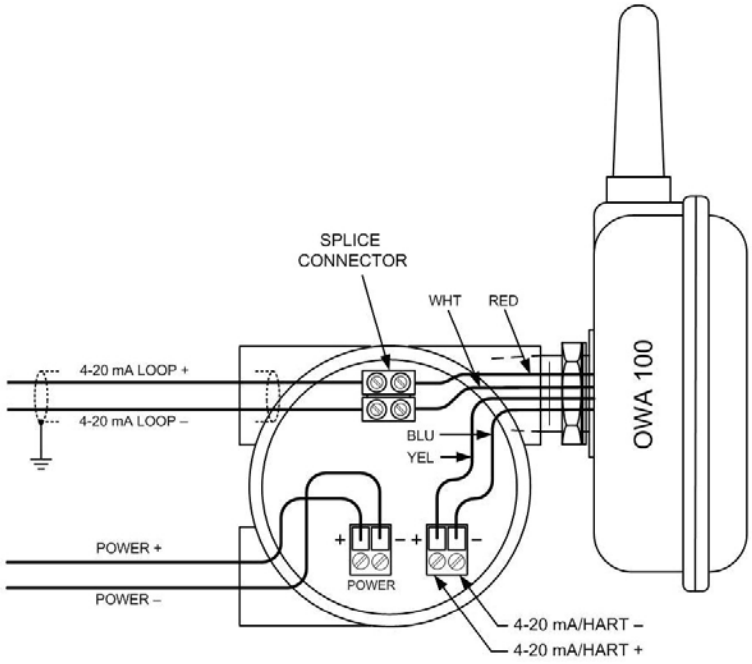
NOTE: A passive loop exists when the wired device is not supplying power to the 4-20mA loop. It is important to verify if the wired device is operating in the active or passive mode.

Figure 3-7 OWA 100 – 4-WIRE PASSIVE DEVICE CONFIGURATION



NOTE: A passive loop exists when the wired device is not supplying power to the 4-20mA loop. It is important to verify if the wired device is operating in the active or passive mode.

Figure 3-8 OWA 100 – 4-WIRE PASSIVE DEVICE CONFIGURATION WITH RESISTOR



NOTE: An active loop exists when the wired device is supplying power to the 4-20mA loop. It is important to verify if the wired device is operating in the active or passive mode.

Figure 3-9 OWA 100 – 4-WIRE ACTIVE DEVICE CONFIGURATION

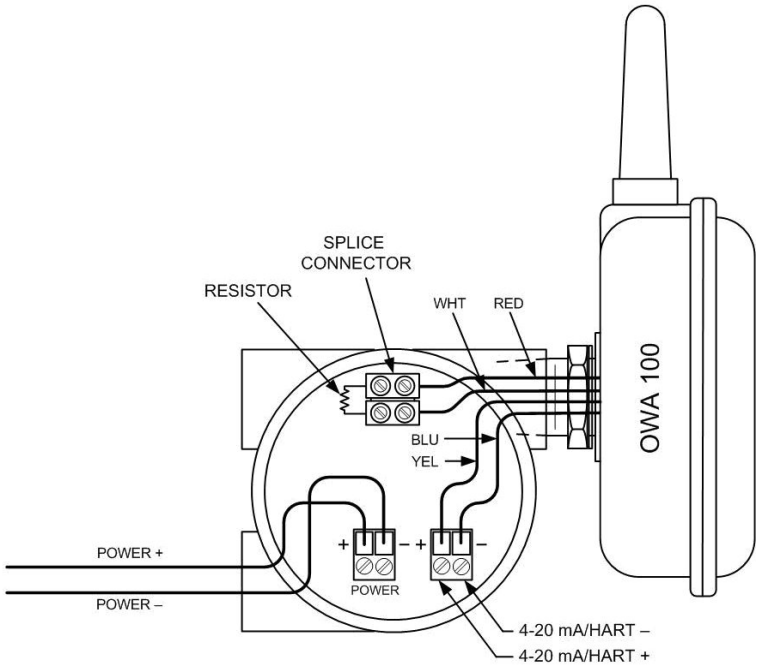


Figure 3-10 OWA 100 – 4-WIRE ACTIVE DEVICE CONFIGURATION WITH NO 4-20 mA LOOP

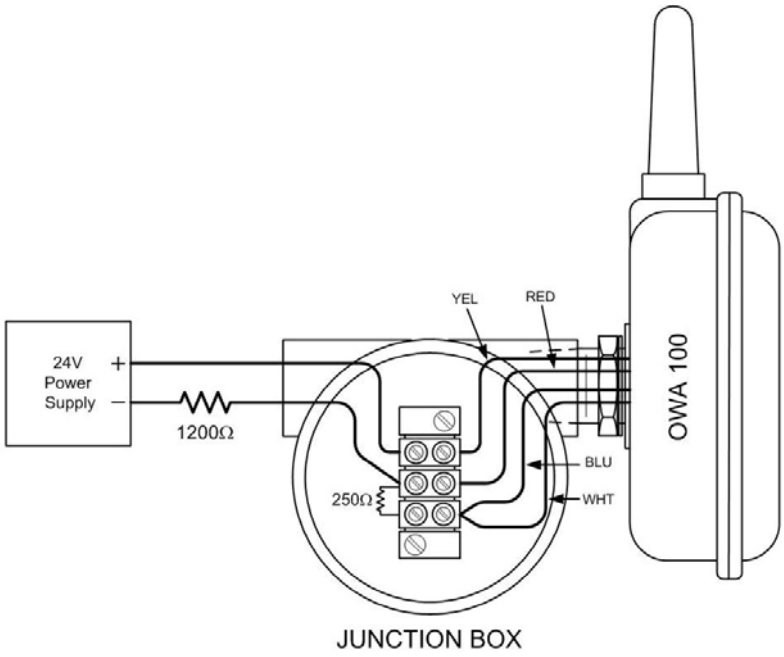


Figure 3-11 OWA 100 – AS A ROUTER, NO WIRED DEVICE

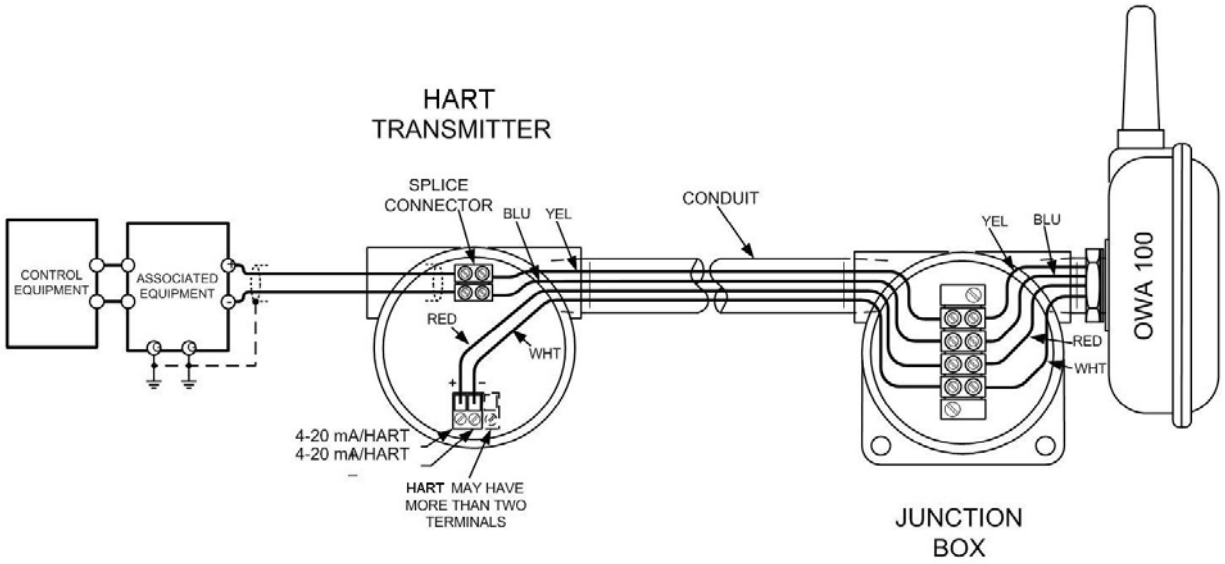


Figure 3-12 REMOTE INSTALLATION

4. Operation

4.1 Overview

OneWireless Adapter display modes

The OneWireless Adapter contains one Red LED and one Green LED that are used to indicate status.

LED Pattern	HART Status	Radio Status
No LEDs	Battery Low	Battery Low
Red – Red/Red	NO HART	NO KEY
Green – Red/Red	HART WORKING	NO KEY
Red – Green	NO HART	DISCOVER
Green – Green	HART WORKING	DISCOVER
Red – Red	NO HART	NOT CONNECTED
Green – Red	HART WORKING	NOT CONNECTED
Red – Red/Green	NO HART	SECURING
Green – Red/Green	HART WORKING	SECURING
Red – Green/Red	NO HART	JOINING
Green – Green/Red	HART WORKING	JOINING
Red – Green	NO HART	JOINED
Green – Green	HART WORKING	JOINED

Table 1 OWA 100 Adapter Display Modes

OWA Status	Definition	What to do
No LEDs	No Power	Replace battery.
NO HART	OWA cannot communicate with HART Device.	• Check wiring between HART device and OWA. • Check for 4-20 mA on Loop connections. • Check that HART Communications are enabled on the HART device. • Check that HART device is operational. • Check that voltage drop across HART device is within specifications – see HART device datasheet. • Using a Secondary Master, confirm that HART Device will respond to HART messages.

OWA Status	Definition	What to do
HART WORKING	OWA is communicating with HART Device.	Normal Operation.
NO KEY	OWA does not have a Key	Transmit a key to the OWA. See page 22.
DISCOVER	OWA has not made a connection to a FDAP and is in the Discovery Mode (searching for a connection to a FDAP). OWA will automatically enter a power saving mode if it cannot make a connection and will retry later.	Wait for a connection. If OWA does not make a connection within five minutes, see NOT CONNECTED in this table.
SECURING	OWA has made a connection with the network and is validating its key.	Wait for a connection. If OWA does not make a connection within five minutes, see NOT CONNECTED in this table.
JOINING	OWA is negotiating the parameters of its interface to the network.	Wait for a connection. If OWA does not make a connection within five minutes, see NOT CONNECTED in this table.
NOT CONNECTED	OWA is in between Discovery attempts.	If OWA does not make a connection to the wireless network within five minutes, do the following: • Check that the Key is correct for the network that you are trying to join. • Check that the FDAP(s) in the local area are turned on and are already a secure part of the network. • Check that FDAP(s) are within radio range of OWA. • Check if WDM is active and if the OWA shows up in the list of devices.
JOINED	OWA has made a secure connection with the network and has entered normal operation mode.	Normal Operation.

4.2 Provisioning device menus

Overview

Hold the Provisioning Device no more than 6” (15 cm) from the OWA 100 Adapter and aim the infrared beam at the OWA 100 Adapter window while tapping on the screen command or button.

Main menu

The main menu is shown below. Details start on the next page.

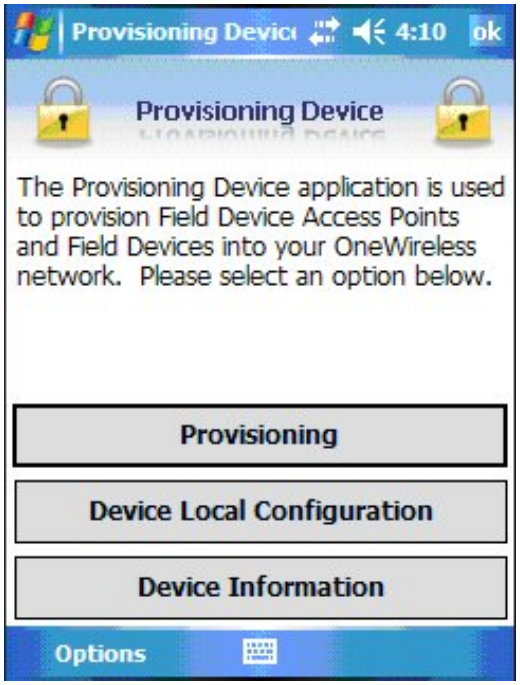


Figure 4-1 Main menu

Security and Node Deployment

Use this to:

- receive new security keys,
- transmit security keys for connecting the OWA 100 Adapter (or other nodes) to the OneWireless network,
- clear all security keys from the PDA,
- clear the OWA 100 Adapter's key and reset its configuration to factory default (such as for decommissioning).

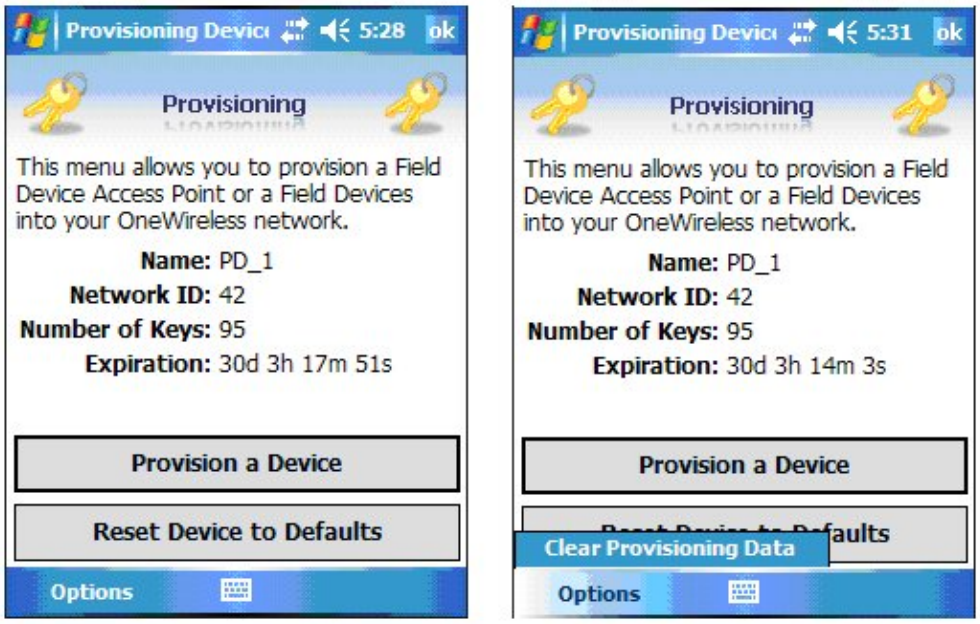


Figure 4-2 Security and Node Deployment

To connect your OWA 100 Adapter to the OneWireless network perform the following steps.

Step	Action
1	If the PDA contains no keys, obtain new security keys from the Wireless Device Manager (WDM).
2	When the Provisioning Device has valid unexpired keys, aim it at the Infrared port of the OWA 100 Adapter and transmit a key to the OWA 100 Adapter. If the unit already has a key, first tap the **Reset Device** button and wait for the unit to reset and restart. When the unit does not have a key, tap the **Provision Device** button. The OWA 100 Adapter will validate the key and then use it to make a connection to the OneWireless Network. The OWA 100 Adapter may continue to show the diagnostic message "NO KEY" for a brief time while it validates the key before showing the "DISCOVER" message. To verify your OWA 100 Adapter has been authenticated, see the Connection prompt on the Read Node Info screen (page 24).

To decommission your OWA 100 Adapter from the OneWireless network, select **Reset Device to Defaults.** This clears the OWA 100 Adapter's key, network and security configurations, and resets the OWA 100 Adapter to its factory default settings. To do this perform the following steps.

Select **Clear Provisioning Data** (under Options) when:

- The PDA has keys from one system, but you have moved your Provisioning Device to another system, or
- you want to clear all keys so that you cannot deploy any more keys without going to the key server manager and getting more.

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

Device Local Configuration

This display is not operative on the OWA 100 Adapter and is shown here for reference only.

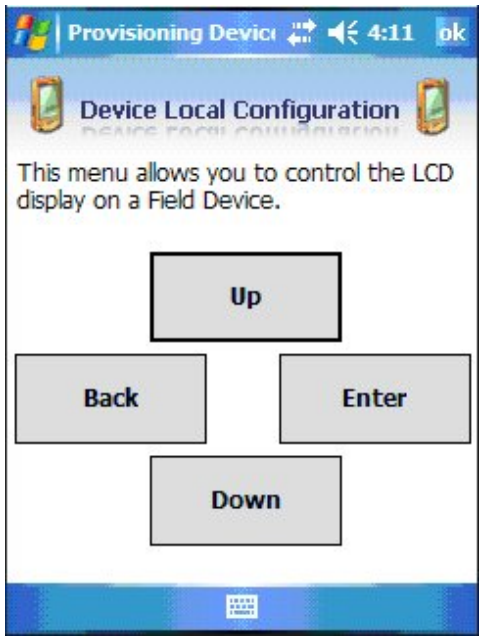


Figure 4-3 Device Local Configuration screen

Table 2 Buttons for Device Local Configuration

Button	Function
Enter	• 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.
Up	• 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.
Down	• 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.
Back	• 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 Node Information

Use this to read the OWA 100 Adapter's information shown in Figure 4-4.

Figure 4-4 Read Node Information

Table 3 Read Node Information

Item	Description
Tag Name:	The name given to this transmitter
Vendor:	Manufacturer of device
Model:	Description of device
Serial:	This is the WBSN on the OWA 100 Adapter's nameplate. Do not confuse this with the other nameplate item marked "Serial."
Radio Revsion:	Software revision of radio firmware
App Revision:	Software revision of sensor firmware
IP Address:	IP Address of OWA 100 Adapter
Network ID	Wireless Network ID

Item	Description
Join Status:	The first line displays one of the following connection states. **No Security Key** – No security key has been deployed to the device or multinode. The user must give a security key to the device or multinode before it will join the wireless sensor network. **Not Joined** – A security key exists in the device or multinode, but no connection has been formed. The device or multinode is waiting to form a connection and will automatically retry shortly. Users may transmit a new security key in order to force the device or multinode to immediately retry to form a connection. **Discover** – The device is attempting to form a connection to the wireless sensor network. The device is discovering multinodes and, if a multinode is found, will transition to the securing state. **Securing** – The device is attempting to form a connection to the wireless sensor network. The device has discovered one or two multinodes and is attempting to form a secure session. If successful, the device will transition to the connected state. **Joining** – The device is negotiating the parameters of the wireless connection. **Joined** – A secure connection is formed with the network. The second line contains detailed state information useful for problem reporting.

Advanced Options

Advanced options are non-typical configuration commands.

Figure 4-5 Advanced Options

Table 4 Advanced Options

Item	Description
Read TX Power Level	Reads the transmission power level of the transmitter radio.

5. Maintenance/Repair

5.1 Parts

The following replacement parts may be ordered from Honeywell.

Part number	Qty.	Description
50056644-501	1	REMOTE MOUNTING KIT FOR 1/2 NPT OWA 100 ADAPTER
50056644-502	1	REMOTE MOUNTING KIT FOR M20 OWA 100 ADAPTER
30671907-001	1	PIPE MOUNT BRACKET KIT (SS) FOR MOUNTING OWA 100 ADAPTER
50026010-001	2	3.6V LITHIUM THIONYL CHLORIDE (Li-SOCI2) BATTERY
50026010-002	4	3.6V LITHIUM THIONYL CHLORIDE (Li-SOCI2) BATTERY
50026010-003	10	3.6V LITHIUM THIONYL CHLORIDE (Li-SOCI2) BATTERY

5.2 Replacing the battery

When to replace

When the Wireless System diagnostics for the OWA 100 Adapter shows a “Low Battery” message, you have 2-4 weeks to replace the battery beforeit expires. When the battery is removed or expired, all OWA 100 data is retained in the OWA 100 non-volatile memory.

Tools required

- #1 Phillips Screwdriver and 3/16” Slotted Screwdriver

Procedure

ATTENTION

The battery must be replaced only by a trained service technician.

WARNINGS

- Risk of death or serious injury by explosion. Do not open OWA 100 Adapter enclosure when an explosive gas atmosphere is present.
- The battery must not be changed in an explosive gas atmosphere.
- The batteries 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.
- When installing the battery, do not snag the battery terminal on the clip or the battery may be damaged. Do not apply excessive force.
- Do not drop. Dropping the battery may cause damage. If a battery is dropped, do not install the dropped battery into the OWA 100 Adapter. Dispose of dropped battery promptly per local regulations or per the battery manufacturer’s recommendations.

SHOCK HAZARD

Depending on your installation, OWA 100 Adapter input wiring sources may contain high voltage. Disconnect all power from OWA 100 Adapter input sources before accessing the batteries. Failure to do so could result in death or serious injury if the input terminals or wires are accidentally touched.

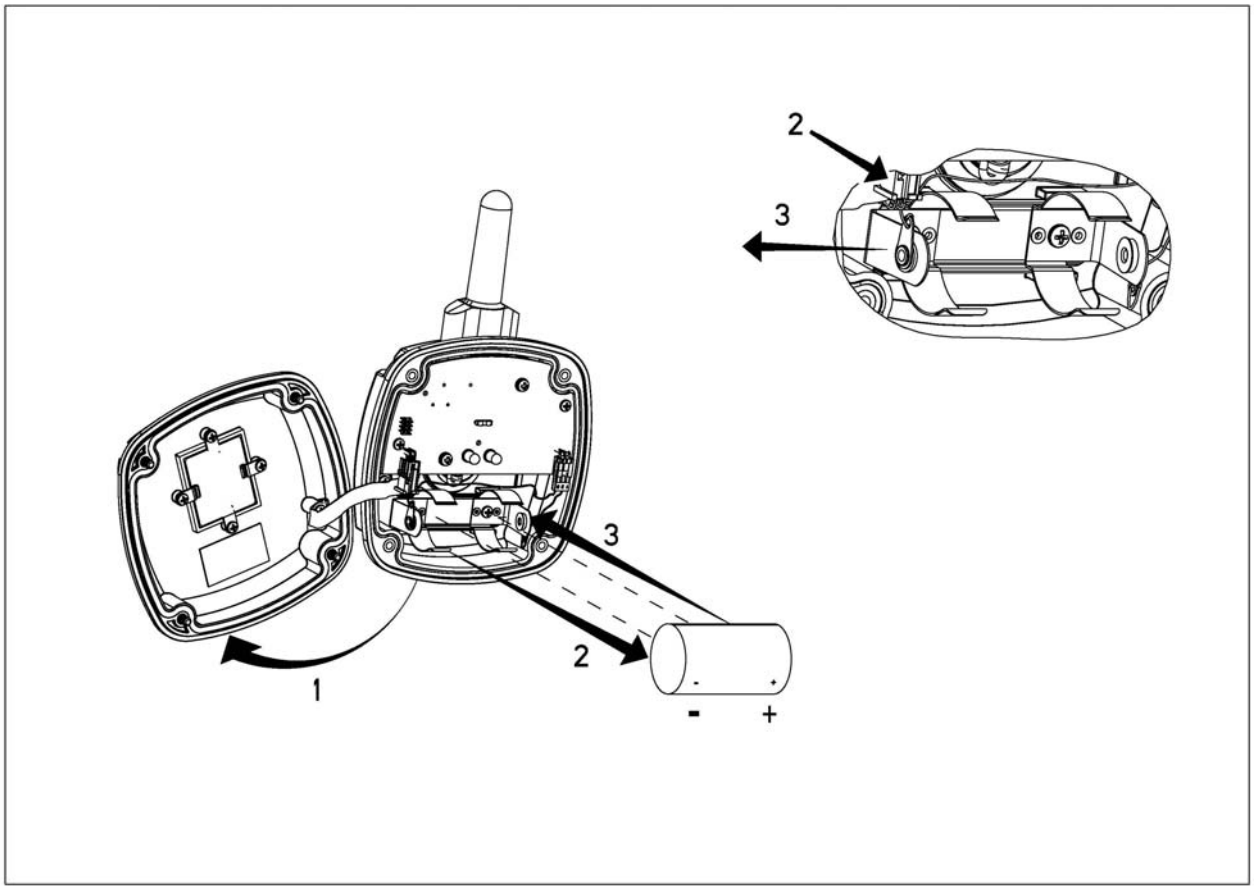


Figure 5-1 Battery replacement

Table 5 Battery replacement procedure

Step	Action
	ATTENTION Use only the following 3.6V lithium thionyl chloride (Li-SOCl2) batteries (non-rechargeable), size D. No other batteries are approved for use in OWA 100 Adapter. • Xeno Energy XL-205F • Eagle Picher PT-2300H • Tadiran TL-5930/s
1	Loosen (4) M4 screws and remove the cover.
2	Disconnect J2 connector
3	Remove the old battery from the battery holder. If needed, pry out the battery by using a slotted screwdriver as a lever.
4	Reconnect J4 connector
5	Install battery as follows to avoid snagging the battery terminal on the clip and damaging the battery. Align the new battery with the clips and angle the positive (+) end of the batteryinto the positive (+) battery terminal clip. Using a thumb and forefinger pull the negative terminal clip outward and push down on the battery until fully seated in both clips. Do not apply excessive force when pushing the battery down.
6	Replace the cover and tighten the (4) M4 screws with a torque of 1.0 N.m / 9.0 lbf-inch.
7	Dispose the 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.

6. Certification Installation Requirements

6.1 Certification Drawings

Use the following drawings and accompanying notes and text for hazardous locations. **Any deviation from the installation requirements could void the certification.** For non-hazardous locations you can use the same drawings without the accompanying notes and text.

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PRE REL	A10						
ISS	REVISION & DATE						APPD
	XXXXX 06/17/11						

OWA 100 – OneWireless Adapter

CLASS I, II & III, DIVISIONS 1 & 2, GROUPS C, D, E, F & G; ZONES 0 / 1 & 2, AEx ia / nA IIB, Ex ia / nA IIB; ZONE 20/21 & 22 AEx tb IIIC, Ex tb IIIC

To assure an Intrinsically Safe system, the OWA 100 OneWireless Adapter, "Field Transmitter" and Associated Equipment must be wired in accordance with the Associated Equipment manufacturer's Field Wiring instructions and the wiring diagram(s) shown in this document.

NOTES:

1. Intrinsically safe installation shall be in accordance with
   a. FM (USA): ANSI/NFPA 70, NEC® Articles 504 and 505, and ANSI/ISA RP12.06.01.
   b. CSA (Canada): Canadian Electrical Code (CEC), part I, section 18 and ANSI/ ISA RP12.06.01.
   c. ATEX: Requirements of EN 60079-14, 12.3 (See also 5.2.4).
   d. IECEx: Requirements of IEC 60079-14, 12.3 (See also 5.2.4).
2. ENTITY approved equipment shall be installed in accordance with the manufacturer's Intrinsic Safety Control Drawing.
3. The Intrinsic Safety ENTITY concept allows the interconnection of two ENTITY Approved Intrinsically safe devices with ENTITY parameters not specifically examined in combination as a system when:

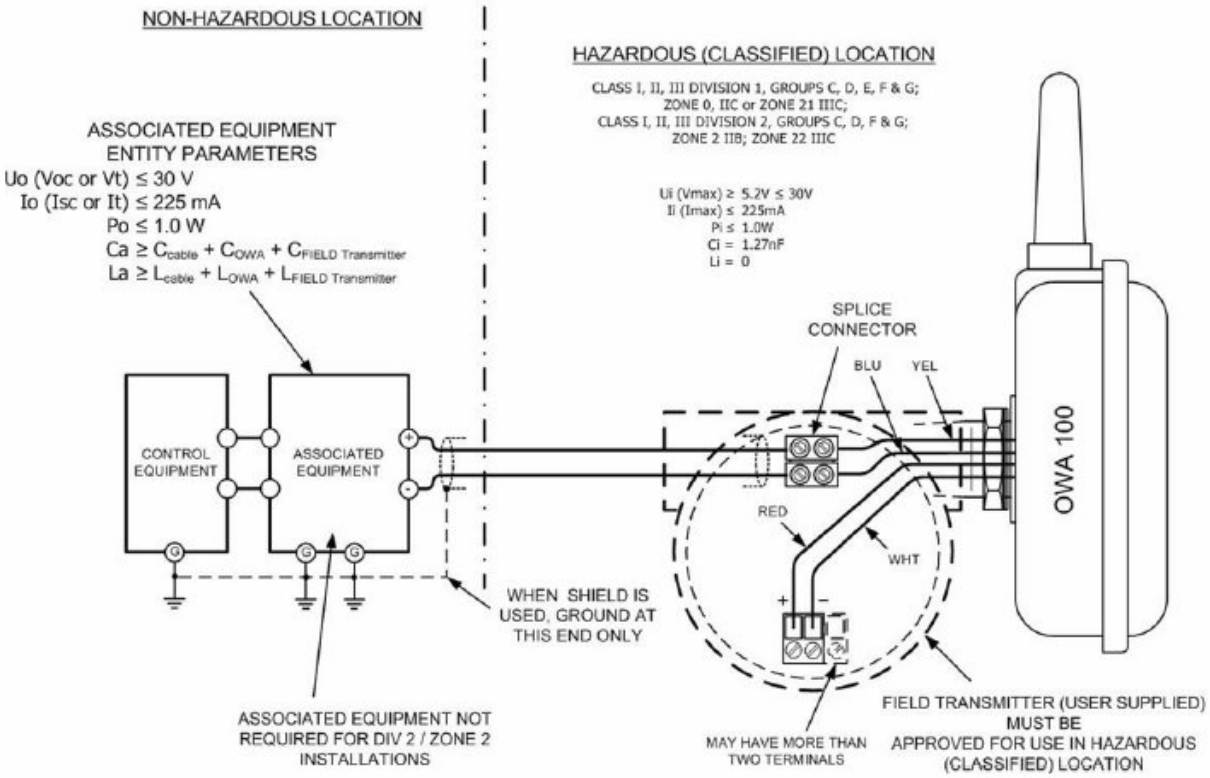
   Uo, Voc, or Vt ≤ Ui or Vmax; Io, Isc, or It ≤ Ii or Imax; Ca or Co Ci + Ccable, La or Lo Li + Lcable, Po ≤ Pi. Where two separate barrier channels are required, one dual-channel or two single-channel barriers may be used, where in either case, both channels have been Certified for use together with combined entity parameters that meet the above equations.
4. System Parameters:
   OWA 100 and Field Transmitter Vmax Voc or Uo, Imax Isc or Io;
   OWA 100 Ci + Field Transmitter Ci + Ccable ≤ Control Apparatus Ca,
   OWA 100 Li + Field Transmitter Li + Lcable ≤ Control Apparatus La.
5. When the electrical parameters of the cable are unknown, the following values may be used: Capacitance – 197pF/m (60 pF/ft), Inductance – 0.66µH/m (0.020µH/ft).
6. Control equipment that is connected to Associated equipment must not use or generate more than 250 V.
7. Associated equipment must be FM, CSA ATEX or IECEx (depending on location) listed. Associated equipment may be installed in a Class I, Division 2 or Zone 2 Hazardous (Classified) location if so approved.
8. Non-Galvanically isolated equipment (grounded Zener Barriers) must be connected to a suitable ground electrode per:
   a. FM (USA): NFPA 70, Article 504 and 505. The resistance of the ground path must be less than 1.0 ohm.
   b. CSA (Canada): Canadian Electrical Code (CEC), part I, section 10.
   c. ATEX: Requirements of EN 60079-14, 12.2.4.
   d. IECEx: Requirements of IEC 60079-14, 12.2.4.

   The resistance of the ground path must be less than 1.0 ohm.
9. Divisions 1 & 2, and Zone 0 /1 / 2: WARNING: EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN HAZARDOUS LOCATIONS.
10. NO REVISION OF THIS CONTROL DRAWING IS PERMITTED WITHOUT AUTHORIZATION FROM the Agencies listed.

CERTIFICATION DOCUMENT ENGINEERING CHANGE ORDERS (ECOs) MUST BE AUTHORIZED BY APPROVALS ENGINEERING	DRAWN			Honeywell		
	CHECKED			Control Drawing OWA 100 OneWireless Adapter Divisions 1 & 2 / Zones 0 / 1 /& 2		
	DEV ENG					
	MFG ENG					
	QA ENG			A/A4	50056945	
	TOLERANCE UNLESS NOTED					
	ANGULAR DIMENSION			SCALE – NONE	USED ON	SH 1 OF 9

OWA 100	Field Transmitter	Associated Apparatus
Ui or Vmax ≥ 5.2V ≤ 30V	Ui, Vmax, or Vt ≤	Uo, Voc or Vt ≥ 5.2V ≤ 30V
Ii or Imax = 225 mA	Ii, Imax, or It ≤	Io, Isc or It ≤225 mA
Pi or Pmax = 1.0 W	Pmax ≥ Po	$Po \leq \frac{(Voc \text{ or } Vt \cdot Isc \text{ or } It)}{4} \leq 1.0\ W$
Ci = 1.27nF	Associated Apparatus Ca Ccable – Ci of other transmitter connected to two channel barrier.	Ca (or Co) > 1.27nF
Li = 0	Associated Apparatus La Lcable – Li of other transmitter connected to two channel barrier.	La (or Lo) > 0

OWA 100 – OneWireless Adapter



Honeywell	A/A4	50056945	
	SCALE – NONE	REV A10 DATE 06/17/11	SH 2 OF 2

7. Reference Data

7.1 Product Specifications

Operating Conditions

Parameter	Reference Condition		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature**	25 ±1	77 ±2	-40 to 85	-40 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	
Vibration	Maximum of 4g over 15 to 200 Hz							
Shock	Maximum of 40g							
Power	Battery powered 3.6V Lithium thionyl chloride (LiSOCl2) battery non rechargeable, size D							
	Connected into a powered 4-20 mA loop power supply = 7 to 30 Vdc, 25 mA for power scavenging; maximum loop voltage drop due to adapter is 2.52 Vdc over the ambient temperature range across the loop; minimum loop load resistance is 250 Ohms. Battery life @ reference conditions with 30 second publish cycle time set for non-Routing is 3+ years							

** The ambient limits shown are for ordinary non-hazardous locations only. Refer to the appropriate control drawing, FM/CSA, ATEX, or IECEx for the ambient limits when installed in hazardous locations.

Specifications

Parameter	Description
Input	Any 2 or 4-wire HART device
Wireless Communication	ISA100.11a Compliant 2,400 to 2,4835 MHz (2.4 GHz) Industrial, Scientific and Medical (ISM) band per FCC 15.247 / IEEE 802.15.4–2006. Every data packet transmitted in either direction is verified (CRC check) and acknowledged by the receiving device. USA – FCC Certified; Canada – IC Certified; European Union – RTTE/ETSI Conformity
RF Transmitter Power	NA Selection – 125 mW (20.9 dBm) maximum transmit power not including antenna per FCC/IC, or 400 mW (26.0 dBm) maximum EIRP including antenna for USA and Canadian locations EU Selection – 10 mW (10.0 dBm) maximum EIRP including antenna per RTTE/ETSI for EU locations.
Data	PV Data Publish Cycle Time: Configurable from 5 second to 1 minute Rate: 250 Kbps ISA100.11a Compliant output
Antenna	Integral – 2.5 dBi omnidirectional monopole
Signal Range*	OWA 100 Adapter to FDAP: Nominal 305 m (1,000 feet) with a clear line of sight Two OWA's both having TX Power set to 14 dBm with a clear line of site nominal signal range is 240 m (790ft.) An XYR 6000 transmitter having TX Power set to 16 dBm and an OWA with TX Power set to 14 dBm with a clear line of site nominal signal range is 170 m (560ft.)

Parameter Routing vs. non-Routing"	Specification - Unit can be set as a Field Routing or non-Field Routing device; the number of routing devices is set by the system manager. Using the device as a routing device will impact battery life, the more messages routed through a device, the greater the impact on battery life.
CE Conformity	These transmitters conform with the protection requirements of European Council Directives: 2004/108/EC, the EMC Directive and 1999/5/EC, the Telecommunications Directive per EN 300 328, V1.7.1 (2004-11), EN 300 489-1, V1.6.1 (2005-09), EN 300 489-17, V1.2.1 (2002-08), EN 301 893 V1.4.1 and EN 61326-1:2005, Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements

* Actual range can vary depending on site topography.

Physical Specifications

Parameter	Description
Mounting	½" NPT or M20 Stainless Steel fitting that allows the adapter to be attached directly to the conduit entry of any 2 or 4-wire HART device (standard options). Mounting should result in the antenna being vertically oriented. An optional Remote Mounting Kit is available.
Housing	Molded Lexan Polycarbonate V0 Rating and UV Stable. Meets NEMA 4X (hosedown and corrosion resistant), IP 66 (dust/tight/hosedown).
Dimensions	See Specification sheet.
Net Weight	Approximately 1.0lb/(0.45Kg)

Certifications

Hazardous Location Certifications	**CSA – USA & Canada** **Intrinsic Safety** Class I, II, III Division 1, Groups C, D, E, F, & G; T4 Ex ia IIB; T4; Ex tb IIIC T90°C IP66 Ambient Temperature: –40°C ≤ Ta ≤ +70°C Enclosure: Type 4x/ IP46 **Non Incendive** Class I, Division 2, Groups CD; Class II, Division 2, Groups F & G; Suitable for Class III, Division 2; T4 Class I, Zone 2 AEx nA IIB, T4 Ex tb IIIC T90°C, IP66 Ambient Temperature: –40°C ≤ Ta ≤ +85°C Enclosure: Type 4x/ IP46 **IECEx - DEKRA** **Intrinsic Safety** Ex ia IIB, T4 Ex tb IIIC T90°C, IP66 Ambient Temperature: –40°C ≤ Ta ≤ +70°C Enclosure: IP66 **Non Sparking** Ex nA IIB T4, Gc Zone 22, Ex tb IIIC T90°C IP66, Dc, Ambient Temperature: –40°C ≤ Ta ≤ +85°C Enclosure: IP66 **ATEX - DEKRA** **Intrinsic Safety**  II 1 G Ex ia IIB T4 II 1 D Ex tb IIIC T90°C, IP66 Ambient Temperature: –40°C ≤ Ta ≤ +70°C Enclosure: IP66 **Non Sparking**  II 3 G Ex nA IIB T4 II 3 D Ex tb IIIC T90°C IP66 Ambient Temperature: –40°C ≤ Ta ≤ +85°C Enclosure: IP66

Sales and Service
For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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FAX: +420 242 442 131

Denmark
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FAX: +(45) 39 55 55 58

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