SmartLine Wireless Temperature and Universal IO Transmitters
Quick Start Installation Guide

34-SW-25-02, Revision 1, December 2019

For full details refer to the Wireless Pressure User's manual 34-SW-25-01 or the Wireless Temperature User's manual 34-SW-25-04, scan QR code or use URL link below.
Including: Network, Security, Licensing, Installation, Start Up, Operation, Maintenance/Repair, Protocols and Approvals/Certifications etc. including options.

Documentation

To access complete documentation, including language variants, scan the QR code below using your smart phone/device or QR code scanner.

Go to the APP store for your free Smartphone QR scanner

Or you can follow the URL to access the online SmartLine HUB page.

The HUB page will contain direct links to open SmartLine product documentation.

URL
https://hwll.co/SmartLineHUB

QR Code

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INSTALLATION

Evaluate the site selected for the Transmitter installation with respect to the process system design specifications and Honeywell's published performance characteristics for your particular model.

Mounting the Transmitter

Temperature/UIO models can be attached to a two-inch (50 millimeter) vertical or horizontal pipe using Honeywell's optional angle or flat mounting bracket; alternately you can use your own bracket.

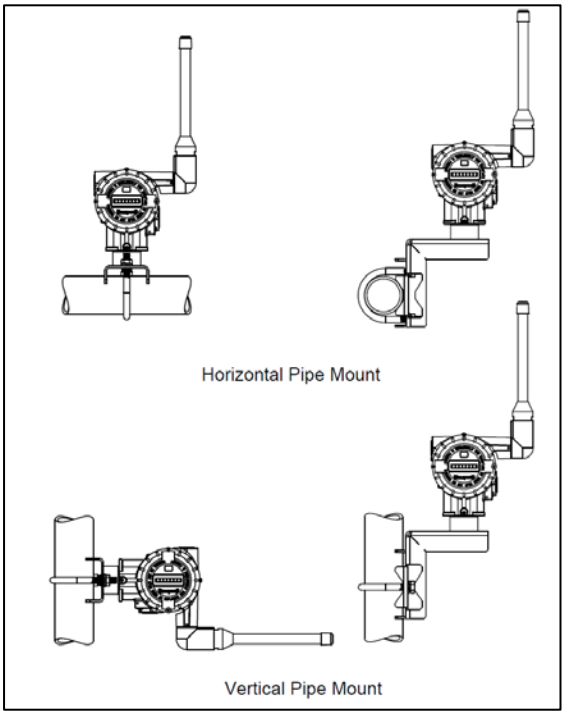

Figure 2: Mounting Brackets

Bracket Mounting

- Optional mounting bracket, see
- Rotating the transimitter housing, see Figure 3.

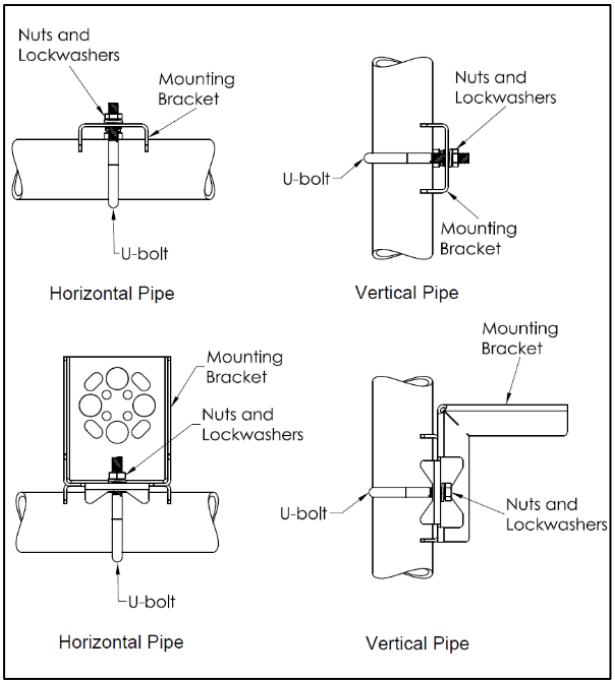

Figure 1: Flat and Angle Mounting Brackets

Rotating Transmitter Housing

You can rotate the transmitter for better viewing, access, or antenna position. Loosen set screw (see A in Figure 3) on outside neck of transmitter one full turn. Rotate transmitter housing up to 180 degrees in either direction to desired position. Tighten set screw.

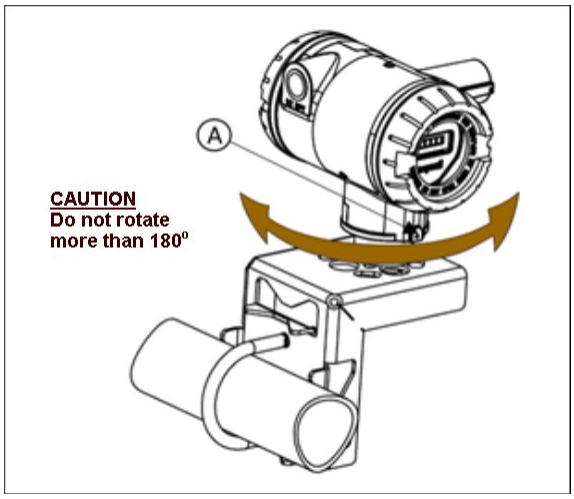

Figure 3: Rotating Transmitter Housing

Conduit Entry Plugs and Adapters

Procedures

It is the User/Installer's responsibility to install the Transmitters in accordance with national and local code requirements. Conduit entry plugs and adapters shall be suitable for the environment, shall be

CONDUIT ENTRY PRECAUTIONARY NOTICE
THE CONDUIT/CABLE GLAND ENTRIES OF THIS PRODUCT ARE SUPPLIED WITH PLASTIC DUST CAPS WHICH ARE NOT TO BE USED IN SERVICE. IT IS THE USER'S RESPONSIBILITY TO REPLACE THE DUST CAPS WITH CABLE GLANDS, ADAPTORS AND/OR BLANKING PLUGS WHICH ARE SUITABLE FOR THE ENVIRONMENT INTO WHICH THIS PRODUCT WILL BE INSTALLED. THIS INCLUDES ENSURING COMPLIANCE WITH HAZARDOUS LOCATION REQUIREMENTS AND REQUIREMENTS OF OTHER GOVERNING AUTHORITIES AS APPLICABLE.

certified for the hazardous location when required and acceptable to the authority having jurisdiction for the plant.

Use the following procedures for installation:

Table 1 – Conduit Entry Plugs

Step	Action
1	Remove the protective plastic cap from the threaded conduit entry.
2	To ensure the environment ingress protection rating on tapered threads (NPT), a non-hardening thread sealant may be used.
3	Thread the appropriate size conduit plug (M20 or ½" NPT) into the conduit entry opening. Do not install conduit entry plugs in conduit entry openings if adapters or reducers will be used.
4	Tighten adapters according to the following table.

Description	Tool	Torque	
M20 Conduit Entry	10mm Hex Wrench	32Nm	24Lb-ft
½" NPT Conduit Entry	10mm Hex Wrench	32Nm	24Lb-ft

Table 1 – Conduit Adapters

Step	Action
1	Remove the protective plastic cap from the threaded conduit entry.
2	To ensure the environment ingress protection rating on tapered threads (NPT), a non-hardening thread sealant may be used.
3	Thread the appropriate size adapter (M20 or ½" NPT) into the conduit entry opening.
4	Tighten adapters according to the following table.

Description	Tool	Torque	
½" to ¾" NPT Conduit Entry	¼" Wrench	32Nm	24Lb-ft

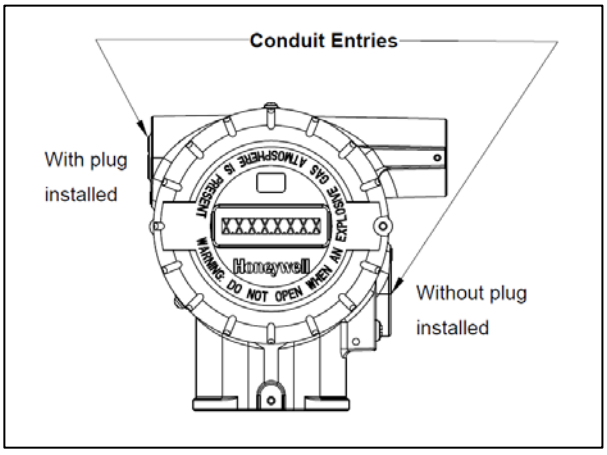

Figure 4: Electronic Housing Conduit Entries

Note. NO plugs come installed in the housing. All housings come with temporary plastic dust protectors (red) installed and are not certified for use in any installation.

Battery Power Option

Install/Replace batteries

WARNING

Risk of death or serious injury from explosion or fire.

- When not in use the Battery Pack must be stored in a non Hazardous Area
- Do not change batteries 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 batteries, 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 transmitter. Dispose of dropped battery promptly per local regulations or per the battery manufacturer's recommendations.

ATTENTION

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-SOCl2) batteries (non-rechargeable), size D. No other batteries are approved for use in SmartLine Wireless Transmitters.

- Xeno Energy XL-205F
- Eagle Picher PT-2300H
- Tadiran TL-5930/s
- Tadiran GmbH, SL-2780 (Not approved by FM or CSA)
- Honeywell p/n 50026010-501 (Two 3.6V lithium thionyl chloride batteries)
- Honeywell p/n 50026010-502 (Four 3.6V lithium thionyl chloride batteries)
- Honeywell p/n 50026010-503 (Ten 3.6V lithium thionyl chloride batteries)

24V Power Supply Option

ELECTRICAL CONNECTION SPECIFICATIONS

The 24V power supply requires 16 Vdc to 28 Vdc, 100 mA max supply connection to the 24V wiring connector terminals. For hazardous location installation, and intrinsic safety entity parameters, refer to the control drawing.

1. The 24V wiring terminals will accept 26 to 12-gauge wiring. The terminals shall be torqued from 0.4 Nm to 0.5 Nm (3.5 to 4.4 lb-in).

(Ordinary Non-Hazardous Locations)

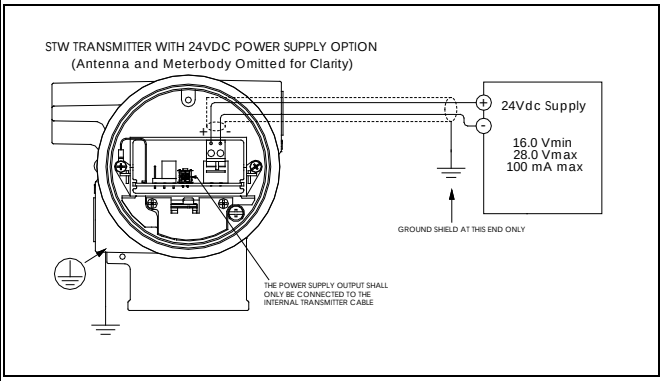

Figure 5: Power Supply 24Vdc Option (DC) System Diagram

STIW400 TEMPERATURE TRANSMITTER CONNECTIONS

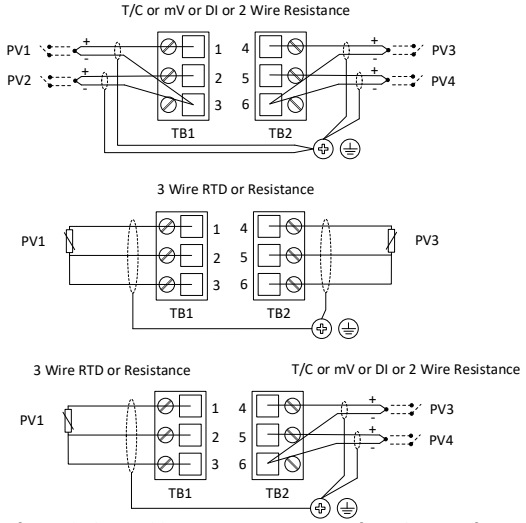

Figure 6: STIW400 Temperature Transmitter Connections

NOTES:

1. The terminals accept 14-26AWG wire, and the screws shall be torqued to 0.4-0.5Nm (3.5 – 4.4 in-lb)
2. Any combination of sensor type inputs is allowed
3. Shielded cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only.
4. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
5. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV and RTD/ohms inputs must be insulated from ground (the probe) and from each other.
6. Digital Input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

STUW750 UNIVERSAL IO TRANSMITTER CONNECTIONS

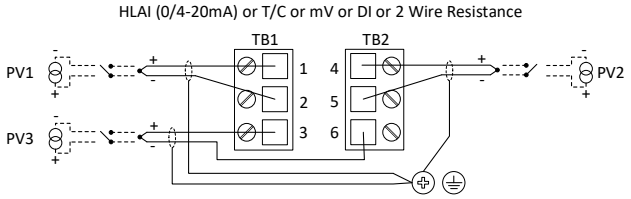

Figure 7: STUW750 Universal Io Transmitter Connections

NOTES:

1. The terminals accept 14-26AWG wire, and the screws shall be torqued to 0.4-0.5Nm (3.5 – 4.4 in-lb)
2. Any combination of sensor type inputs is allowed
3. Shielded cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only. If the shield is grounded at the remote end, the shield shall not be connected at the transmitter end.
4. When remote mounted probe sensors are used, and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
5. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV and RTD/ohms inputs must be insulated from ground (the probe) and from each other.
6. Digital Input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

STUW751 UNIVERSAL IO TRANSMITTER CONNECTIONS

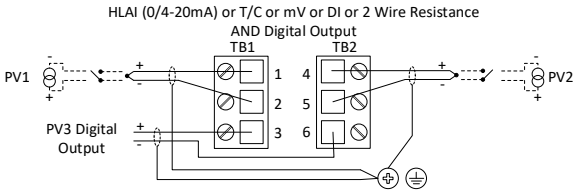

Figure 8: STUW751 Universal Io Transmitter Connections

NOTES:

1. The terminals accept 14-26AWG wire, and the screws shall be torqued to 0.4-0.5Nm (3.5 – 4.4 in-lb)
2. Any combination of sensor type inputs is allowed
3. Shielded cable is required for EMC conformity and is recommended for all remote sensor installations. The shield shall be grounded at the transmitter end only. If the shield is grounded at the remote end, the shield shall not be connected at the transmitter end.
4. When remote mounted probe sensors are used and the shield is grounded at the probe, the shield shall not be connected at the transmitter end.
5. Duplex (redundant) sensors that are bonded to the probe are not permitted. All thermocouple/mV and RTD/ohms inputs must be insulated from ground (the probe) and from each other.
6. Digital Input switches, DI, must be dry contact type, simple apparatus and properly segregated from all other sources of power.

Environmental Conditions

Refer to the specification sheet for performance considerations.

The transmitter operates with an ambient temperature of -40 °C to +85 °C. If installed in a hazardous environment, the maximum ambient temperature may be limited. Refer to the control drawing and the markings on the transmitter nameplate.

Ambient humidity limits are 0 to 100% relative humidity.

The transmitter may be installed indoors or outdoors, with pollution degree 4. The enclosure is rated Type 4X, IP66 / IP67.

The transmitter operates up to an altitude of 2,000 m.

Entry plugs/glands rated for the installation environment are required to be installed on the transmitter.

Maintenance

The SmartLine Wireless Transmitter itself does not require any specific maintenance routine at regularly scheduled intervals, other than changing the batteries as required.

If the transmitter requires repair or replacement parts, please contact your local Honeywell TAC. TAC contact information can be found on the last sheet of this quick start guide.

General Operation

1. INSTALL.
2. ANTENNA. The transmitter can be supplied with an integral 4dBi antenna. If the transmitter is equipped with a remote mount antenna connection, connect the antenna with a RF cable. The transmitter remote mount and antennas utilize N-type connectors.
3. POWER up the transmitter.

   Remove the end cap, opposite the LCD display, to connect power. Ensure the internal power cable is connected to the battery pack or 24V supply module as applicable.

   Once powered, verify that the transmitter LCD is functioning. If the LCD is blank, check the power connections, and batteries as applicable.
4. PROVISION the transmitter to the network
   a. Over The Air (OTA) provisioning can be done using the Wireless Device Manager (WDM) interface.
   b. Handheld provisioning can be done through the IR port with a Handheld Provisioning Device such as MCT404
5. VERIFY that the transmitter connects in the wireless network, and can transmit PVs. This step may take several minutes, depending on your network.
   a. Load the DD file (if not done previously)
   b. Configure the transmitter as desired using the property panel
   c. Configure the channel(s) as desired using the property panel.
   d. Activate the channel(s)
6. CALIBRATE. If required, calibration should only be done after the transmitter is installed in its final location.

EU Declaration of Conformity

A copy of the Smartline Wireless Transmitters EU Declaration of Conformity can be downloaded here:

https://www.honeywellprocess.com/library/support/Public/Documents/50136122.pdf

The Smartline Wireless Transmitters complies with the following directives

DIRECTIVE	DESCRIPTION
2014/53/EU	Radio Equipment Directive
2014/34/EU	ATEX Directive
2014/68/EU	Pressure Equipment Directive (for pressure models)

EMC Conformity

The Smartline Wireless Transmitters complied with the following EMC standards

STANDARD	DESCRIPTION
EN 300 328 V2.1.1	Wideband transmission systems; Data transmission equipment operating in the 2,4GHz ISM band
EN 61326-1: 2013	Electrical equipment for measurement, control and laboratory use - EMC requirements
EN 301 489-1 V2.1.1	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services

Hazardous Locations Certifications

Hazardous location certifications
Refer to product label for applicable approvals and control drawing.

Table B-2 Certifications and Approvals

AGENCY	TYPE OF PROTECTION	Ambient Temperature
CSA (USA and Canada)	**Intrinsically Safe:** Class I; Division 1; Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1; T4 Class I, Zone 0 AEx ia IIC T4 Ga Class I Zone 2 AEx ic IIC T4 Gc Ex ia IIC T4 Ga Ex ic IIC T4 Gc	-40 to +80°C: ia -40 to +85°C: ic
	Non Incendive: Class I; Division 2; Groups A, B, C, D; Class II, Division 2, Groups E, F, G; Class III, Division 2, T6...T5 Ex nA [ia Ga] IIC T6...T5 Gc Class I, Zn 2, AEx nA [ia Ga] IIC T6...T5 Gc	-40°C to +85°C : T5 -40°C to +75°C : T6
	Explosion-Proof/ Flameproof/Dust Proof: Class I, Division 1; Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1; T6...T5 Ex db [ia Ga] IIC T6...T5 Gb Ex tb [ia Da] IIIC T95 Db Class I, Zn 1 AEx db [ia Ga] IIC T6...T5 Gb Class II, Zn 21, AEx tb [ia Da] IIIC T95 Db	-40°C to +85°C : T5 -40°C to +75°C : T6 -40°C to +85°C : T95
	Enclosure: Type 4X/ IP66/ IP67	
	Standards Used: CSA C22.2 No. 0-10, CSA C22.2 No.94.2-15, CSA C22.2 No.213-16, CAN/CSA C22.2 No.60079-1:16, CAN/CSA C22.2 No.60079-31:15 ANSI/UL 60079-1-2015, ANSI/UL 60079-31-2015 FM 3616 – Dec 2011, ANSI/UL 50E-2015 CSA C22.2 No.25-17, CAN/CSA C22.2 No.61010-1-12 CAN/CSA C22.2 No.60529:16, CAN/CSA C22.2 No.60079-11:14 ANSI/ISA 12.12.01-2015, ANSI/UL 60079-11-2014 FM 3600 – Dec 2011, ANSI/IEC 60529 – 2004 ANSI/UL 61010-1-2016 CSA C22.2 No.30-M1986, CAN/CSA C22.2 No.157-92 CAN/CSA C22.2 No.60079-0:15, CAN/CSA C22.2 No.60079-15:16 ANSI/UL 60079-0-2013, ANSI/UL 60079-15-2013 FM 3615 – Aug 2006, ANSI/UL 913-2015	

AGENCY	TYPE OF PROTECTION	Ambient Temperature
FM Approvals TM (USA)	**Intrinsically Safe:** IS Class I, II, III; Division 1; Groups ABCDEFG; T4 Class I, Zone 0 AEx ia IIC Ga T4 Class I, Zone 2[0] AEx ic [ia Ga] IIC Gc T4	-40 °C to +85 °C
	Non Incendive: NI-AIS Class I; DIV 2; Groups ABCD; T5...T6 Class I, Zone 2[0] AEx nA [ia Ga] IIC Gc; T5...T6	-40 °C to +85 °C : T5 -40 °C to +70 °C : T6
	Dust Proof: DIP-AIS Class II, III DIV 1; Groups EFG; T5...T6 Zone 21[20] AEx tb [ia Da] IIIC T95°C Db	-40 °C to +85 °C : T5, T95 -40 °C to +70 °C : T6
	Enclosure: Type 4X/ IP66/ IP67	
	Standards Used: FM 3600:2018, ANSI/ISA 60079-0: 2013 ANSI/ ISA 60079-15: 2013, ANSI/ NEMA 250: 2008 FM 3610: 2018, FM 3810: 2018 ANSI/ ISA 60079-31: 2015 FM 3611: 2018, FM 3616: 2011 ANSI/ ISA 60079-11: 2014, ANSI/ ISA 60529: 2004	

AGENCY	TYPE OF PROTECTION	Ambient Temperature	
ATEX	Intrinsically Safe: II 1 G Ex ia IIC T4 Ga II 3 G Ex ic IIC T4 Gc	-40 to +80°C: ia -40 to +85°C: ic	
	Flameproof / Dust Proof: II 2[1] G Ex d [ia Ga] IIC T6...T5 Gb II 2[1] D Ex tb [ia Da] IIIC 95C Db	-40°C to +85°C : T5 -40°C to +75°C : T6	
	Non Incendive: II 3[1] G Ex ec [ia Ga] IIC T6...T5 Gc	-40°C to +85°C : T5 -40°C to +75°C : T6	
	Enclosure: IP66/ IP67		
	Standards Used: EN 60079-0 : 2012 + A1:2013	EN 60079-1 : 2014 EN 60079-7 : 2015	EN 60079-11 : 2012 IEC 60079-31 2013

AGENCY	TYPE OF PROTECTION	Ambient Temperature	
IECEx	**Intrinsically Safe:** Ex ia IIC T4 Ga Ex ic IIC T4 Gc	-40 to +80°C: ia -40 to +85°C: ic	
	Flameproof / Dust Proof: Ex db [ia Ga] IIC T6...T5 Gb Ex tb [ia Da] IIIC Db T95C	-40°C to +85°C : T5 -40°C to +75°C : T6	
	Non Incendive: Ex ec [ia] IIC T6..T5	-40°C to +85°C : T5 -40°C to +75°C : T6	
	Enclosure: IP66 /IP67		
	Standards Used: IEC 60079-0 : 2017	IEC 60079-1 : 2014 IEC 60079-7 : 2015	IEC 60079-11 : 2011 IEC 60079-31 : 2013

Conditions of Certification

FM Approval Specific Conditions of Use

1) For Zone 2 installation with the 24V Power Supply, the installer shall provide transient over-voltage protection external to the equipment such that the voltage at the supply terminal of the equipment does not exceed 140% of the voltage rating of the equipment.
2) The enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be considered during installation and use to prevent impact or friction.
3) Painted surface of the enclosure may store electrostatic charge and become a source of ignition in applications with a low relative humidity less than approximately 30% relative humidity where the painted surface is relatively free of surface contamination such as dirt, dust or oil. Cleaning of the painted surface should only be done with a damp cloth.

CSA, IECEx and ATEX Conditions of Certification

1) Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
2) The enclosure is manufactured from low copper aluminum alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in a zone 0 location.

Apparatus Marked with Multiple Types of Protection

The user must determine the type of protection required for installation of the equipment. The user shall then check the box [□] adjacent to the type of protection used on the equipment certification nameplate. Once a type of protection has been checked on the nameplate, the equipment will not be reinstalled using any of the other certification types.

Radio Compliance Information

The SmartLine Wireless pressure transmitter uses a low powered ISA100 2.4GHz radio to communicate with the Radio Infrastructure and Gateway devices that are connected to a wired DCS network. The wireless transmit power is set at the factory depending on the destination country. The combination of allowed transmit power and antenna gains result in a maximum EIRP of 26 dBm = 398 mW transmitted power. This power is limited depending on destination country.

Table B4: Radio Certifications

Agency	Certification	Description
Federal Communications Commission (FCC)	FCC ID: S5751454941	The SmartLine Wireless Transmitters comply with part 15 of the FCC rules. 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.
Industry Canada (IC)	IC: 573WI-51454941	The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF fields in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's web site www.hc-sc.gc.ca/rpb.
CE		The SmartLine wireless transmitter has been assessed and is in compliance with the Radio Equipment Directive (RED) 2014/53/EU.

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.

- Remote Point-to-Multi-Point antenna(s) for this unit must be fixed and mounted on outdoor permanent structures with a separation distance between the antenna(s) of greater than 20cm and a separation distance of at least 20cm from all persons.
- Remote Fixed Point–to-Point antenna(s) for this unit must be fixed and mounted on outdoor permanent structures with a separation distance between the antenna(s) of greater than 20cm and a separation distance of at least 100cm from all persons.
- Furthermore, when using integral antenna(s) the SmartLine Wireless Transmitter unit must not be co-located with any other antenna or transmitter device and have a separation distance of at least 20cm from all persons.

European Union restriction

The SmartLine Wireless Transmitters are in conformity with the applicable standards as required by the Radio Equipment Directive (RED) 2014/53/EU.

ATTENTION
SmartLine Wireless units must be professionally installed

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 own expense.
- Intentional or unintentional changes or modifications must not be made to the SmartLine Wireless Transmitters 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.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information.
If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Sales and Service

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

ASIA PACIFIC (TAC) hfs-tac-support@honeywell.com
Australia Honeywell Limited, Phone: +(61) 7-3846 1255, FAX: +(61) 7-3840 6481
Toll Free 1300-36-39-36, Toll Free Fax: 1300-36-04-70
China – PRC – Shanghai, Honeywell China Inc. Phone: (86-21) 5257-4568, Fax: (86-21) 6237-2826
Singapore, Honeywell Pte Ltd. Phone: +(65) 6580 3278. Fax: +(65) 6445-3033
South Korea, Honeywell Korea Co Ltd. Phone:+(822)799 6114. Fax:+(822) 792 9015

EMEA, Phone: + 80012026455 or +44 (0)1202645583. FAX: +44 (0) 1344 655554
Email: (Sales) sc-cp-apps-salespa62@honeywell.com
or (TAC) hfs-tac-support@honeywell.com

AMERICAS, Honeywell Process Solutions,
Phone: (TAC) 1-800-423-9883 or 215/641-3610. (Sales) 1-800-343-0228.
Email: (Sales) FP-Sales-Apps@Honeywell.com
or (TAC) hfs-tac-support@honeywell.com

For more information
To learn more about SmartLine Transmitters,
visit www.honeywellprocess.com
Or contact your Honeywell Account Manager

Process Solutions
Honeywell
1250 W Sam Houston Pkwy S
Houston, TX 77042

Honeywell Control Systems Ltd
Honeywell House, Skimped Hill Lane
Bracknell, England, RG12 1EB

Shanghai City Centre, 100 Jungi Road
Shanghai, China 20061

www.honeywellprocess.com

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