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Казахстан +7(7172)727-132

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сайт: www.honeywell.nt-rt.ru || эл. почта: hwn@nt-rt.ru

БЕСПРОВОДНЫЕ ДАТЧИКИ

Технические характеристики

на XYR 6000 STUW700, XYR 6000 STUW701



XYR 6000 Wireless Universal I/O Transmitter – Multi AI/DI/DO

Specification and Model Selection Guide

Models:

STUW700 with HLAI, T/C and Discrete Input Capability Model

STUW701 with HLAI, T/C and Discrete Input and Output Capability

Introduction

Save time and money by eliminating the manual reading of field devices and by avoiding the cost of installing long runs of cable by using the XYR 6000 Wireless Universal I/O transmitter. In addition, improve monitoring capabilities by automating the collection of information from remote field devices with a flexible I/O transmitter that are either difficult or cost-prohibitive to reach.

The XYR 6000 Universal I/O transmitter was built on the tremendously successful ST 3000 series transmitter line. The two wireless universal I/O models include the STUW700 and STUW701.

The STUW700 Universal I/O Transmitter supports a total of three inputs which can be a combination of 1 to 3 high level analog inputs (0-20 mA/4- 20 mA) or 1 to 2 thermocouple inputs or 1 to 2 discrete inputs.

The STUW701 Universal I/O transmitter supports two inputs, which can be a combination of 1 to 2 high level analog inputs (0-20 mA/4-20 mA) or 1 to 2 thermocouple inputs or 1 to 2 discrete inputs plus one discrete output.

The XYR 6000 Wireless Universal I/O transmitter is a part of a broad series of transmitters under the XYR 6000 line of wireless products. Using XYR 6000 wireless transmitters, customers can obtain data to create information from remote and hazardous measurement locations without the need to run wires, where running wire can be cost prohibitive and/or difficult if the measurement is in a hazardous location. Without wires, transmitters can be installed and operational in minutes, quickly providing information back to your system.

The XYR 6000 Universal I/O transmitter is part of the Honeywell OneWireless system and are ISA100.11a compliant.

Each XYR 6000 transmitter is battery powered by two long-life "D" size lithium batteries. These batteries have an expected lifetime of up to ten years. Transmitter range with the integral antenna is 1,000 ft. (305 m) line of site (LOS) under ideal conditions.

XYR 6000 wireless transmitters send information to a ISA100.11a compliant MESH infrastructure. Wireless Data Managers (WDM) provides the path to bring that information into Experion PKS or any other control system wirelessly via OPC client or Modbus-TCP.



Figure 1—XYR 6000 Universal I/O Transmitters

Implement the value of wireless technology today:

- Measure remote access points simply, safe and securely
- Obtain and utilize previously inaccessible information due to high wiring cost or hazardous locations.
- Easily meet regulatory requirements
- Improve process efficiency
- Increase productivity by eliminating manual field readings of instruments

Specifications

Operating Conditions

Parameter	Reference Condition (at zero static)		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C			°F		°F
Ambient Temperature**	25 ±1	77 ±2	-40 to 85*	-40 to 185*	-40 to 85*	-40 to 185*	-40 to 8	-40 to 18
Humidity (%RH)	10 to 55		0 to 100		0 to 100		0 to 100	
Ambient Temperature LCD Display Visible Range	25 ±1	77 ±2	-40 to 85° -40 to 185°F					
Vibration	Maximum of 4g over 15 to 200 Hz							
Shock	Maximum of 40g							
Power	Battery powered 3.6V Lithium thionyl chloride (LiSOCl ₂) batteries non rechargeable, size D 24 VDC Wired Power (option) - For I.S. Application: 21 V to 25 VDC Operated with MTL7728P+ barrier (252 Ohms Max. end to end resistance), Max input current 26 mA For Non I.S. application: 11 V to 30 VDC Input range, Max input current 100 mA							

*24V power option rated 80°C (176°F)

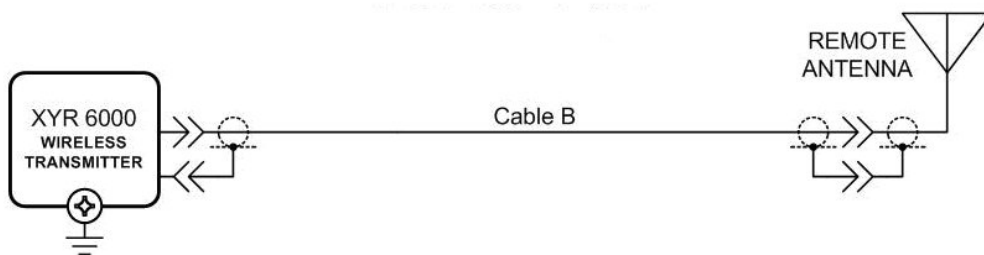
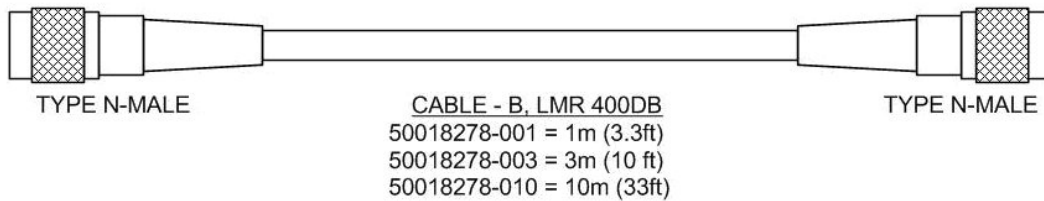
** The ambient limits shown are for ordinary non-hazardous locations only. Refer to the appropriate control drawing, FM/CSA, ATEX, or IECEx for the ambient limits when installed in hazardous locations.

Wireless Specifications

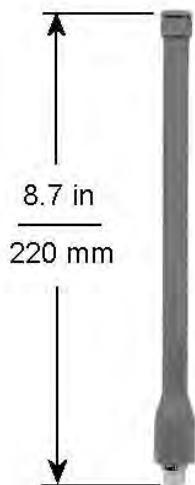
Parameter	Description
Wireless Communication	2,400 to 2,4835 MHz (2.4 GHz) Industrial, Scientific and Medical (ISM) band DSSS Selection – Direct Sequential Spread Spectrum per FCC 15.247 / IEEE 802.15.4–2006. ISA100.11a Compliant (2.4 GHz Direct Sequence Spread Spectrum 802.15.4 DSSS-FH) Every data packet 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 Japan – Ministry of Internal Affairs and Communications Certified (DSSS Selection only)
ISA100.11a RF Transmitter Power (Optional)	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. JP Selection – 12.14 dBm/MHz [32mW (15.14 dbm)] maximum EIRP including antenna for Japanese locations.
DSSS RF Transmitter Power (Optional)	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. JP Selection – 12.14 dBm/MHz [32mW (15.14 dbm)] maximum EIRP including antenna for Japanese locations.
Data	PV Publish Cycle Time: Configurable as 1, 5, 10 or 30 seconds Rate: 250 Kbps

Parameter	Description
Antennas	Integral – 2 dBi omnidirectional monopole Integral – 4 dBi omnidirectional monopole Remote – 8 dBi omnidirectional monopole with up to 20 m cable and lightning surge arrester Remote – 14 dBi directional parabolic with up to 20 m cable and lightning surge arrester
Signal Range*	Nominal 305 m (1,000 feet) between field transmitter and infrastructure unit (Multinode) or gateway unit when using 2 dBi integral antenna with a clear line of sight* Two XYR 6000 transmitters both having TX Power set to 16 dBm with a clear line of site nominal signal range is 150 m (490ft.)
Routing vs Non-Routing	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.

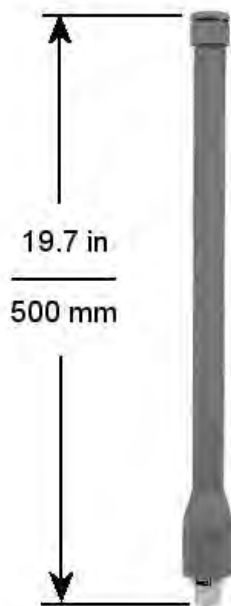
* Actual range will vary depending on antennas, cables and site topography.



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



4 dBi Omnidirectional Antenna



8 dBi Omnidirectional Antenna



14 dBi Directional Antenna

Performance under Rated Conditions

Parameter	Description
Accuracy	+/-0.10% of range in mV at reference conditions for linear inputs
Temperature Effects	+/-0.01% of full scale per deg C
Stability	+/-0.10% of URL per year
Cold Junction Accuracy	+/-0.5 deg C
Stray Rejection	Common Mode (50 or 60 Hz): 120 dB Normal Mode (50 or 60 Hz): 40 dB
Maximum Lead Wire Resistance	50 ohms/leg for all analog input types
Discrete Input	Single SPST dry contacts. To maintain I.S. ratings, contacts must be limited to simple switches only. Maximum "ON" contact resistance of 300 Ohms, Minimum "OFF" contact resistance of 100K Ohms. Resistances must include all field wiring.
Discrete Output	AC/DC Voltage Supply 30 V max Load current = 0.5 A max
4-20 mA Input Loop Resistance	24.9 Ohms
Battery Life with Digital Output	50% Duty cycle - Approximately 1 year
Lightning Surge Arrester (Remote antenna only)	Frequency range: 0 – 3 GHz, 50 Ohms, VSWR = 1:1.3 Max, Insertion Loss = 0.4 dB Connectors Type N Female, Max, Gas Tube Element: 90 V ± 20%, Impulse Breakdown Voltage = 1,000 V ± 20%, Maximum Withstand Current = 5 KA
CE Conformity	These transmitters conform with the protection requirements of European Council Directives: 89/336/EEC, the EMC Directive and 1999/5/EC, the Telecommunications Directive per EN 300 328, V1.6.1 (2004-11), EN 300 489-1, V1.6.1 (2005-09), EN 300 489-3, V1.4.1 (2002-08) and EN 61326-1997+A1+A2, Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements
Hazardous Location Certifications	See the Model Selection Guide on page 7

Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, and 10 to 55% RH.

Physical Specifications

Parameter	Description
Mounting Bracket	Carbon Steel (Zinc-plated) or Stainless Steel angle bracket or Carbon Steel flat bracket available (standard options).
Terminal Assembly Wiring Gauge Range	28 to 16
Electronic Housing	Epoxy-Polyester hybrid paint. Low Copper-Aluminum. Meets NEMA 4X (hosedown and corrosion resistant), IP 66/67 (hosedown and submersible to 1m).
Stainless Steel Housing (option)	316 SS Electronics Housing - with M20 Conduit Connections 316 SS Housing with 1/2" NPT Conduit Connection 316 SS or Grade CF8M, the casting equivalent of 316 SS with M20 or 1/2" NPT Conduit Connection. If ordered with the Remote Antenna options, the antenna parts are not SS or Marine type cables; the integral antenna uses SS parts.
Mounting	Can be mounted in virtually any position using the standard mounting bracket. Mounting should result in the antenna being vertically oriented. Bracket is designed to mount on 2-inch (50 mm) vertical or horizontal pipe. See Figure 3.
Dimensions	See Figure 4
Net Weight	Approximately 9 pounds (4.1 Kg)

STUW700

The Universal I/O transmitter can be configured using the wireless system's user interface channel instantiation capability, for the following channel I/O combinations, according to model number.

Channel 1	Channel 2	Channel 3
DI		HLAI
DI	HL	HLAI
DI	T/C or mV	HLAI
HLAI		HLAI
HLAI		HLAI
HLAI	T/C or mV	HLAI
T/C or mV	DI	HLAI
T/C or mV	HLAI	HLAI
T/C or mV	T/C or mV	HLAI

STUW701

Channel 1	Channel 2	Channel 3
DI		DO
DI	HL	DO
DI	T/C or mV	DO
HLAI		DO
HLAI		DO
HLAI	T/C or mV	DO
T/C or mV	HLAI	DO
T/C or mV	DI	DO
T/C or mV	T/C or mV	DO

- Up to 2 T/C, millivolt or DI (contact closure) channels
- Channel 3 must be HLA I (STUW700) or DO (STUW701)
- T/C and millivolt ranges
 - Thermocouple (B, E, J, K, N, R, S, T) (*all models*)
 - mV (0 to 10, 0 to 50, 0 to 100) (*all models*)
- HLA I input ranges
 - Current only (0-20 mA, 4-20 mA) (*all models*)

The transmitter measures the analog signal from temperature sensors, discrete inputs, millivolt or high-level analog inputs and transmits a digital output signal proportional to the measured value for direct digital communications with systems.

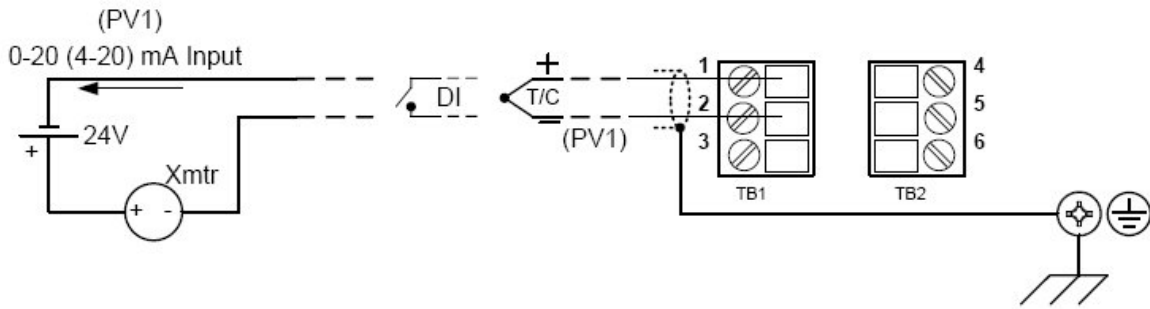
TC & mV Input Types and Ranges

Input Type	Range Deg F	Range Deg C
Type B T/C	0 to 3000	-18 to 1816
Type E T/C	-454 to 1832	-270 to 100
Type J T/C	0 to 1600	-18 to 87
Type K T/C	0 to 2400	-18 to 1333
Type N T/C	0 to 2372	-18 to 1300
Type R T/C	0 to 3100	-18 to 1704
Type S T/C	0 to 3100	-18 to 1704
Type T T/C	-300 to 700	-18 to 37

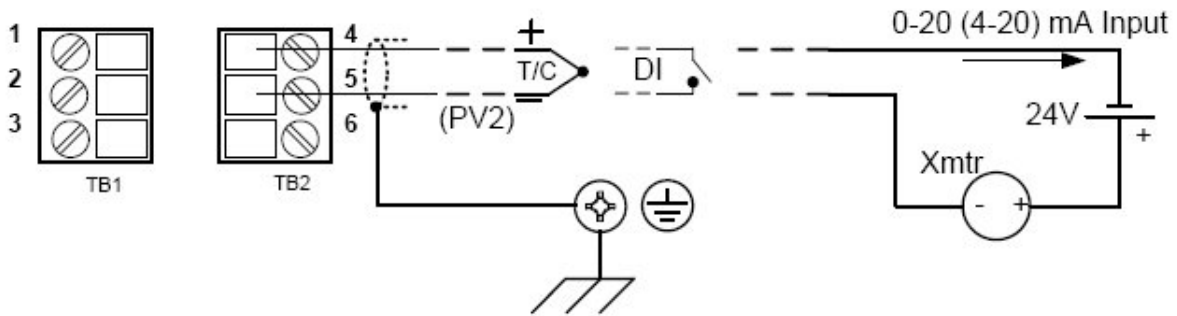
Linear Ranges
0 to 10 mV
0 to 50 mV
0 to 100 mV
High Level Analog Input Ranges
0 to 20 mA / 4-20 mA
Discrete Input
300 Ohms Max ON Contact Resistance
100K Ohms Minimum OFF Contact Resistance

Wiring for calibration – XYR 6000 Universal I/O Wiring Diagrams for AI/DI (Model STUW700)

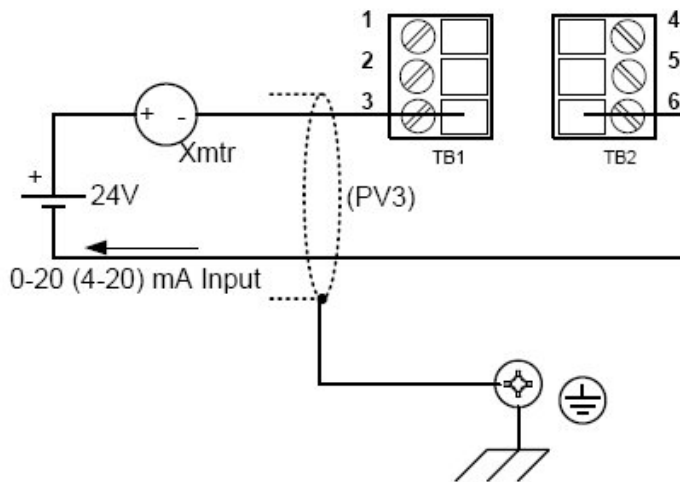
**PV1 Possible Connections
T/C, DI or HLAI**



**PV2 Possible Connections
T/C, DI or HLAI**



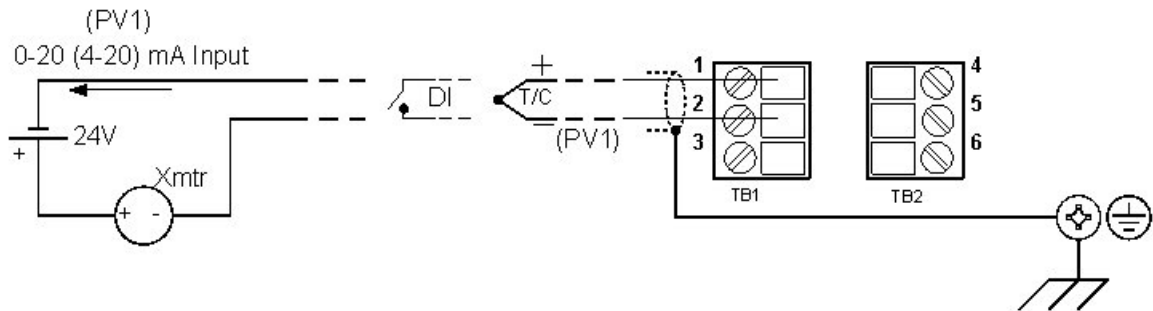
**PV3 Possible Connections
(HLAI only)**



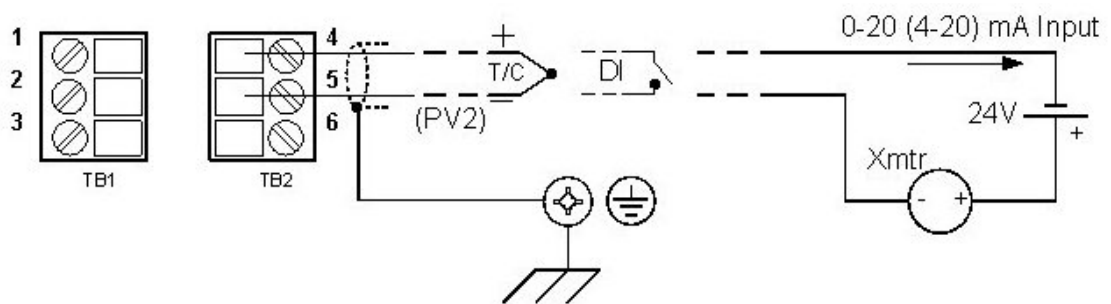
Note: any combination of the above are allowed.
 For example: PV1 is a DI, PV2 is 4-20 mA, and PV3 is 0-20 mA.
 Or PV1 is 0-20 mA, PV2 is a T/C, PV3 is 0-20 mA

Wiring for calibration – XYR 6000 Universal I/O Wiring Diagrams for AI/DI/DO (Model STUW701)

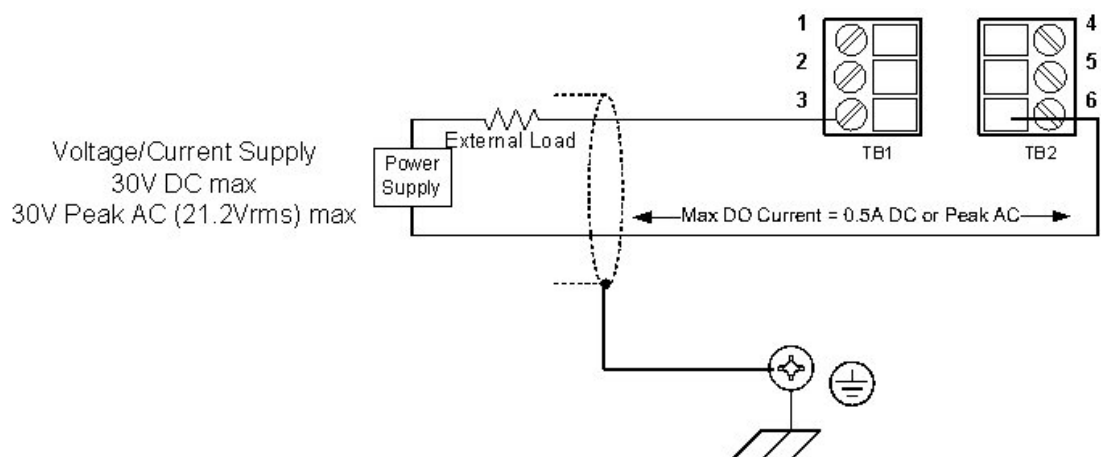
PV1 Possible Connections T/C, DI or HLAI



PV2 Possible Connections T/C, DI or HLAI



PV3 Possible Connections (DO only)



Note: any combination of the above are allowed.
For example: PV1 is a DI, PV2 is 4-20 mA, and PV3 is DO.
Or PV1 is 4-20 mA, PV2 is a T/C, PV3 is DO.

Mounting

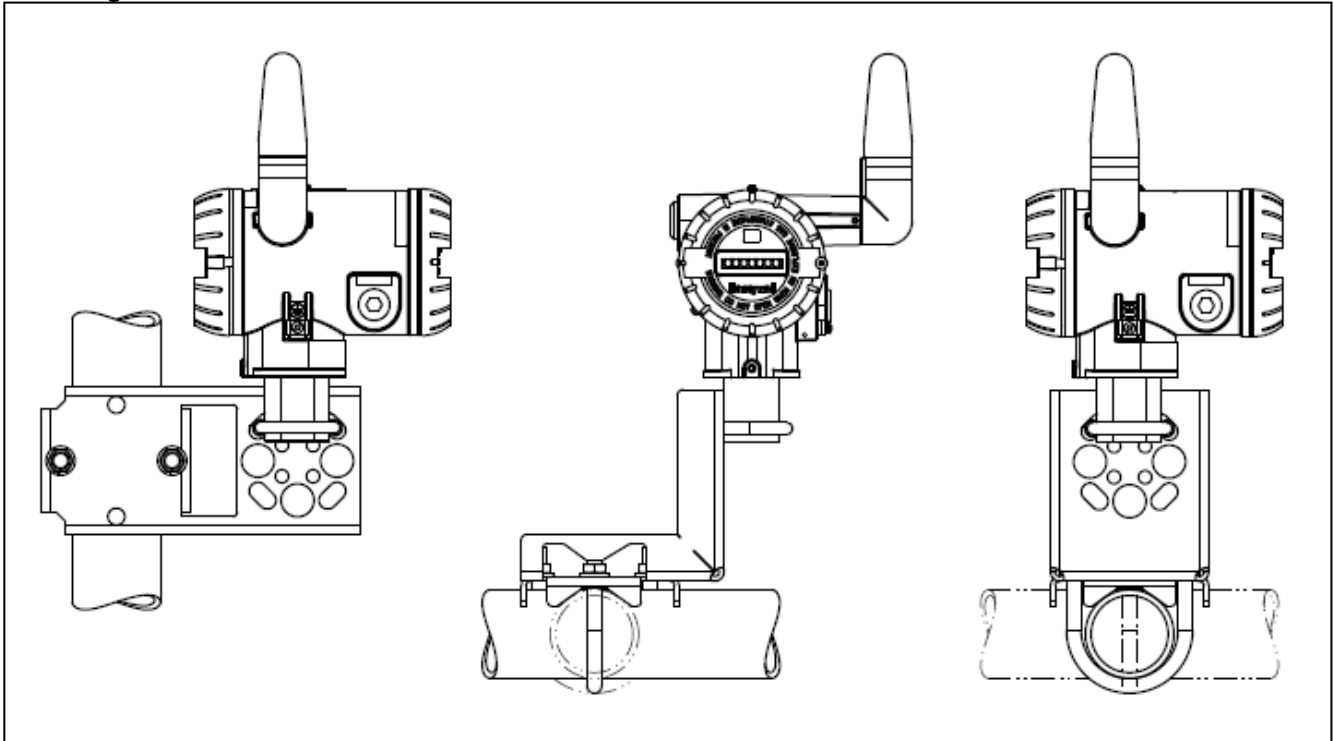


Figure 3—Examples of typical mounting positions

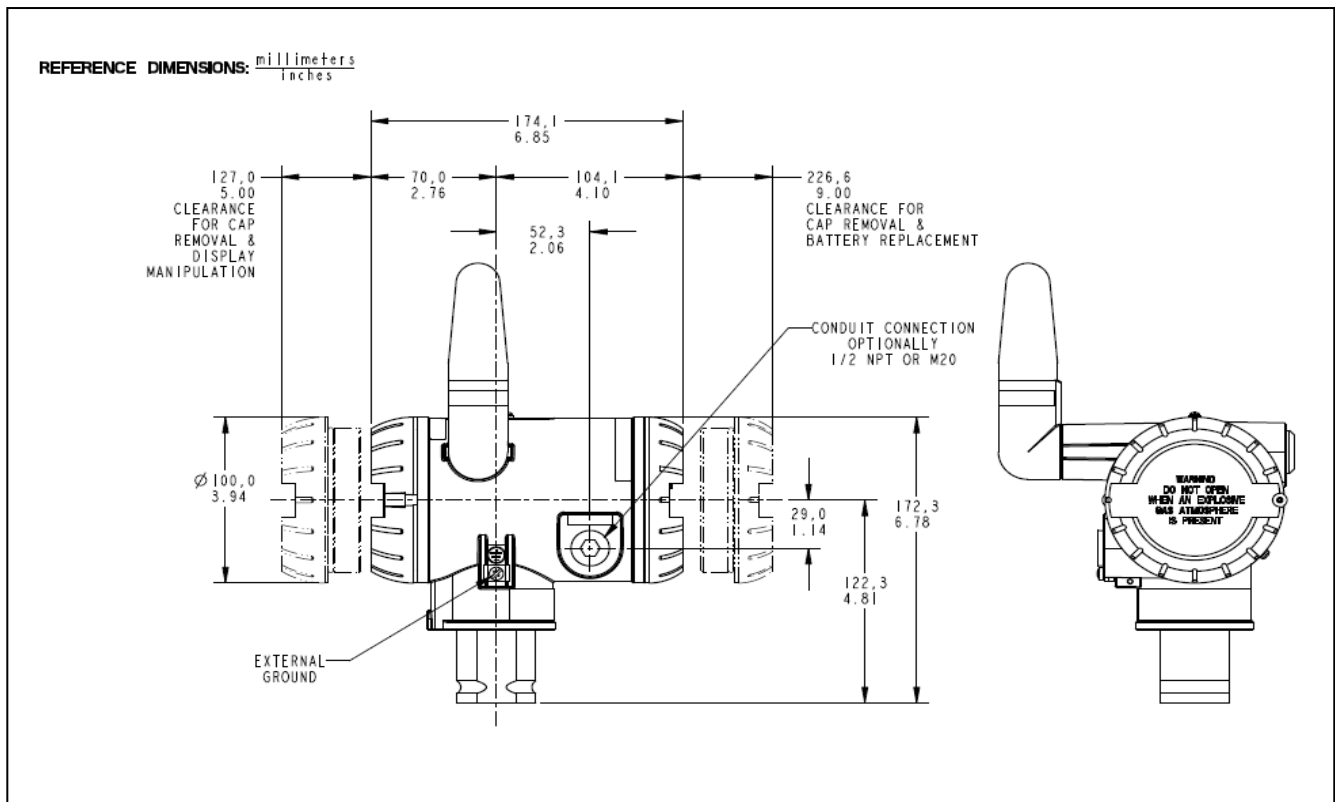


Figure 4—Typical mounting dimensions for reference

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