

PCU-X00 Repeater

Description

Syscor's WirelessHART PCU-X00 Repeater was developed and qualified, in close cooperation with the petroleum industry, as a network bridge between WirelessHART devices. This intrinsically safe device allows a WirelessHART network to expand its effective range, overcoming significant distance or obstruction challenges.



Applications

A PCU-X00 mounted on the rim of a floating roof storage tank creates a strong network pathway between the devices inside the tank (on the floating roof) and the WirelessHART Gateway located in an electrical shed nearby.

A wireless mesh network with poor path stability due to a lack of RF line of sight caused by metallic equipment or infrastructure benefits from having a PCU-X00 installed in an optimal location.

Power

The PCU-X00 is powered by a Syscor 841 or 902 battery pack. Both of these packs contain high energy density lithium thionyl chloride (Li-SOCl₂) cells. Low self-discharge provides 10+ years of reliable and predictable power, depending on the update rate.

Installation

The Repeater can attach directly to equipment or structures with Syscor's Universal Mounting Bracket. No hot work is required. Optional bracket magnets can be used on flat steel surfaces.

WirelessHART Communication

The Repeater utilizes the industry standard WirelessHART protocol, which accounts for roughly 30% of the industrial wireless sensing market.* Data is transmitted from the WirelessHART Gateway to the facility's DCS/SCADA using standard industrial interfaces and protocols. WirelessHART (IEC 62591) is a secure, full mesh technology capable of self-forming, healing, and scaling.

* <https://www.controlglobal.com/articles/2019/arc-report-details-growth-of-fspan-stylefont-size-x-smallfoundationspan-fieldbus-hart-and-emwirelesshart/>

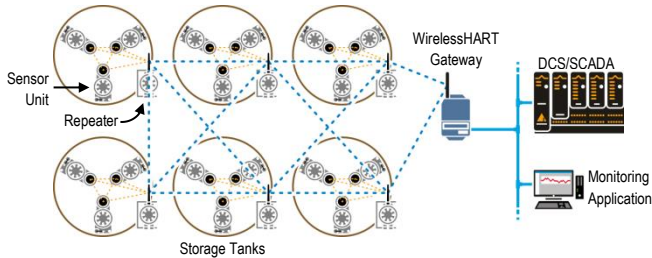


Figure 1. Repeater for FR-Tracker 2.0 safety system

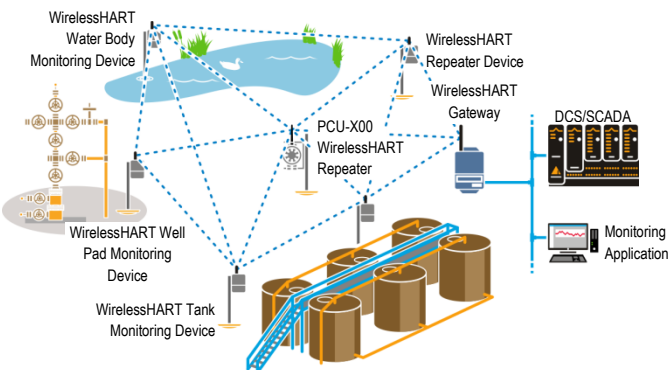
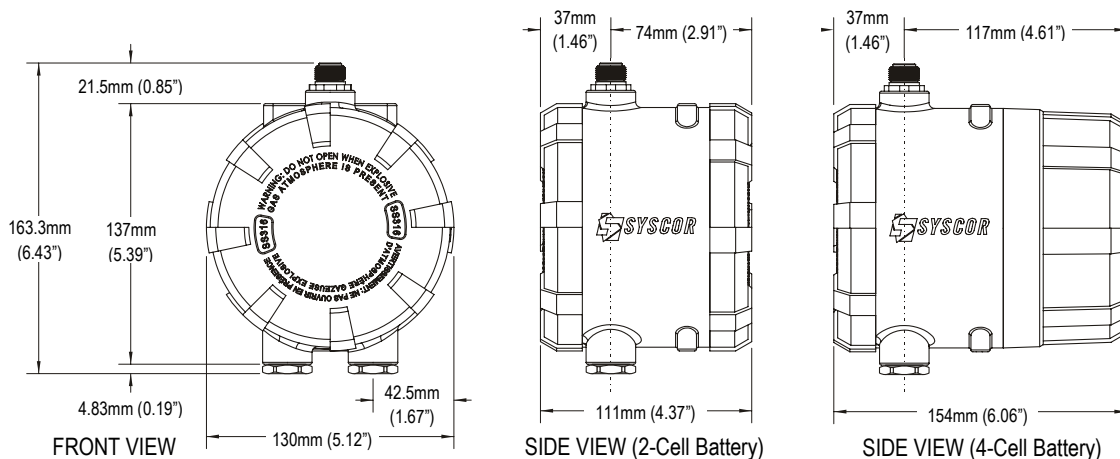


Figure 2. Repeater for WirelessHART field devices



Specifications

Functional Specifications

Internal Sensors	Electronics temperature
Wireless.	WirelessHART IEC 62591 2.4 GHz DSSS
Wireless Data Update Rate	User-selectable; 5 seconds to 1 hour
Power Supply (Battery Pack)	<p>Mo Models available for use:</p> <ul style="list-style-type: none"> - Model 841 Battery Pack: 2-cell, 7.2V 19.0Ah 136.8Wh (recommended for the PCU-X00) - Model 902 Battery Pack: 4-cell, 7.2V 38.0Ah 273.6Wh <p>Battery packs are Li-SOCl₂, field replaceable, Intrinsically Safe, and have 10+ years of battery life depending on application and update rate.</p>
Communication	Maintenance Port for communication with HART field communicator

Physical Specifications

Enclosure	Stainless steel SS316. IP67, Type 4X
Antenna Port	N-Type female
Weight	3.75kg [8.3lbs.]
Mounting Options	Universal Mounting Bracket with 2" or 5" U-bolt

Performance Specifications

Electronics Temperature	Integrated circuit sensing elements embedded inside, provide up to +/- 1°C [1.8°F]
Operating Temp.	-40°C to +60°C [-40°F to +140°F]

Certifications

USA	<p>FCC: 2AAZE-000697</p> <p>Intrinsic Safety: CSA 19CA70174889X Class I, Division 1, Groups C and D, T4 Class I, Zone 0 AEx ia IIB T4 Ga</p>
Canada	<p>IC: 11413A-000697</p> <p>Intrinsic Safety: CSA 19CA70174889X Class I, Division 1, Groups C and D, T4 Ex ia IIB T4 Ga</p>
Europe	<p>Intrinsic Safety: SIRA 18ATEX2249X Ex ia IIB T4 Ga CE₂₈₁₃</p>
IECEX	<p>Intrinsic Safety: IECEX CSA 18.0031X Ex ia IIB T4 Ga</p>

Learn More

Field Transmitter Battery Packs	syscor.com/downloads/BATTERY01DDS_FT Batteries.pdf
Antennas	syscor.com/products/antennas
Universal Mounting Bracket	syscor.com/downloads/BRACKET02DDS_UniversalMountingBracket.pdf
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