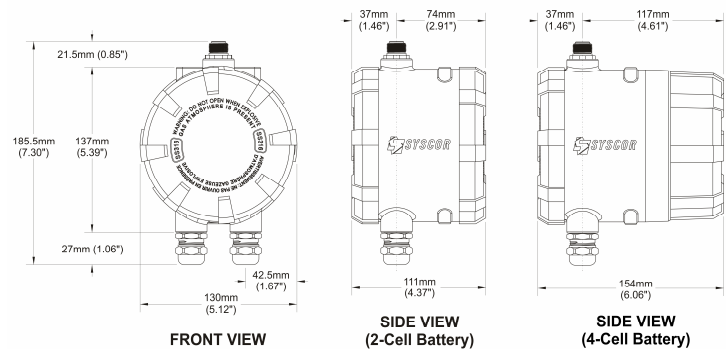


PCU-X01 Sensor Hub

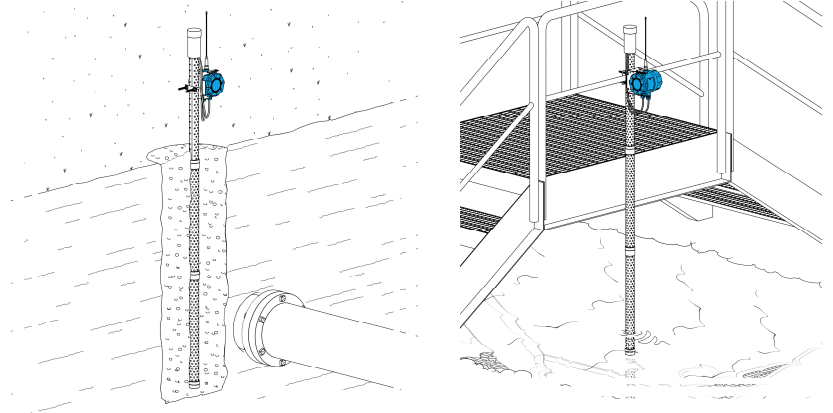


Description

Syscor's WirelessHART PCU-X01 Sensor Hub was developed and qualified, in close cooperation with the petroleum industry, as a versatile platform for facility integrity monitoring. The Intrinsically Safe Sensor Hub provides power and communication to Syscor's standardized HCD and HCDW sensor probes.

Applications

The solution targets monitoring applications underground, in water bodies, and on equipment, such as sumps, tank mixers, piping flanges, vessel inlet/outlet piping, tank drains, interstitial spaces, outflow piping, and many others.



Power

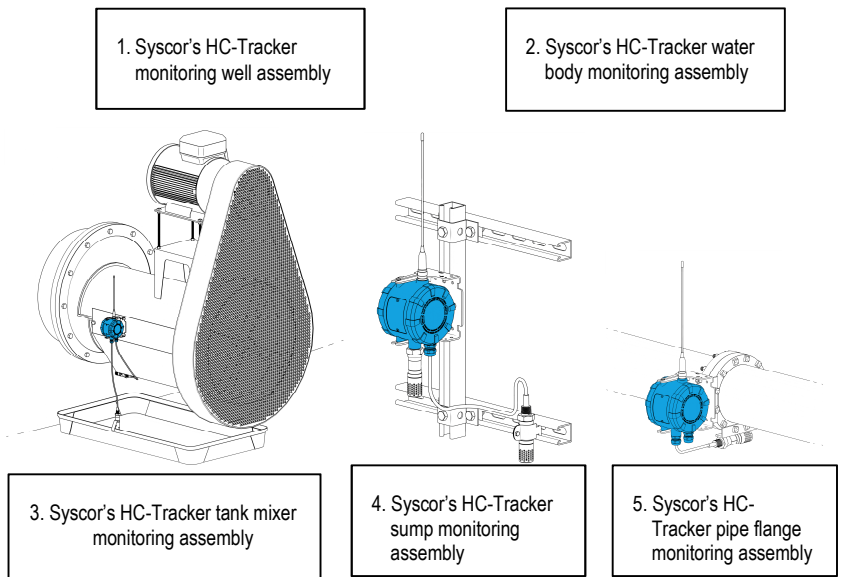
The Sensor Hub and sensor probes are powered by Syscor's 841 and 902 Battery Packs that contain high energy density lithium thionyl chloride (Li-SOCl₂) cells. Low self-discharge provides up to 10 years of reliable and predictable power, depending on the update rate.

Installation

Syscor's Universal Mounting Bracket can directly attach the Sensor Hub to struts, tubing, or equipment. No hot work is required. Optional bracket magnets can be used on flat steel surfaces.

Sensor Probes

Syscor's field replacable sensor probes can attach directly to the Sensor Hub or with a supplied cable for remote applications.*

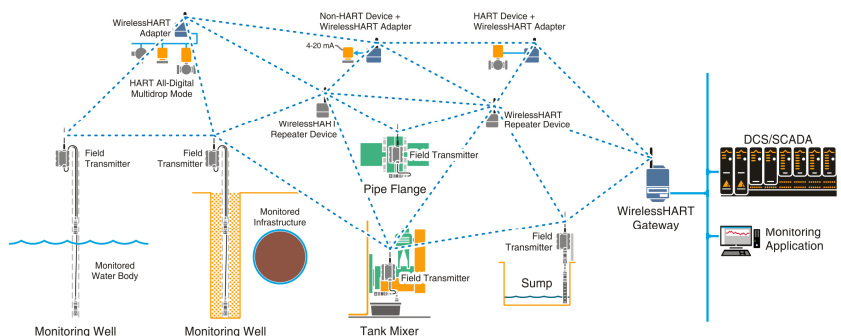


WirelessHART Communication

The Sensor Hub 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 industry standard interfaces. WirelessHART (IEC 62591) is a secure, full mesh technology capable of self-forming, healing, and scaling.

*See "Specifications-External Sensors" (p. 2) for intrinsically safe operation of sensor probes and cable.

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



Specifications

Functional Specifications	
Internal Sensors	Temperature, vibration
*External Sensors and Intrinsically Safe Operation	Syscor's HCD and HCDW sensor probes connect directly to the Sensor Hub via 1/2in. NPT port or can be mounted remotely with cable. <i>*Intrinsically Safe Operation: If one sensor probe is used, total cable length for intrinsically safe operation cannot exceed 10.05m (33ft.). If two sensor probes are used, total combined cable length for intrinsically safe operation cannot exceed 10.05m (33ft.).</i>
Wireless Comm.	WirelessHART IEC 62591 2.4 GHz DSSS
Wireless Data Update Rate	User-selectable; 1 minute to 1 hour

Physical Specifications

Power Supply	Field replaceable, Intrinsically Safe, Li-SOCl ₂ battery pack; up to 10 yr. battery life depending on application and update rate. 841 Battery Pack: 7.2V 19.0Ah 136.8Wh 902 Battery Pack: 7.2V 38.0Ah 273.6Wh Enclosure: Fully potted, ABS plastic
Communication	Maintenance Port for communication with HART field communicator
Enclosure	Housing: Stainless steel SS316
Antenna Options 2.4-2.5 GHz	<ul style="list-style-type: none"> Omni-directional, 5dBi, Laird FG25005, 349.25mm (13-3/4in.), N-type female, straight Omni-directional, 4.26dBi, Taoglas FW.24.NTY.M, 316mm (12.44in.), flexible whip monopole, N-type male, straight Right Hand Circular Polarization (RHCP) antenna, 4.93dBi, Taoglas WTSP.2400.25.4.40, 25 mm (0.98in.) Omni-directional, 8dBi, Taoglas OMB.242.08F21, 523mm (20.59in.), N-type female connector, straight Optional lightning arrestors are available
Antenna Port	N-Type female
Sensor Probe Ports	1/2in. NPT
Sensor Wiring Connections	Screw terminals for 4x1 conductor 20 AWG tinned copper wire
Weight	3.75kg [8.3lbs]
Mounting Options	Universal Mounting Bracket with optional magnets

Performance Specifications

Electromagnetic Compatibility	Meets all relevant requirements of EN 62479:2010 and EN-61326-1:2013
Vibration and Acceleration	Ultra-low-power, high performance, three-axis linear accelerometer; Dynamically selectable range from 0g to 16g; Acceleration and velocity detection
Temp. Sensor	8 bit resolution; worst case accuracy $\pm 2^{\circ}\text{C}$ [3.6°F]
Operating Temp.	-40°C to +60°C [-40°F to +140°F]

*Product Certifications

Note: Certifications apply to the complete system (Field Transmitter (IP67, Type 4X) + sensor probes (IP68, Type 4X))

USA	FCC: 2AAZE-000697 Intrinsic Safety: [CSA] 70174889 Class I, Division 1, Groups C and D, T4 Class I, Zone 0 AEx ia IIB T4 Ga
Canada	IC: 11413A-000697 Intrinsic Safety: [CSA] 70174889 Class I, Division 1, Groups C and D, T4 Ex ia IIB T4 Ga
Europe	Intrinsic Safety: [SIRA] 18ATEX2249X Ex ia IIB T4 Ga CE ₀₅₁₈

Learn More

Hydrocarbon Detector (HCD) Sensor Probe	https://www.syscor.com/downloads/HCD01DDS_HCD-Sensor_2.1.0.pdf
Hydrocarbon Detector with Water Level (HCDW) Sensor Probe	https://www.syscor.com/downloads/HCDW01DDS_HCDW-Sensor_2.1.0.pdf
Field Transmitter Battery Packs	https://www.syscor.com/downloads/BATTERY01DDS_FT Batteries_2.1.0.pdf
Antennas	https://www.syscor.com/products/antennas
Universal Mounting Bracket	https://www.syscor.com/downloads/BRACKET02DDS_UniversalMountingBracket_2.1.0.pdf
Floating Roof Bracket	https://www.syscor.com/downloads/BRACKET01DDS_FRMountingBracket_2.1.0.pdf
Swivel Base	https://www.syscor.com/downloads/FRTRACK01DSS_ASTSwivelBase_2.1.0.pdf
Stackable Monitoring Well	https://www.syscor.com/downloads/TUBING01DDS_SMonitoringWell_2.1.0.pdf
Instrumentation Cable	https://www.syscor.com/downloads/CBL01DDS_4x1-Cable_2.1.0.pdf
Monitoring Software	https://www.syscor.com/products/software
PCU-X01 Sensor Hub	http://www.syscor.com/downloads/PCU01DDS_WIHART-Sensor_Hub_2.1.0.pdf