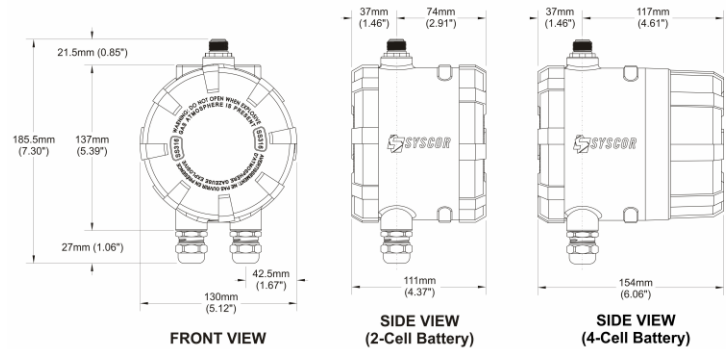


PCU-X01 Sensor Hub



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 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 replaceable 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-ispant-stylefont-size-x-smalloundationspan-fieldbus-hart-and-emwirelessmhart/>

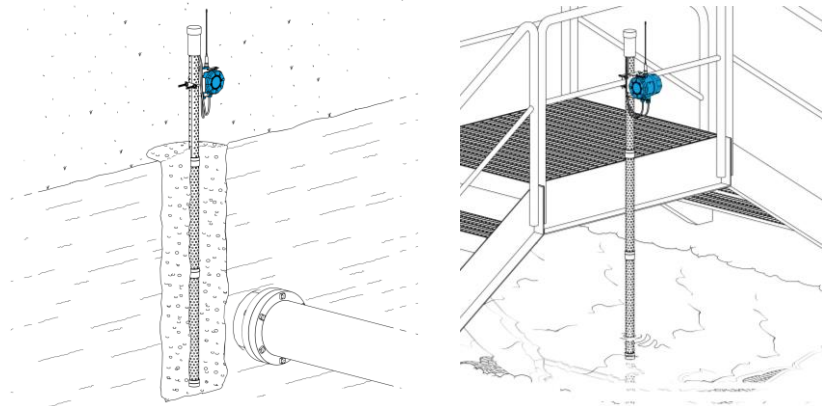


Figure 1: Syscor's HC-Tracker monitoring well assembly

Figure 2: Syscor's HC-Tracker water body monitoring assembly

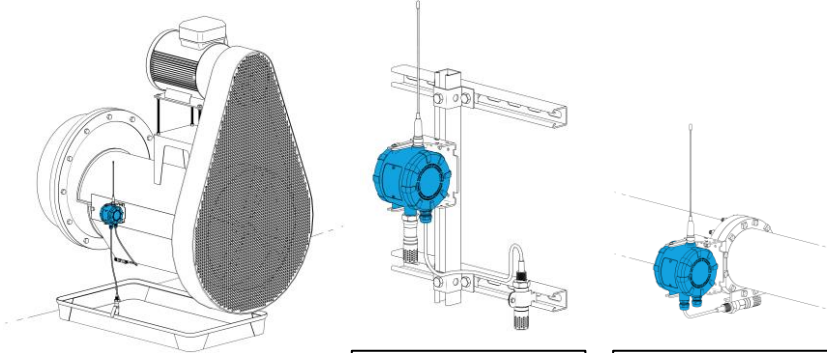
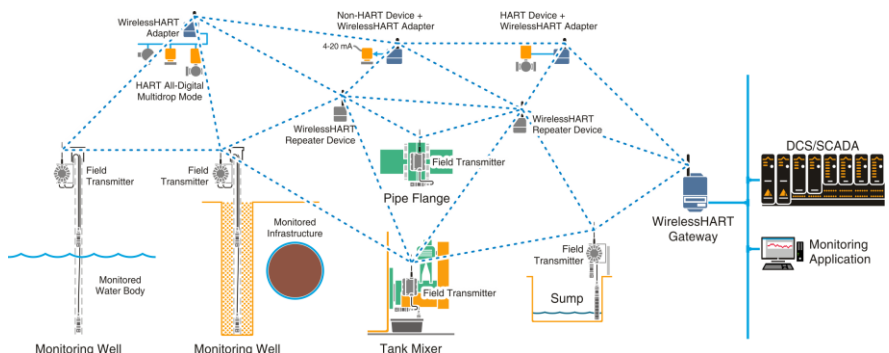


Figure 3: Syscor's HC-Tracker tank mixer monitoring assembly

Figure 4: Syscor's HC-Tracker sump monitoring assembly

Figure 5: Syscor's HC-Tracker pipe flange monitoring assembly



Specifications

Functional Specifications

Internal Sensors	Temperature, vibration/accelerometer
*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; 5 seconds to 1 hour

Physical Specifications

Power Supply (Battery Pack)	Models available for use: <ul style="list-style-type: none"> Model 841 Battery Pack: 2-cell, 7.2V 19.0Ah 136.8Wh (recommended for the PCU-X01) Model 902 Battery Pack: 4-cell, 7.2V 38.0Ah 273.6Wh To preserve intrinsic safety, only Syscor battery packs may be used. Battery packs are Li-SOCl ₂ , field replaceable, Intrinsically Safe, and have 10+ years of battery life depending on application and update rate.
Communication	Maintenance Port for communication with HART field communicator
Enclosure	Stainless steel SS316
Antenna Options 2.4-2.5 GHz	<ul style="list-style-type: none"> Omni-directional, 3dBi, Syscor 001085, 183mm (7.2in), N-type male, straight Other antenna options here: syscor.com/products/antennas
Antenna Port	N-Type female
Sensor Probe Ports	1/2in. NPT
Sensor Wiring Connections	Screw terminals
Weight	3.75kg [8.3lbs]
Mounting Options	Universal Mounting Bracket with 2" or 5" U-bolt, or 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 ± 2°C [3.6°F]
Operating Temp.	-40°C to +60°C [-40°F to +140°F]

Product Certifications

USA	FCC: 2AAZE-000697 Intrinsic Safety: CSA 19CA70174889X 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 19CA70174889X 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 ₂₈₁₃
IECEX	Intrinsic Safety: IECEX CSA 18.0031X Ex ia IIB T4 Ga

Learn More

Hydrocarbon Detector (HCD) Sensor Probe	https://www.syscor.com/downloads/HCD01DDS_HCD-Sensor.pdf
Hydrocarbon Detector with Water Level (HCDW) Sensor Probe	https://www.syscor.com/downloads/HCDW01DS_HCDW-Sensor.pdf
Field Transmitter Battery Packs	https://www.syscor.com/downloads/BATTERY01DDS_FT Batteries.pdf
Antennas	https://www.syscor.com/products/antennas
Universal Mounting Bracket	https://www.syscor.com/downloads/BRACKET02DDS_UniversalMountingBracket.pdf
Floating Roof Bracket	https://www.syscor.com/downloads/BRACKET01DDS_FRMountingBracket.pdf
Stackable Monitoring Well	https://www.syscor.com/downloads/TUBING01DDS_SMonitoringWell.pdf
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PCU-X01 Sensor Hub	http://www.syscor.com/downloads/PCU01DDS_WIHART-Sensor_Hub.pdf