

HCD Sensor Probe



Description

Syscor's Hydrocarbon Detector (HCD) sensor probe can detect hydrocarbons (butane and heavier) and measure temperature and acceleration/vibration. To operate, the probe can only be wired to Syscor's PCU-X01 Sensor Hub or PCU-X11 Inclinometer.

Detection and Measurement Capabilities

Hydrocarbon Detection: Syscor has developed and qualified, in close cooperation with the petroleum industry, a new generation of hydrocarbon detection Polymer Absorption (PA) Sensors. The probe contains two redundant PA Sensors built with Syscor's proprietary chemistry. The chemistry has a high signal-to-noise ratio, methane immunity, moisture resistance, and is optimized for different applications. In addition, the probe has the following capabilities:

- Detects hydrocarbons upon contact in air, underground, or within water bodies;
- Functions even when fully immersed in hot or cold water for years (including ice);
- Survives over 30 freeze/thaw cycles.

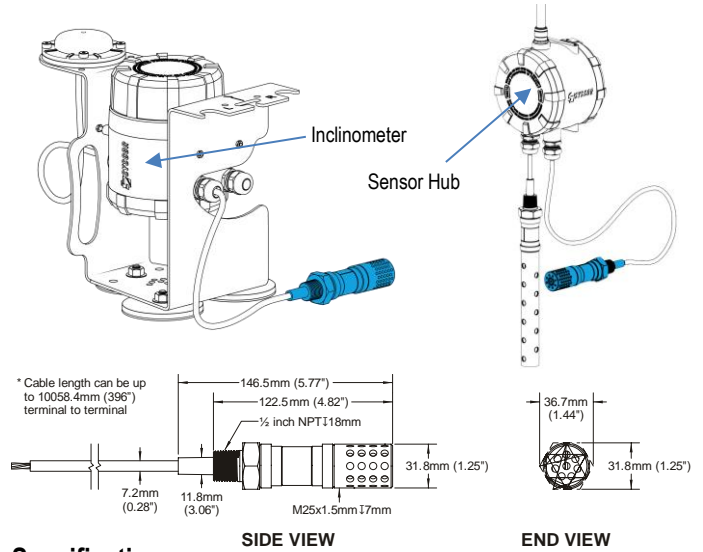
Temperature Measurement: Syscor uses a high accuracy, integrated circuit by Texas Instruments (TMP108).

Acceleration/Vibration Measurement: Syscor uses MEMS sensors that are sealed, durable, and referenced to gravity.

The HCD sensor probe is capable of self-calibration in the field.

Learn More

PCU-X01 Sensor Hub	https://www.syscor.com/downloads/PCU01DDS_WI_HART-Sensor_Hub.pdf
Polymer Absorption (PA) Sensors	https://www.syscor.com/technology/pas
Micro-Electro-Mechanical-System (MEMS)	https://www.syscor.com/technology/mems
Stackable Monitoring Well	https://www.syscor.com/downloads/TUBING01DDS_SMonitoringWell.pdf
Hydrocarbon Detector (HCD) Sensor Probe	https://www.syscor.com/downloads/HCD01DDS_HCD-Sensor.pdf



Specifications

Functional Specifications

Power Usage	Typical <0.1 W (system = Field Transmitter + sensors)
Sensor Features	Hydrocarbon Detection (butane and heavier), Temperature, Accelerometer (see Performance Specifications)

Physical Specifications

Power Supply	Syscor's Sensor Hub and Inclinometer (Field Transmitters)
Communication	Proprietary protocol to Field Transmitter
Enclosure	Housing: Stainless steel SS316
Wiring	4x1 conductor (red, black, white, green) 20 AWG tinned copper
Weight	400g [14.1oz.]

Connect directly to the Sensor Hub or Inclinometer via 1/2in. NPT port or via cable extension. **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.).*

Performance Specifications

Polymer Absorption (PA) Sensors	Detects hydrocarbons (butane and heavier) in air and water; operates in environments where full submersion in water is expected (air/water)
Temp. Sensor	12 bit resolution; worst case accuracy $\pm 1^{\circ}\text{C}$ [1.8°F]
Accelerometer	MEMS digital output motion sensor; ultra-low-power, 3-axis "pico" accelerometer for both acceleration and velocity detection; Dynamically selectable range from 0g to 16g
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	CE2813
IECEX	Intrinsic Safety: IECEX CSA 18.0031X	Ex ia IIB T4 Ga	