

# HCD Hydrocarbon Detector Probe

## Description

Syscor's HCD Hydrocarbon Detector Probe can detect hydrocarbons (butane and heavier), measure temperature, and measure acceleration/vibration. The probe connects to a 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 PA Sensors (for redundancy) built with Syscor's proprietary formulations. The PA sensors have a high signal-to-noise ratio, methane immunity, are corrosion proof, and are designed to operate for up to 30 years (5 years under water).

**Temperature Measurement:** Low power digital temperature sensor.

**Acceleration/Vibration Measurement:** A sealed, durable, MEMS sensor, referenced to gravity.

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

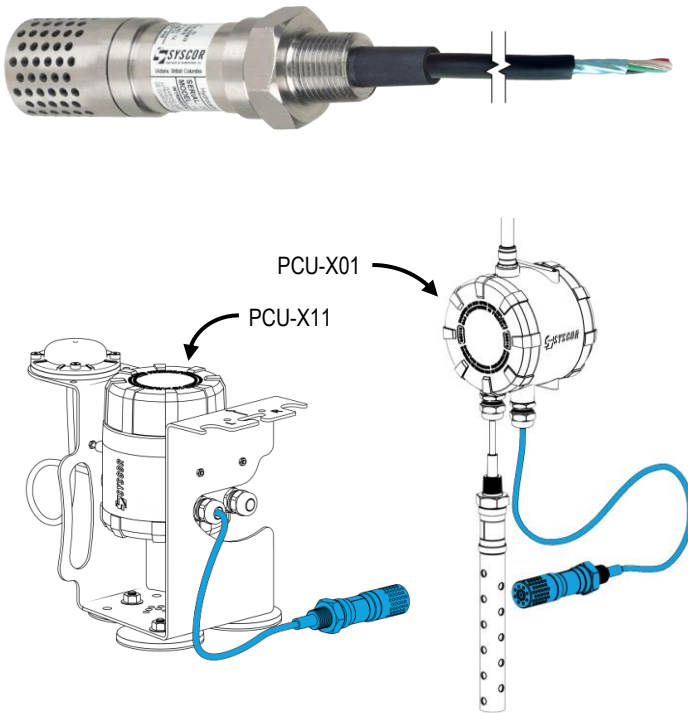
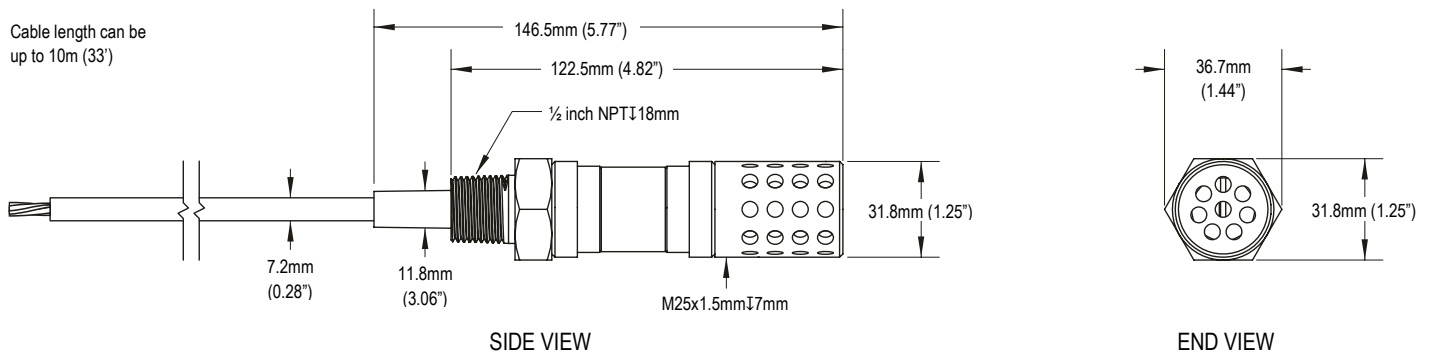


Figure 1. HCD Probes in typical configurations with a PCU-X11 Inclinometer and a PCU-X01 Sensor Hub.



## Specifications

### Functional Specifications

Power Usage	Nominal < 0.1 W
Sensor Features	Hydrocarbon Detection (butane and heavier), Temperature, Accelerometer (see Performance Specifications)
Communication	Proprietary serial protocol to PCU-X01 or PCU-X11

### Physical Specifications

Enclosure	Stainless steel SS316 IP68, Type 4X
Wiring	4x1 conductor (red, black, white, green) 20 AWG tinned copper
Weight	400g [14.1oz.]
External Connections	Must be connected to port 1 or port 2 on a PCU-X01 or PCU-X11. If two sensor probes are connected to same PCU, then the total combined cable length for Intrinsically Safe operation cannot exceed 10m (33ft.).

### Performance Specifications

Polymer Absorption (PA) Sensors	Detects all hydrocarbons (butane and heavier) in air and water.
Accelerometer	Ultra-low-power, high performance, three-axis linear accelerometer; Dynamically selectable range from 0g to 16g; Acceleration and velocity detection
Temp. Sensor	Resolution: 12 bits (0.0625°C) Accuracy: ±0.75°C (maximum) from -20°C to +85°C ±1°C (maximum) from -40°C to +125°C
Operating Temp.	-40°C to +60°C [-40°F to +140°F]

## 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 <sub>2813</sub>
IECEX	Intrinsic Safety: IECEX CSA 18.0031X Ex ia IIB T4 Ga

## Learn More

PCU-X01 Sensor Hub	<a href="https://syscor.com/downloads/syscor_spec-sheet_pcux01-wirelesshart-sensorhub_en_80175.pdf">syscor.com/downloads/syscor_spec-sheet_pcux01-wirelesshart-sensorhub_en_80175.pdf</a>
PCU-X11 Inclinator	<a href="https://syscor.com/downloads/syscor_spec-sheet_pcux11-wirelesshart-inclinometer_en_80177.pdf">syscor.com/downloads/syscor_spec-sheet_pcux11-wirelesshart-inclinometer_en_80177.pdf</a>
Polymer Absorption (PA) Sensors	<a href="https://syscor.com/technology/pas">syscor.com/technology/pas</a>
Micro-Electro-Mechanical-System (MEMS)	<a href="https://syscor.com/technology/mems">syscor.com/technology/mems</a>
Stackable Monitoring Well	<a href="https://syscor.com/downloads/syscor_spec-sheet_stackable-monitoring-well_en_80184.pdf">syscor.com/downloads/syscor_spec-sheet_stackable-monitoring-well_en_80184.pdf</a>

