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HCDW Sensor Probe

Description

Syscor's Hydrocarbon Detector with Water Level (HCDW) sensor probe can detect hydrocarbons (butane and heavier) and measure water level, temperature, and acceleration/vibration. To operate, the probe can only be wired to Syscor's PCU-X01 Sensor Hub and 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 three 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.

Water Level Measurement: The resistive water level sensor works only with conductive liquids. Cathodic protection from galvanic corrosion is achieved through

gold plating and deposition of "sacrificial metal" on the sensor anode. Additional cathodic protection is achieved by energizing the probe for only brief time periods (20 milliseconds or less).

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

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

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

Learn More

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PCU-X01 Sensor Hub	https://www.syscor.com/downloads/PCU01DD S_WiHART-Sensor_Hub_2.1.0.pdf
PCU-X11 Inclinometer	https://syscor.com/downloads/PCU01DDS_Wi HART-Inclinometer_2.1.0.pdf
Polymer Absorption (PA) Sensors	https://www.syscor.com/technology/pas
Micro-Electro- Mechanical-System (MEMS)	https://www.syscor.com/technology/mems
Hydrocarbon Detector with Water Level (HCDW) Sensor Probe	https://www.syscor.com/downloads/HCDW01D DS_HDCW-Sensor_2.1.0.pdf



Specifications

Functional Specifications		
Power Usage	Typical <0.1 W (system = Field Transmitter + sensors)	
Sensor Features	Hydrocarbon Detection (butane and heavier), Water Level, Temperature, Accelerometer (see Performance Specifications)	
Physical Specifications		
Power Supply	Syscor's Sensor Hub and Inclinometer (Field Transmitters)	
Communication	Proprietary protocol to Field Transmitters	
Enclosure	Housing: Stainless steel SS316	
Wiring	4x1 conductor (red, black, white, green) 20 AWG tinned copper	
Weight	500g [17.6oz.]	
*Mounting and Intrinsically Safe Operation	Connect directly to the Sensor Hub or Inclinometer via 1/2in. NPT port or via cable extension. * <u>Intrinsically Safe</u> <u>Operation:</u> 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)	
Water Level Sensor	Up to 5in. (12.7cm) detection range; 1/2in. intervals (not in metric) Operating temperature range: > 0°C [32°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	
Temp. Sensor	12 bit resolution; worst case accuracy ± 1°C [1.8°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	