

Rapid Deployment External Leak Detection System (ELDS)

Developed in close cooperation with the petroleum industry

Description

The globally scalable Rapid Deployment ELDS was developed as an IIoT solution bundled with Syscor's hydrocarbon leak detection sensors for sites that lack power but are within cell range.

Applications

The Rapid Deployment ELDS offers end-to-end above and below ground hydrocarbon monitoring for well sites, water bodies, production facilities, pipeline right-of-ways, and other applications (butane and heavier).

Detection and Measurement Capabilities

Syscor's passive Hydrocarbon Detector with HDPE enclosure (HCD-P) sensor probe contains two polymer absorption (PA) sensors offering a high signal-to-noise ratio, methane immunity, and moisture resistance. Up to two HCD-P sensor probes with four PA sensors may be used with each Rapid Deployment ELDS.

Communications & Power

Alerts are transmitted through cellular networks using industry standard protocols. No reconfiguring of existing systems is required. Two lightweight and field replaceable lithium thionyl chloride batteries provide 2+ years of power. As an alternative, Syscor's external lithium thionyl chloride battery packs provide up to 10 years of power.

Installation

The Rapid Deployment ELDS can be mounted using standard hardware. Magnets may also be used on flat steel surfaces. A robust, lockable enclosure protects internal components from harsh environmental conditions.

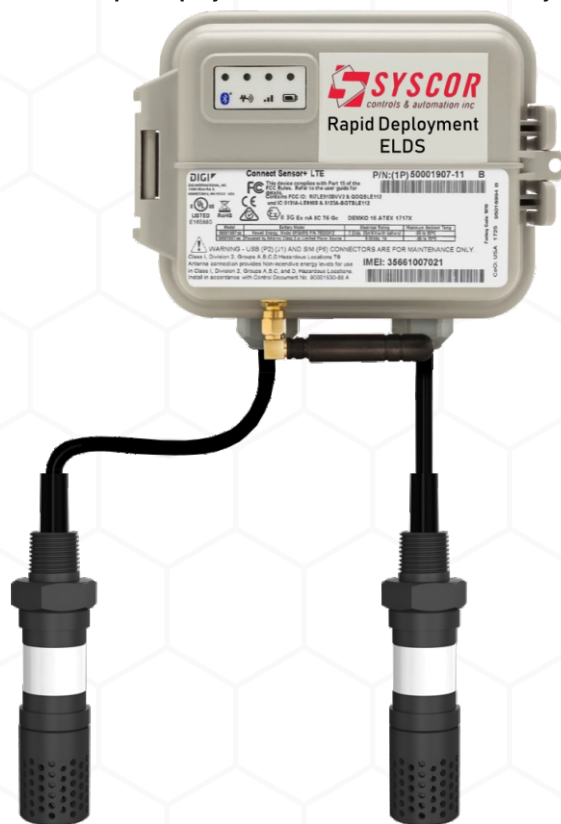
Monitoring Software & Security

Syscor's HMI is a fully customizable, mobile device-compatible, performance dashboard that scales easily for monitoring of geographically dispersed assets. Alarm rationalization tools provide flexibility of information management and threat analysis. The solution can be on-premise, server-based, or entirely cloud-based.

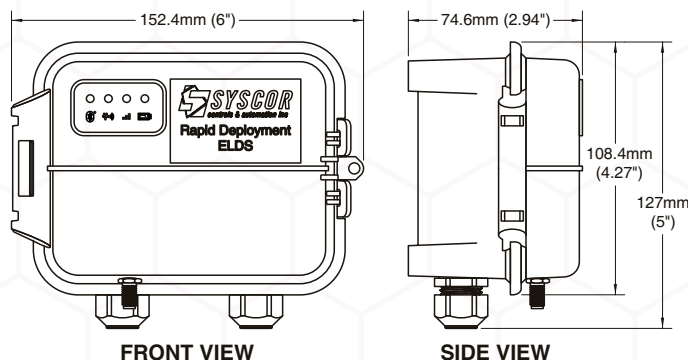
Connections to the HMI are encrypted using industry standard HTTPS and enforce modern ciphers and protocols to prevent Man-in-the-Middle (MITM) attacks. Access to HMI servers hosted in Syscor's cloud are also filtered through intermediary servers to reduce potential attack vectors.

To avoid direct protocol-level interconnect, data can be transmitted to existing SCADA in a cyber-secure fashion through fixed-format email that is parsed and interpreted by SCADA. Alternatively, a purpose-built protocol translation device can communicate to existing SCADA through dry contact digital outputs.

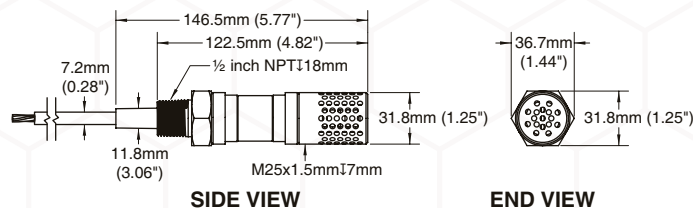
Rapid Deployment External Leak Detection System



Rapid Deployment External Leak Detection System



HCD-P Sensor Probe



Innovation driven by safety

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Specifications

Functional Specifications

2G	GSM 850, GSM 900, DCS 1800, PSC 1900
3G	FDD B1, B2, B4, B5, B8
LTE Category 1	Verizon: Bands 2, 4, 13 AT&T, T-Mobile: Bands 2, 4, 5, 12 with 3G/2G fallback
Configuration and Management	Digi Remote Manager/Local USB to Serial CU
Remote Data Access	Modbus RTU and ASCII
HMI	Options: Digi HMI alone or Syscor's cloud monitoring software pulling data through the Digi HMI

Physical Specifications

Power Supply	Rapid Deployment ELDS Battery Pack: Lithium thionyl chloride, non-rechargeable, field replaceable, 7.2 V, 14.5 Ah; Lifespan approximately 2 years at 1 sample per minute and 1 data upload per day. Note: alarm notifications occur immediately upon reaching setpoint. Syscor's Optional External Battery Packs: 1) Lithium thionyl chloride, non-rechargeable, field replaceable; 4-cell (7.2V 38.0Ah 273.6Wh); Lifespan up to 3 years depending on update rate 2) Lithium thionyl chloride, non-rechargeable, field replaceable; 24-cell (7.2 V, 228Ah, 1642Wh); Lifespan approximately 10+ years depending on update rate
Communication	HCD-P to Rapid Deployment ELDS: Proprietary Syscor protocol; Rapid Deployment ELDS to IIoT cloud network: Cellular
Enclosure	Rapid Deployment ELDS: Lexan/IP66 HCD-P: High density polyethylene (HDPE)
Antenna Options	Linear, direct/SMA male, straight, 3dBi; VSWR <3:1 ; <5:1 at 2500-2690MHz<3:1; 50Ohms impedance; 3G/4G/LTE (699-960/1710-2690 MHZ; ABS material; 40g (1.4oz) WxHxT: 3.80cm (1.45in), 19.6cm (7.71in), 1.38cm (0.54in)
Antenna Port	External SMA
Sensor Probe Ports	2x HCD-P sensor probes
Sensor Probe Wiring	4x1 conductor (Black, Red, White, Green); 20 (7/28) AWG Tinned Copper
Weight	304g (Rapid Deployment ELDS + Antenna); 42.9g (HCD-P)
Mounting Options	Standard Installation hardware or magnetic base provided by Syscor

Performance Specifications

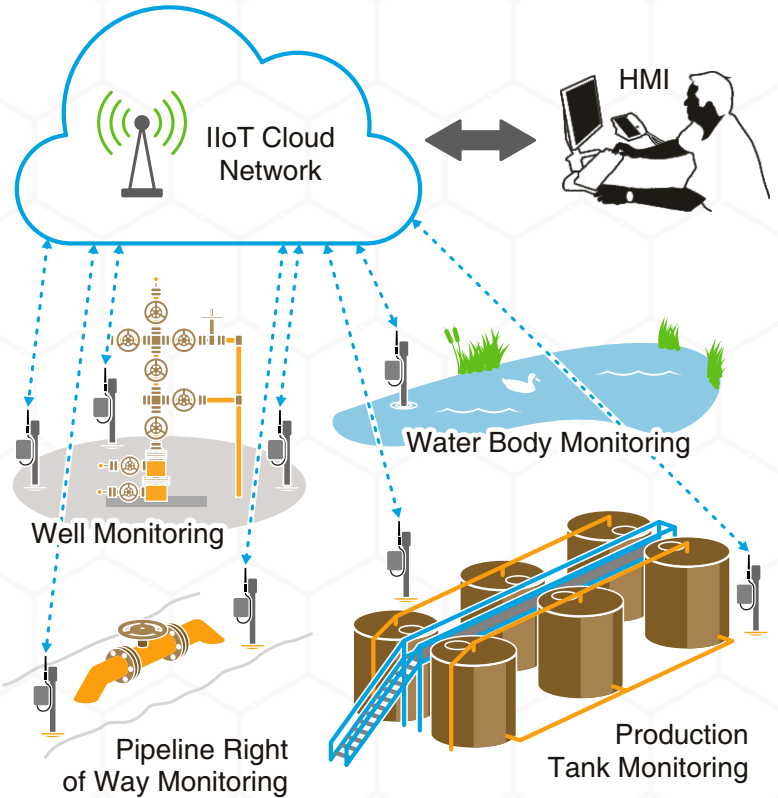
Electromagnetic Compatibility (Immunity)	EN 55024:2010
Operating Temp.	-35°C to +60°C [-31°F to +140°F]
Hydrocarbon Detection	Syscor's HDC-P sensor probe with Polymer Absorption Sensors (PA) sensors reliably detects direct hydrocarbon contact (butane and heavier); the probe operates underground and within air, hot and cold water, and ice.

Product Certifications

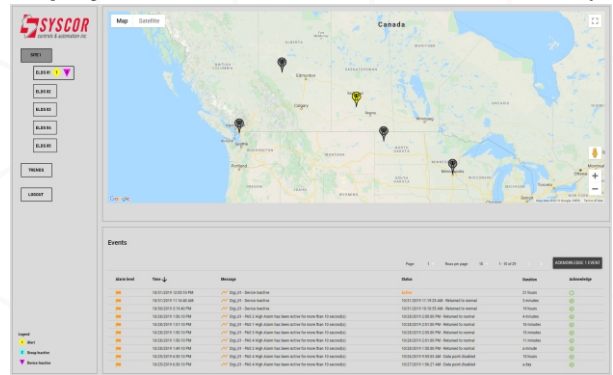
Rapid Deployment ELDS (CSENSE-A310)	1) C US listed E165880 2) Class 1, Division II, groups A,B,C,D 3) T6 4) Emissions a. Contains FCC ID: R17LE910NAV2 & QOQBLE112 b. Contains IC: 5131A-LE910N & 5123A-BGTBLE112 5) II 3G DEMOK 16 ATEX 1717X Ex nA IIC T6 Gc
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Learn More

Stackable Monitoring Well	https://syscor.com/downloads/TUBING01DDS_SMonitoringWell.pdf
Instrumentation Cable	https://syscor.com/downloads/CBL01DDS_4x1-Cable.pdf
PolyFluoro Wicking Sleeve	https://syscor.com/downloads/SLEEVE01DDS_PolyFluoroWickingSleeve.pdf
Monitoring Software	https://syscor.com/products/software
Rapid Deployment ELDS	https://syscor.com/downloads/PAELDS01DSS_1.0.0.pdf



Rapid Deployment ELDS Global Screen with Alarm (Yellow)



Rapid Deployment ELDS Device Screen with Alarm (Yellow)

