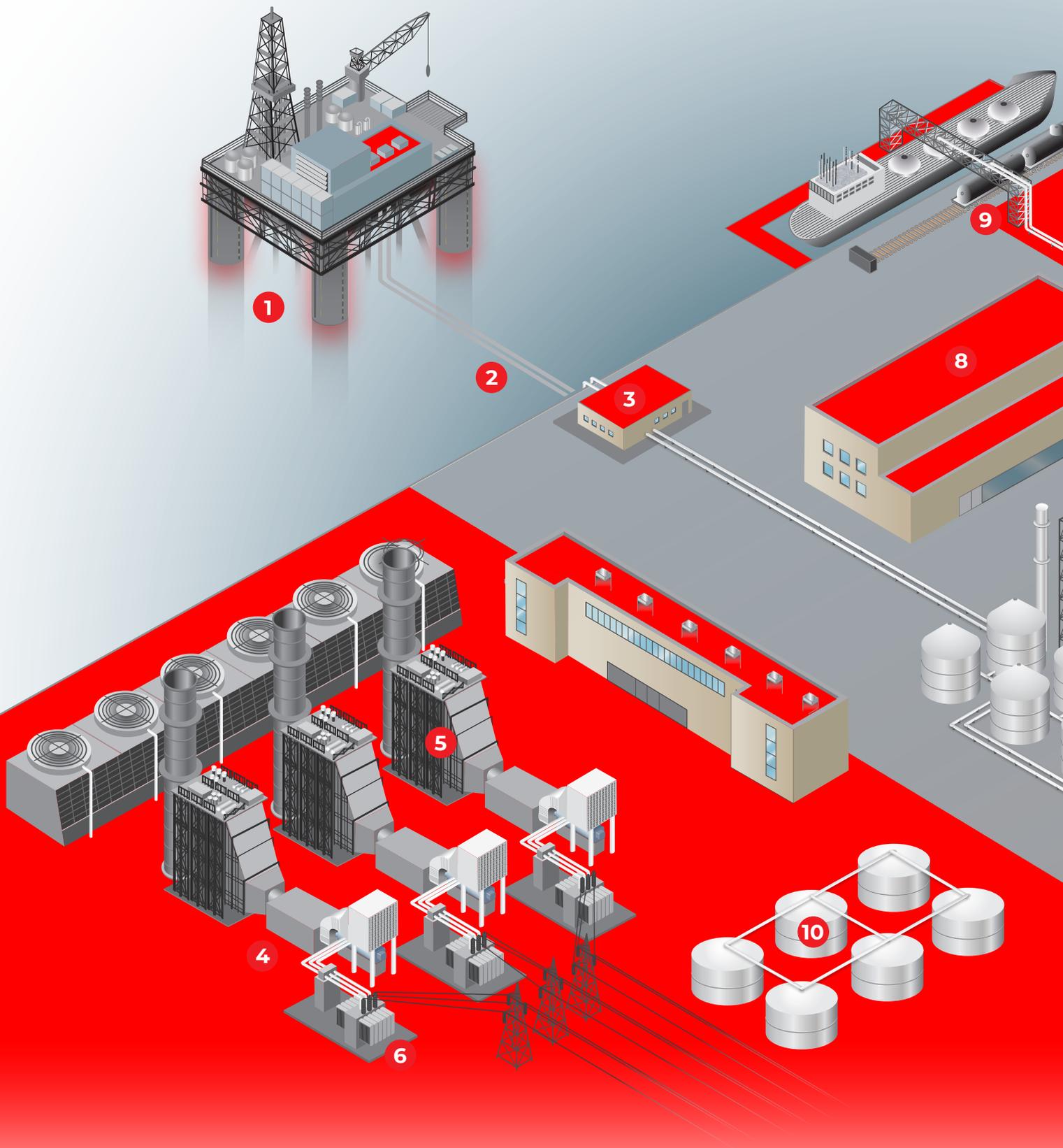


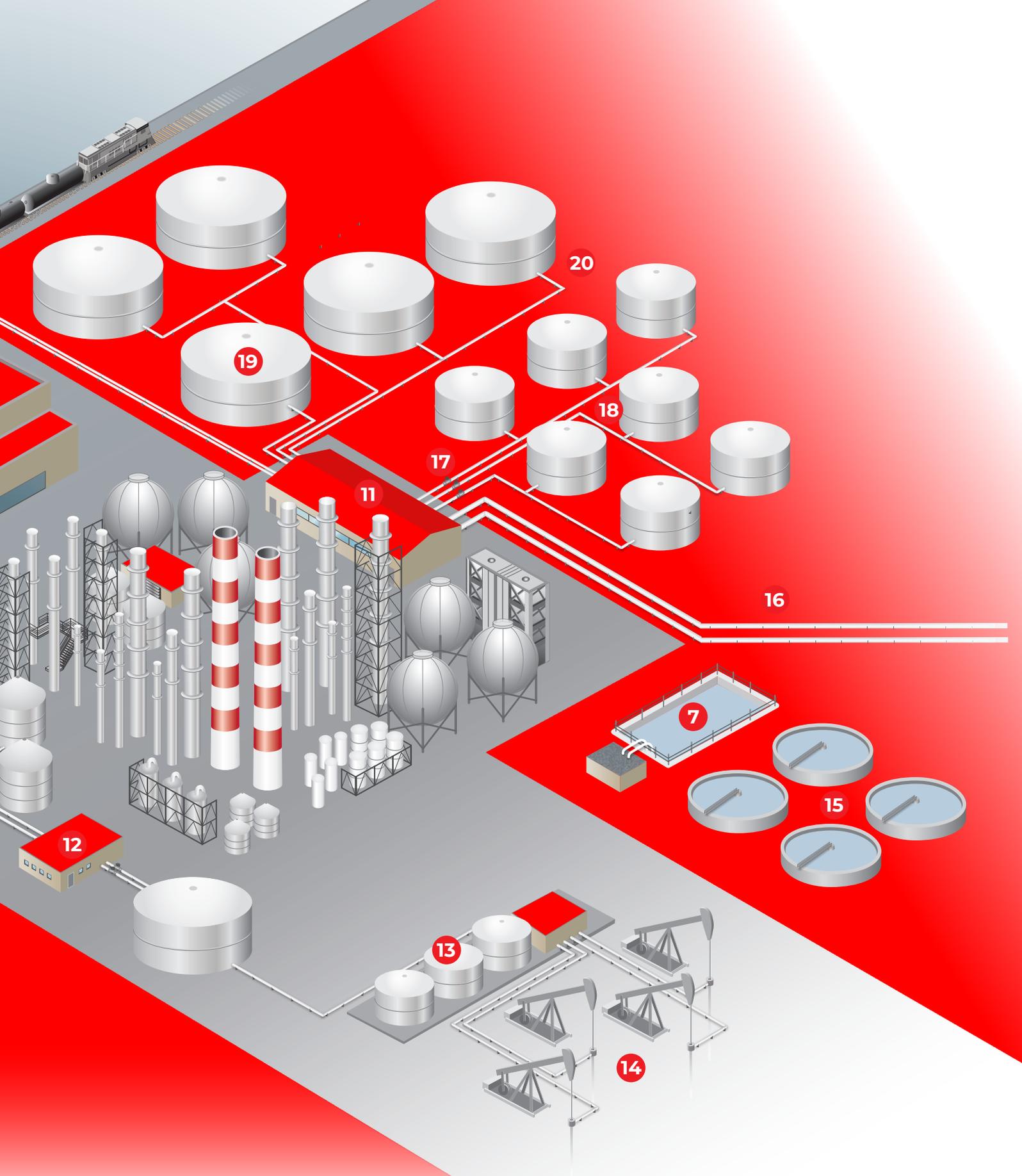


**INDUSTRIAL LEAK
DETECTION SOLUTIONS**

naftosense



- 1** Off Shore Drilling
- 2** Interstitial Pipeline Detection
- 3** Pump, Filter, Metering Leak Detection
- 4** Skid Systems & Equipment Monitoring
- 5** Turbine Oil Pump and Process
- 6** Transformer Monitoring
- 7** Oil on Water, Sump, Oil Water Separator
- 8** Facility: Generator, Boiler, Tanks
- 9** Hydrocarbon Filling Terminals
- 10** Synthetic, Bio-Fuels



- 11** Laboratory Chemical
- 12** Process and Instrumentation
- 13** Interstitial, Double Containment
- 14** Direct Bore Pit Detection
- 15** Oil on Water Monitoring
- 16** Midstream / Long Line Pipeline
- 17** Valve and Switching Monitoring
- 18** Tank Farm / Tank Berm
- 19** Floating Roof, Sump, Foundation
- 20** Vertical Lift Pump & Valve

The Trusted Source in Hydrocarbon Leak Detection

Naftosense designs and manufactures hydrocarbon leak detection systems based on agnostic products which detect the presence of hydrocarbons such as refined fuel, light / heavy crude oils, lubricants, dielectric oils, solvents, and petrochemical compounds.

Why Naftosense is Ideal for Your Application

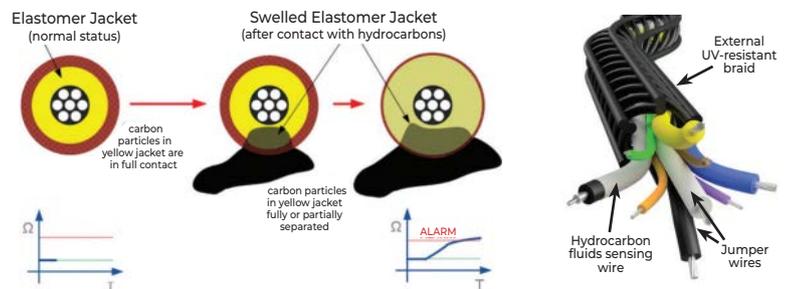
Naftosense Leak Detection systems are extremely sensitive to hydrocarbon liquids and gasses. Some customers have base line contamination in their facilities that cause other leak detection systems to alarm in "normal" operation. Others have problems during periods of excessive rainfall where hydrocarbons are released from the soil triggering a false alarm. Naftosense solves ALL micro-exposure alarm issues by allowing real time volume reporting and field adjustability of the sensor to calibrate for existing conditions.

In addition, the Monitoring Module will report progressive leak alarms as the volume of the leak increases. Sensors are rugged and built to be immersed in a leak environment and still report the "increasing leak volume" until the sensor becomes completely saturated at full alarm. After the leak is remediated, Naftosense sensors can be re-set and re-installed. Only when the sensor is completely saturated will you need to use our simple cleaning technique involving common household chemicals. Naftosense sensors can be re-used with confidence for 10 years or more!



How Naftosense Leak Detection Cables and Sensors Work

Naftosense leak detection technology is based on Polymer Absorption Sensor (PAS) technology. Developed in the 1950s, PAS technology has a proven track record of detecting hydrocarbons in extreme conditions and enables real-time, cost-effective critical infrastructure integrity monitoring. In coordination with our patented controller technology, Naftosense can dictate leak volume and decipher old and new material.



Simple, Configurable, Outputs with Your Network

Communications from the Naftosense system to your PLC, CMS, DCS, SCADA is quite simple. Utilizing your existing network in combination with your favorite wireless, cellular or hard-wired transmitter, to easily communicate leak volume, and location quickly and efficiently. The absence of complicated 3rd party panels and proprietary communication protocols allows a seamless, inexpensive installation with familiar equipment as the backbone of your new leak detection system.

Commitment to Quality

At Naftosense, quality means performance. Each of our products are tested multiple times before a Naftosense label is placed on the product. With Production processes that strive for continuous improvement and exhaustive performance testing, we are confident that our products meet and exceed all applicable standards before they ever leave our facility. Naftosense puts a 10-year factory warranty on all products to prove our commitment to the highest standards of installation.

Tested and Qualified

Naftosense leak detection systems are tested to the most stringent industry standard to ensure maximum reliability and performance for our customers.

Intrinsically safe - Class 1, Division 1, Groups A, B, C, and D
Tested by FM Approvals for compliance as per FM Class 3610
ISO-9001:2015 certified

Robust Construction

Long service life assurance through patented sensor composition and construction materials.

Life Expectancy

Our extensive scientific testing and field history prove that when properly installed and maintained, Naftosense leak detection cables are expected to work for many decades.

An industry leading 10 year warranty is standard with all products sold.

Industries Served



Refineries

Modern petrochemical facilities look for reliable process equipment that contribute to overall safety and efficiency. Naftosense has a rich history of rapid detection throughout the refining process.

Pipeline

Naftosense was created by exceeding pipeline companies demands for leak detection. Wireless communication, long life battery power, long term deployment in remote in arctic and tropical environments with no false alarms. There is no other product for remote detection with 10-year guaranteed reliability.



Tank Farms

Greenfield new builds, existing, retro fit, or re-building tanks of all sizes, shapes, and construction methods are no problem for Naftosense. With sensors that will never detect water you can be confident your hydrocarbon will be rapidly detected before the minor leak becomes an incident.

Power Generation

America's largest power generation facilities utilize Naftosense leak detection. With staff reductions and increased demand for power monitoring critical equipment in person is challenging. We provide confident remote monitoring of transformer fluids, turbines, generators, and other critical equipment.



Containment Basin / Oil on Water Detection

Many facilities are concerned with implications from releasing hydrocarbons into the environment via sumps and drains for containment basins. Naftosense makes point sensors that are ideal for these often-remote locations. Drain with confidence by deploying Naftosense.

Horizontal or Vertical Drilling / Micro-Drilling

Leaks around old pipeline line repairs, aging tanks, and racked piping are challenging areas to find small leaks before disaster strikes. Using Naftosense point sensors in small diameter slotted tubes is effective at detecting gasses and liquid hydrocarbon leaks.

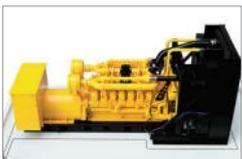


Pump Skids, Filter Skids, and Portable Process Equipment

Oil and gas industry uses portable process equipment skids for countless applications. Naftosense systems are easy to expand and add on different process areas with simple output to existing wireless networks. Why compromise safety even on temporary process platforms?

Liquid Natural Gas Processing Plants

In the LNG plants, during the liquification process, a lot of LPG (Liquid Propane Gas) is used to cool down the natural gas and bring it to liquid state. In case of leak, the LNG itself does not create a hazard as the Methane is lighter than air. However, if LPG (the refrigerant) is leaking, as these vapors are heavier than air, they accumulate at the surface and create significant safety risk.



Generator and Day Tanks

Naftosense is known for building a complete and reliable leak detection system around emergency generators, diesel days tanks, and related plumbing. Modern buildings are susceptible to significant property damage, loss of human life, or environmental pollution. Fuel leaks are detected in seconds with Naftosense leak detection systems.



Marine

Fueling terminals and bulk freighters rely on piping to safely move hydrocarbons over water. Even the smallest leak in this environment has a significant impact. Naftosense has the greatest sensitivity and will react to gasses as well as little as 1 ML of liquid hydrocarbons. This is a primary reason Naftosense leak detection equipment is found on many ocean terminals.



Produced Water

Detect leaks of produced water and high mineral concentrations in industrial wastewater for tanks, piping, and sump areas. Loss prevention in fracking, chemical, and nuclear waste storage with immunity to ground water and precipitation.

Cables and Sensors

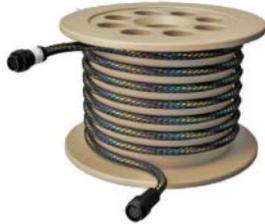
Naftosense has several models of high-performance, multiplexed, passive hydrocarbon detectors designed specifically for detecting the unwanted presence of a wide range of liquid hydrocarbons. With both multiplexed sensor cable, fixed length factory finished cables, and

point sensors, Naftosense provides quick reaction to light and heavy hydrocarbons in most applications. Safe to use in extreme outdoor environmental conditions around tanks, vessels, pipelines, process equipment, skids, fueling depots, generators, and more.

Leak Detection Cables

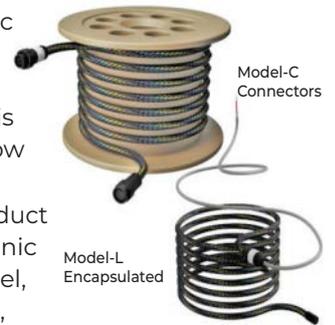
FLD-HSC Hydrocarbon Sensor

The FLD-HSC is a hydrocarbon detector designed specifically for deployment in horizontal applications both above and below ground. FLD-HSC Sensors are designed to be tough with a pull strength of 220 lbs. Yet still flexible to easily wrap critical bolted or welded unions, valves, and pumps but still cover long distances up to 1280' per series run. Standard FLD-HSC sensors have factory terminated heavy-duty twist lock connectors for easy series field connection. FLD-HSC configurable to order and offered in a custom length multi-sensor string (up to 1280') with fully encapsulated connections, an ideal choice for buried assets with long pulls. Complete line of area-rated accessories round out this robust line of easy to install sensors. Used for above and below ground pipelines, large storage tanks, branch lines, combustion turbines, and larger coverage areas requiring multi-sensor strings.

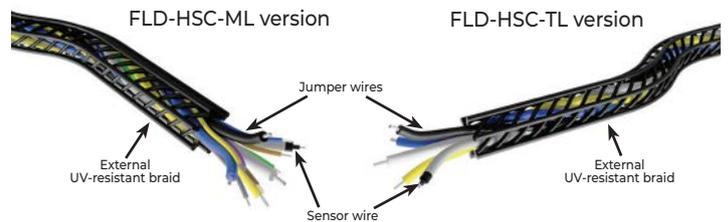


FLD-DHSC Hydrocarbon Sensor

The FLD-DHSC is a sensor designed to detect a wide range of organic solvents and hydrocarbons. Designed for horizontal applications this flexible sensor is suitable for both above and below ground deployment. Engineered to quickly detect product like; liquid hydrocarbons or organic solvents, primarily gasoline, diesel, jet fuel, acetone/MEK, methanol, ethanol, esters, transformer oils, etc.



With two sensor wires, it provides quick reaction to the target liquids and can be used in outdoor environment without being affected by exposure to water.



Point Sensors

FLD-O2W-SP Sensing Probe

The FLD-O2W-SP is a highly sensitive oil on water sensor designed to detect as little as 1ml of hydrocarbons floating on water. Designed for vertical applications, permanently immersed in salt or ground water. This line of durable sensors can even respond to heavy, low lying hydrocarbon fumes or gases due to the multiple leak sensing wire construction.



FLD-PHD Hydrocarbon Sensor Cable

The FLD-PHD is a sensor designed to detect a wide range of hydrocarbons. Designed for horizontal applications this flexible sensor is suitable for both above and below ground deployment. With a maximum sensor length of 80' you can cover smaller areas with this configure to order rope style sensor. With up to 1000' of lead wire you can easily monitor smaller assets.



Features and Benefits

- Reliable detection of all fuels, oils, solvents, and specialty hydrocarbon blends
- Reusable after contamination
- Volumetric leak alarms dynamically show sensor contamination level. Decipher old and new material leakage.
- Insensitive to vibrations, methane, water
- UV Rated outer jacket safe for continuous exposure to sun light
- Wide operating temperatures range
- Reduced maintenance and easy troubleshooting
- 10-year warranty

Typical Applications

- Liquid hydrocarbon leak detection in tank farms, terminals, refineries, and pipelines
- Detection of leaking fuel from airport hydrant systems, military, and custody transfer stations in harsh outdoor, demanding environmental conditions
- Monitoring of diesel generators, fuel storage tanks in commercial buildings, hospitals, data centers, etc.
- Monitoring of oil-filled power transformers, combustion turbines, pumps, filters, heat exchangers, etc.

Advanced Control and Monitoring System

Systems that Monitor Sensor Cable Status and Alarm/Alert in the Event of Leaks

Naftosense hydrocarbon leak detection systems for the oil & gas industry are engineered for the harshest environments and installed in various settings in hazardous and non-hazardous areas. Installations include underground or above-ground structures and myriad applications, such as tank farms, underground storage

tanks, pipelines, transfer lines, process units, and airports.

Naftosense Control Panels and Monitoring Devices provide the supervision to Naftosense leak detection cable for fast, reliable, and precise detection of the presence of unwanted hydrocarbons.

Multi-Circuit Control Panels

FLD-TSP Monitoring Panel

This controller is tailored to the specific needs of the client and is designed to provide reliable, self-healing ERBUS communication protocol with the field boxes installed along the Long-Range sensor strings. This monitoring device integrates all the functions for seamless interfacing with SCADA and is rated for outdoor installation in Class I Division 2 classified locations.



Stand-Alone Monitoring Modules

FLD-F4RTD Stand Alone Battery Powered Monitoring Module

Variable resistance output, self-powered Monitoring Module for remote monitoring up to 8 individual, sensor cables.

NEMA 4X enclosure, battery powered, stand-alone, hazardous location device designed for long term deployment.

Agnostic communication output via PT100, 0-5V, or 0-10V outputs.



Single-Circuit Leak Detection Controls

FLD-SMP-MB Control Module for Long Line Leak Detection

The FLD-SMP-MB offers the high-performance control module designed to be din rail mounted in your NEMA rated enclosure! FLD-SMP-MB Long range control Module capable of running up to 50 Monitoring Modules and up to 2.5 miles of sensing cables.



FLD-SSMH-DS Control Module for Single Sensor Leak Detection

The FLD-SSMH-DS is designed for smaller leak detection applications where a single sensor under 100 ft is used. The DIN-rail mounted controller is ready to be mounted in your NEMA rated enclosure.



Wireless Hart



Cellular

Features and Benefits

- Extremely long range of leak detection circuit monitoring
- Modular design for easy assembly and integrating additional components
- Adjustable alarm threshold
- Stand-alone controls for remote installations
- Din rail mounted, low voltage control options to fit in existing control and power enclosures
- Made-to-order options available on all standard controls offerings
- 10-year warranty

Communication made easy

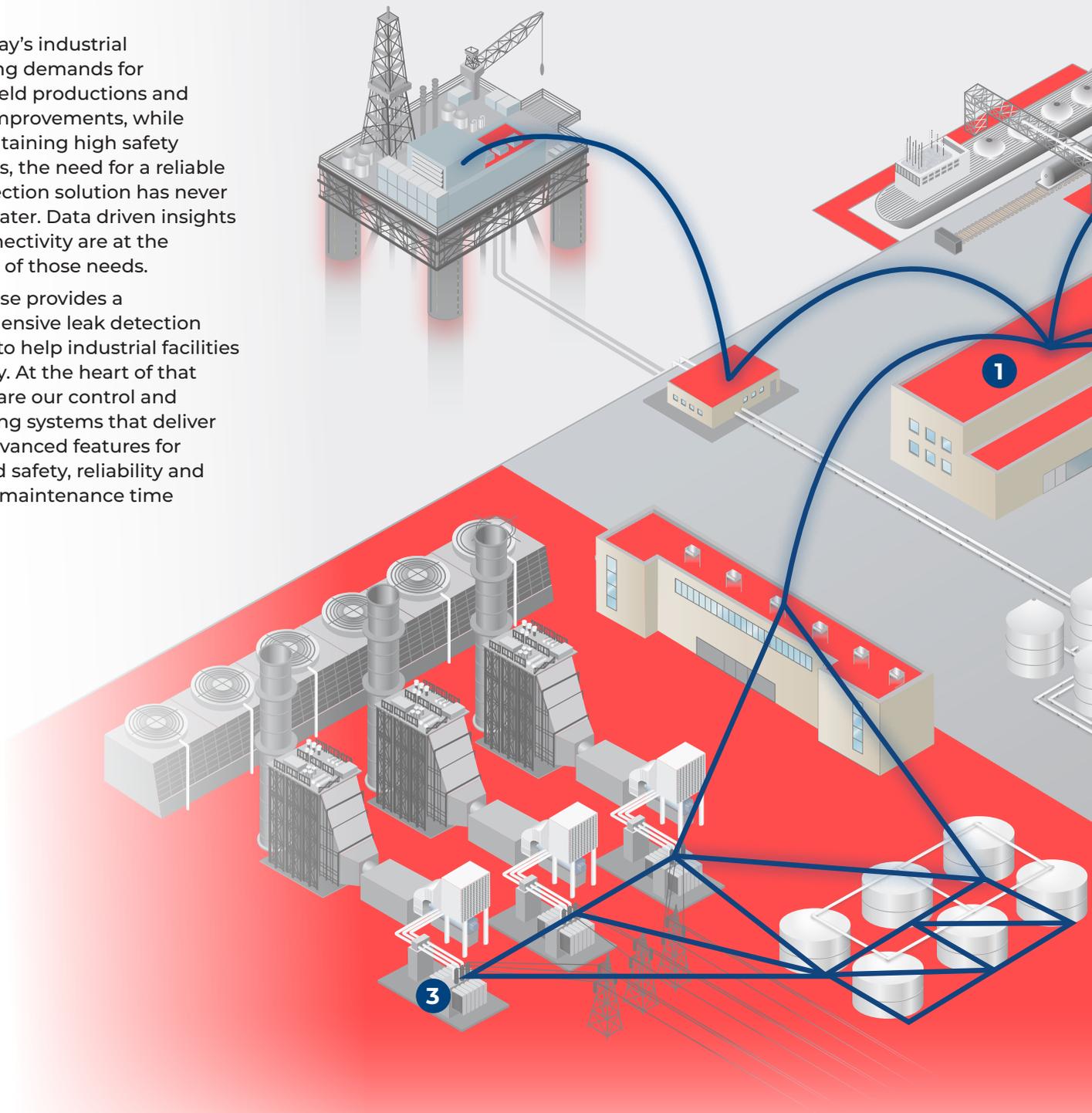
Utilize your existing network when integrating a Naftosense leak detecting system. Compatible with any wireless and wired system via a host of standard communication protocols:

0-5V	PT100 (RTD)
0-10V	Modbus RTU (RS-485)
4-20mA	TCP/IP

Advanced Control and Monitoring Systems

With today's industrial processing demands for higher yield productions and quality improvements, while still maintaining high safety standards, the need for a reliable leak detection solution has never been greater. Data driven insights and connectivity are at the forefront of those needs.

Naftosense provides a comprehensive leak detection solution to help industrial facilities run safely. At the heart of that solution are our control and monitoring systems that deliver smart advanced features for increased safety, reliability and reduced maintenance time and cost.



1



Integration

Adaptable monitoring and configuration of leak detection circuits. Utilize existing network for SCADA / PLC integration via Modbus, 0-5V, 0-10V, PT100 and 4-20mA

2



Cellular Communication

Battery operated, remote monitoring with Lindsay SentraLink LD.

3



Remote Location WirelessHART

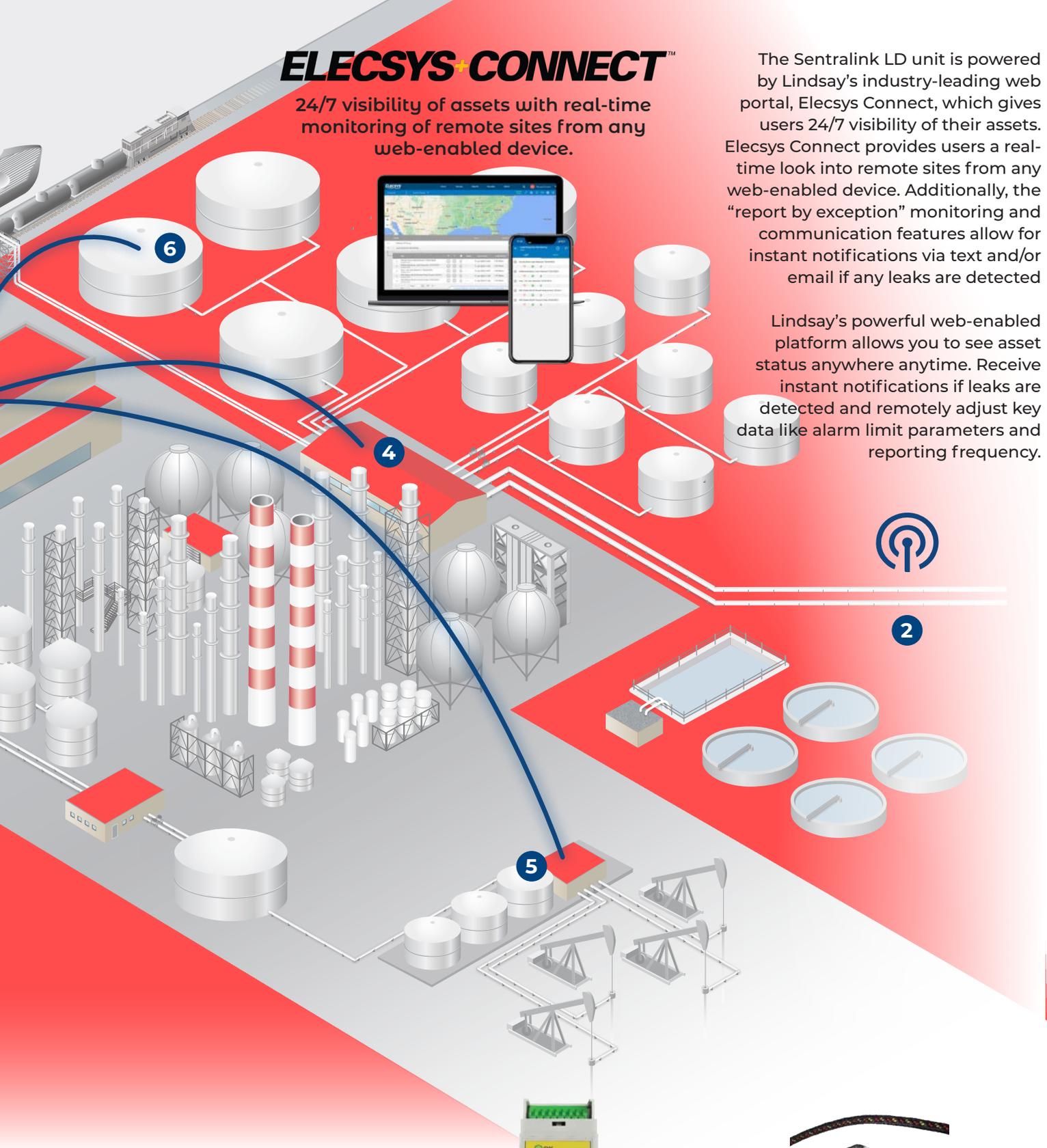
Volume-based leak detection via common communication practices. PT100, 0-5V, 0-10V

ELECSYS+CONNECT™

24/7 visibility of assets with real-time monitoring of remote sites from any web-enabled device.

The Sentralink LD unit is powered by Lindsay's industry-leading web portal, Elecsys Connect, which gives users 24/7 visibility of their assets. Elecsys Connect provides users a real-time look into remote sites from any web-enabled device. Additionally, the "report by exception" monitoring and communication features allow for instant notifications via text and/or email if any leaks are detected

Lindsay's powerful web-enabled platform allows you to see asset status anywhere anytime. Receive instant notifications if leaks are detected and remotely adjust key data like alarm limit parameters and reporting frequency.



4



Multi Circuit Control Panel

Monitoring of long line pipeline applications or coordinate an expanded network of localized leak detection locations

5



Din Rail Mount Controls

Install directly into existing control cabinets. Seamless retrofit applications without additional enclosures

6



Single-Circuit Field Control

Hazardous and non-hazardous location approvals. Hardwired or battery operated.



Installation and Construction

Our construction teams are fully trained and experienced in leak detection installation techniques. Leverage our expertise to ensure timely and accurate installation of your leak detection system components.

Commissioning

Our commissioning services ensure that the leak detection system is operating as expected. This includes full system audits, programming and set up of control panels and operational checks.

Post Installation Services and Maintenance

Providing regular leak detection system audits or implementing a maintenance schedule, Naftosense provides you with the security of having your system regularly evaluated by experts in the leak detection industry, allowing timely resolution of potential system problems.

Site Services

Utilize our site services to access new or existing leak locations and engineer a solution-based design for early detection and proper communication.

System Engineering

Our engineering team is available for pre-construction and design planning assistance to make your leak detection system an integral portion of your facility design.

Not a Drop Spilled Around Us

- World class performance
 - Commitment to quality
 - Customer committed
- Visit our website at Naftosense.com or contact us at 614-350-0911





Industrial Facilities

Naftosense leak detection systems offer superior reliability with the highest lifetime value at lower installed cost and lower cost of ownership. 20+ years of time-test quality, reliability and proven performance minimizes downtime and damage while ensuring ease of use, lower installed cost, lower cost of ownership, and worry-free operation.

People and Safety

We connect and protect our customers with inventive electrical solutions. Our systems maximize safety and performance. We are committed to providing training, education and a safe work environment on all projects of any size and scope.

Before You Buy, Weigh the Facts

Naftosense offers the most complete line of leak detection technologies and services. Whether you need products, design tools, or project assistance from our leak detection experts, rely on the proven solutions leader to deliver optimized systems to protect your critical industrial processes.





naftosense

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