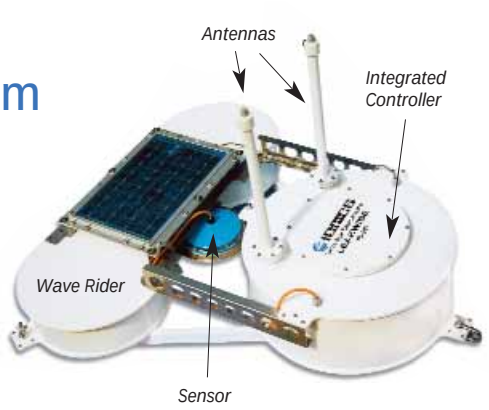
GE
Water & Process Technologies
Analytical Instruments

Fact Sheet

Leakwise*

ID-227WL Oil Sheen Monitoring System

Wireless System for Marine Applications



Applications

The Leakwise* ID-227WL Oil Sheen Monitoring System is a floating wireless detector capable of monitoring hydrocarbon or other organic solvents on water. The ID-227WL is designed for installation at offshore oil tanker buoy terminals, jetties, and piers to detect floating oil sheens from spills or leaks which occur during the loading/ offloading process.

Additional applications include detecting and monitoring floating hydrocarbons near offshore oil rigs, lagoons, lakes, rivers, open channels, and large retention ponds.

Leakwise ID-227WL System Description

The ID-227WL System consists of a wave rider float incorporating:

- An oil detection sensor
- An integrated wireless controller
- Wireless communication antennas
- A solar panel with battery

The wave rider float is designed to maintain the sensor's detecting antenna at the liquid/air interface, despite fluctuations in the liquid level due to waves and tide.

The Leakwise ID-227WL sensor can detect a minimum of 0.3 mm layer of oil on water reliably, repeatedly, and without false alarms. It has five levels of adjustable oil alarm set points for monitoring on-line changes in oil layer thickness up to 20 mm. The wireless controller (WSP-220) transmits alarm and status messages by satellite, cellular, and other wireless methods to e-mail, SMS message, or other message media. An alarm message is transmitted when an oil alarm set point is reached. A status message is transmitted every programmable time interval, enabling the monitoring of the oil layer thickness. Continuous built-in diagnostics monitor sensor operations.

Principle of Operation

The Leakwise ID-227WL uses an industry-leading technology of Electromagnetic Energy Absorption. The instrument is immersed in the monitored fluids. The higher the energy absorption of the fluid, the more the loading on the antenna.

Since water absorbs more energy than hydrocarbons and air, the loading in water is higher. If the antenna is surrounded by an oil layer or an oil/water mixture, the loading is reduced in proportion to the reduction in water content. This unique, patented technique enables the detection of small layers of oil. Furthermore, it enables continuous monitoring of an oil buildup and the measurement of its thickness.

ID-227WL Technical Specifications

Sensor Specifications

Operating Range

Detection Range	0.3–20 mm of hydrocarbon on water or brine
Working Wave Height	Maximum 2 meters
Tide Range	Unlimited
Current	Up to 4 knots (for higher current — consult factory)
Survival Conditions	Extreme sea conditions
Minimum Liquid Depth	15 cm
Operating Temperature	0 to 50° C (for other temperature — consult factory)

Physical Characteristics

Sensor	Hydrocarbon resistant polymers, stainless steel
Wave Rider	Hydrocarbon resistant polymers and marine grade aluminum

Dimensions

Wave Rider Buoy	Diameter: 1,100 mm, height 700 mm, weight: 25 kg

Electrical

Built-In Power Supply	12 V @ 5/10 W solar panel and a 12 V @ 5AH sealed lead-acid battery and battery charger
Power Autonomy	Continuous operation on sunny days (average three hours of sun per day) Autonomous operation for five sunless days

WSP-220 Controller Specifications and Options[1]

WSP-220 Description	High performance wireless signal processor, low power consumption
Message Media	E-mail or SMS as standard. Fax, pager, etc. — depending on local service providers
Message Types	1–STATUS messages at predetermined intervals 2–ALERT message when an oil threshold (1 of 5) is crossed, or when the sensor is taken out of the water 3–FAIL messages for low battery and internal checks
Programmability	Direct connection to a PC for a thorough setup or software updates, and over-the-air parameters setup and calibration for satellite or GSM communication

Wireless Options

ORB	VHF transceiver + VHF antenna working on the ORBCOMM satellite system
GSM 900	GSM 900 MHz cellular transceiver + GSM antenna
DUAL	Dual Mode: ORBCOMM + cellular
GSMA	GSM for North America band — consult factory
CDMA	CDMA cellular — consult factory
AMPS	AMPS cellular — consult factory
PTP	Point-To-Point radio link — at locally available frequency

Output Options

(Available only for Point-to-Point radio link)

RL	Relay for alarm/control of an externally wired device
420	2-wire 4-20 mA output
MODBUS	MODBUS protocol

Sensor and Controller Certifications

ID-227WL Sensor	Intrinsically safe — EEx ia IIC T (-40° C to 70° C)
Performance	TÜV — Type approval in accordance with WHG (Water Resources Law) § 19 h; EPA tested
Manufacturing	ISO 9001 Certified

* Trademark of General Electric Company; may be registered in one or more countries.
[1] The controller is contained within the ID-227WL unit.
Specifications subject to change without prior notice.

PROCON SYSTEMS INC.
Calgary: 403-255-2921
Edmonton: 780-437-0244

300 00104 Rev B
MC05-134