

Leakwise*

ID-227 Oil Sheen Monitoring System for Marine Applications

Applications

The Leakwise* ID-227 Oil Sheen Monitoring System is a floating detector capable of monitoring hydrocarbons or other organic solvents on water. The ID-227 is designed for installation at offshore oil tanker buoy terminals, jetties, and piers to detect floating oil sheens resulting from spills or leaks occurring 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.

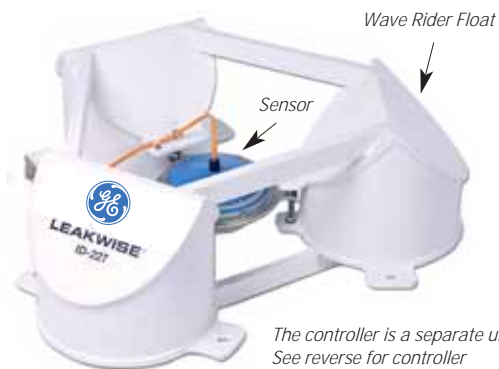
Leakwise ID-227 System Description

The ID-227 System consists of a:

- Sensor with a high frequency transmitter mounted on a wave rider float
- Separate controller (see reverse for controller options)
- Cable for connecting the sensor and controller (wired model only)

The wave rider float is designed to maintain the position of the detecting antenna at the liquid/air interface, despite fluctuations in the liquid level due to waves and tide. It has two field adjustable alarm points for:

- Low oil alarm — Detection of a predefined layer of hydrocarbons
- High oil alarm — Detection of a hydrocarbon layer at a second predefined thickness



*The controller is a separate unit.
See reverse for controller
options and specifications.*

The Leakwise ID-227 can detect a minimum of 0.3 mm layer of oil on water reliably, repeatedly, and without false alarms. It monitors on-line changes in oil layer thickness up to 20 mm. The signal processor relays can initiate both local and remote alarms, as well as control. Continuous built-in diagnostics monitor sensor operations.

Principle of Operation

The Leakwise ID-227 uses an industry-leading technology of Electromagnetic Energy Absorption. The antenna 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-227 Technical Specifications

Sensor Specifications

Operation

Wired Model	The sensor is connected with a cable to the PS-220 Analog Controller
Wireless Model	For wireless operation, refer to the ID-227WL data sheet

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)
Minimum Liquid Depth	30 cm
Working Temperature	0 – 70° C
Survival Conditions	Extreme sea conditions

Physical Specifications

Sensor	Materials: Hydrocarbon resistant polymers, 316 stainless steel
Wave Rider	Materials: Hydrocarbon resistant polymers and marine aluminum
	Dimensions: diameter 900 mm, height 300 mm, weight: 10 kg
Cable	20 m supplied standard with sensor

PS-220 Controller Specifications and Options

Specifications

PS-220 Description	The PS-220 is an analog signal processor and power supply that comes standard with the ID-227.
Cable distance to PS-220	Up to 1,200 m subject to hazardous area category
PS-220/RL/LI	Two alarm relay contacts: SPDT rated 3A at 220 Volts, normally open and normally closed, and four indicating lights: Air/Oil/Water/Fail (built-in diagnostics feature)

Options

Enclosure Options	NEMA 4X (IP-65): 275 x 230 x 130 mm (standard enclosure); NEMA 7: 215 x 260 x 175 mm EEx d: 305 x 235 x 190 mm for the PS-220 Analog Controller
Input Power Options	220/110 VAC, 12/24 VDC (@ 3.5 Watts), 12/24 VDC solar powered
PS-220 420	4–20 mA signal proportional to hydrocarbon thickness up to 3/4 in. (20 mm)—current source
PS-220 420/BG	Bar graph display (20 Bars) of hydrocarbon thickness and 4-20 mA output
AUD	Audio alarm option (available in weather- or explosion-proof enclosure)
WSP-220	Wireless communication (see Leakwise WSP-220 data sheet for more details)

Sensor and Controller Certifications

ID-227 Sensor	Intrinsically Safe — EEx ia IIC T4 (-40° C to 70° C)
Sensor Performance	EPA — Conforms to EPA/530/UST-90-009 for groundwater monitoring systems TÜV — Type approval in accordance with WHG (Water Resources Law) § 19 h
PS-220 Controller Enclosure	Ambient Temperature Range — -40° C to 70° C North America — NEMA 4X, NEMA 7 Europe — EEx d IIC T6; ATEX
Manufacturing	ISO 9001 Certified

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