

# INTELOIL LIQUID LEVEL SENSORS

The function of the IntelOil Liquid Level Sensor is to monitor the liquid level in a vessel and generate an alarm signal if the level either exceeds or falls below an acceptable limit. To achieve this, the unit uses proven high resolution float sensor technology. Each unit can be used for either low or high level sensing simply by rotating through 180° when mounting.

## Applications

The IntelOil Liquid Level Sensor is suitable for both high and low pressure systems and is approved for HCFC, HFC, HFO and CO<sub>2</sub> refrigerants and their associated oils.

## How it works

The IntelOil Liquid Level Sensor measures the level by means of a Hall effect sensor and a float assembly with built-in magnets. As the level rises or falls, variations in the magnetic field strength of the float assembly are detected by the sensor. These are converted to a variable voltage and read by the electronic unit which updates the green (normal), yellow (control) and red (alarm) status LEDs.

When a unit is being used for high level sensing, if the liquid goes above approx. 50% sight glass level, both the green and yellow LEDs will be lit and the output signal S will be switched on following a 10 second delay. This signal can be used to switch an actuator. If the level continues to rise, the green LED will be extinguished and both yellow and red LEDs will be lit and the unit relay will switch after a 90 second delay and can be used to shut down the system.

Where a unit is being used for low level sensing, if the liquid drops below approx. 50% sight glass level, the output signal S will be switched on after a 10 second delay and, if it continues to fall, the unit relay will switch after 90 seconds.

A range of adapter kits is available to allow mounting of the unit.

## Main Features

- High resolution float sensor
- Units can be used for either high or low level monitoring
- Integral diagnostics
- Supplied with 3m power and relay cables
- Reliable performance even with foaming or dirty oil
- Compact and lightweight
- Precise level sensing
- Easy to install adapters

## Models

- HLS-24-3 (24V AC with 3m power and relay cable)\*
- HLS-230-3 (230V AC with 3m power and relay cable)\*
- HLSH-24-3 (24V AC with 3m power and relay cable)\*
- HLSH-230-3 (230V AC with 3m power and relay cable)\*

\*Adapter kits sold separately

INTELOIL LIQUID LEVEL SENSOR CABLES	
Part No	Description
HOC-N300**	Power Cable 3mtr.
HOC-S300**	Relay Cable 3mtr.
HOC-N600	Power Cable 6 mtr.
HOC-S600	Relay Cable 6 mtr.

\*\*Supplied with each IntelOil Liquid Level Sensor



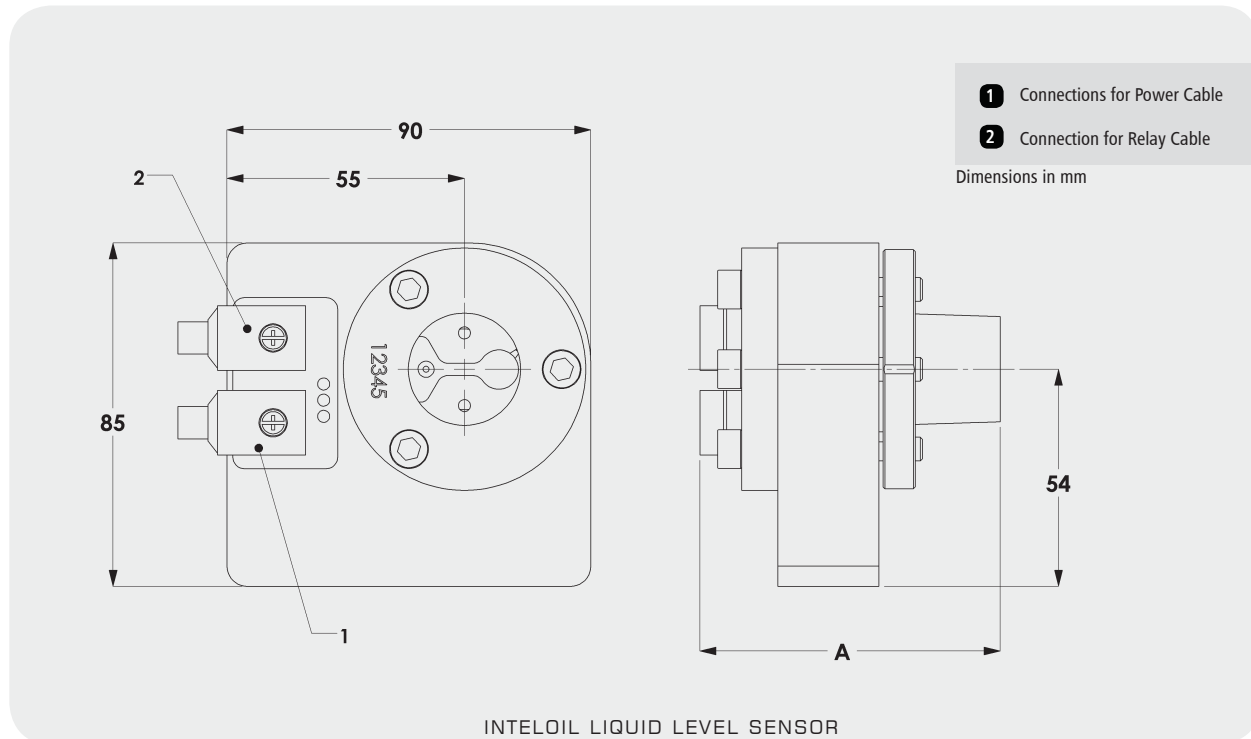
## Technical Specification

Allowable operating pressure:	0 to 60 barg (HLS) 0 to 120 barg (HLSH)
Minimum required fluid density:	0.8kg/l
Ambient temperature:	-40°C min/+50°C max
Fluid temperature:	-40°C min/+80°C max
Supply voltage:	24V AC or 230V AC 50/60 Hz
Current consumption:	0.02 Amps
Electrical connection:	Moulded plugs connect to Liquid Level Sensor
Alarm contact:	Max. 3A, 230V AC, floating
Sensor output:	0.5A inductive, 1A resistive
Wiring:	Flying leads on designated cables
Power supply:	Brown, blue, yellow-green and black (signal S) wires
Alarm contact:	Blue, black and brown wires
Protection class:	IP 65 (IEC529/EN 60529)
Status LED's:	3
Weight:	HLS: 0.47 kg HLSH: 0.54 kg
CE marked for EMC and Low Voltage Directive	
Approvals: EAC	

## LIQUID LEVEL SENSORS

### Materials of Construction

The main pressure retaining parts are made from aluminium alloy and plated steel (sight glass). The electronic control module cover is made from polycarbonate.



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### Installation - Main issues

1. The electronic module will be damaged if the 24V/230V supply voltage is exceeded.
2. Power to the unit should be maintained during standby and shutdown modes.
3. The unit should be mounted in the horizontal position.
4. To protect the liquid level sensor from system debris, adequate system filtration should be employed.

Adapter	A (mm) Installed
H12070	85
H12071	69
H12072	69
H12073	65
H12074	84
H12075	80
H12076	69
H12077	88
H12078	85
H12079	85

INTELOIL LIQUID LEVEL SENSOR ADAPTERS		
Part No	Mounting Style	Weight (kg)
H12070	3 & 4 bolt combination flange with O-ring	0.13
H12071	1 1/8"-18 UNEF thread with O-ring	0.08
H12072	1 1/8"-18 UNEF thread with aluminium seal	0.08
H12073	3/4"-14 NPTF	0.07
H12074	1 3/4"-12 UN thread Rotalock with Teflon gasket	0.14
H12075	1 1/4"-12 UNF thread Rotalock with Teflon gasket	0.11
H12076	1 1/8"-18 UNEF thread with O-ring and adapter ring	0.08
H12077	1 1/8"-18 UNEF thread with O-ring - extended length	0.10
H12078	6/6 hole mounting	0.12
H12079	1/2"- 14 NPTF	0.07