



KONGSBERG

# GL-10 Level Switch

## Water Ingress Detection Sensor

### General description

The patented GL-10 sensor is designed to meet the requirements in SOLAS Ch. XII, Reg. 12 and Ch. II-1, Reg. 25 and intended for water level detection in Cargo Holds, Ballast Tanks, and Dry Spaces of Bulk Carriers.

Output signal is 2-wire 4 to 20 mA, it will give a steady 12mA when no liquid is detected and jump to 18mA when liquid is detected.

The sensor is delivered connected and moulded to a flexible PUR-cable and installed into a Ø60 mm steel-tube with a length of 0.2 m.

The sensor can be mounted inside cargo hold with a clamp or from void space with the protecting pipe welded to the bulkhead.

The sensor can also be used as a general purpose water ingress detector, i.e. bilge system.

The sensor is intrinsically safe EEx ia, and must be connected to a Zener-barrier like the Kongsberg DZ-110, when used in hazardous areas.

### Standard features

- Unique and patented liquid detection sensor GL-10, designed for the harsh environment in ships cargo holds.
- The sensor design contains no moving parts and is very resistant to clogging from cargo.
- The sensor has IP68 protection and is well suited for areas which can be filled with water, e.g. Fore peak Tank.



Figure 1. GL-10 sensor



Figure 2. GL-10 welded installation

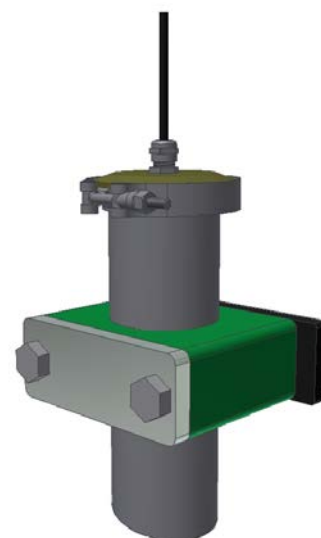


Figure 3. GL-10 clamped installation

## Ordering key

### Ordering example:

**GL-10/WS-CL100**

Sensor installation:

W = Welded

C = Clamped

P = Plain (only spare)

Type:

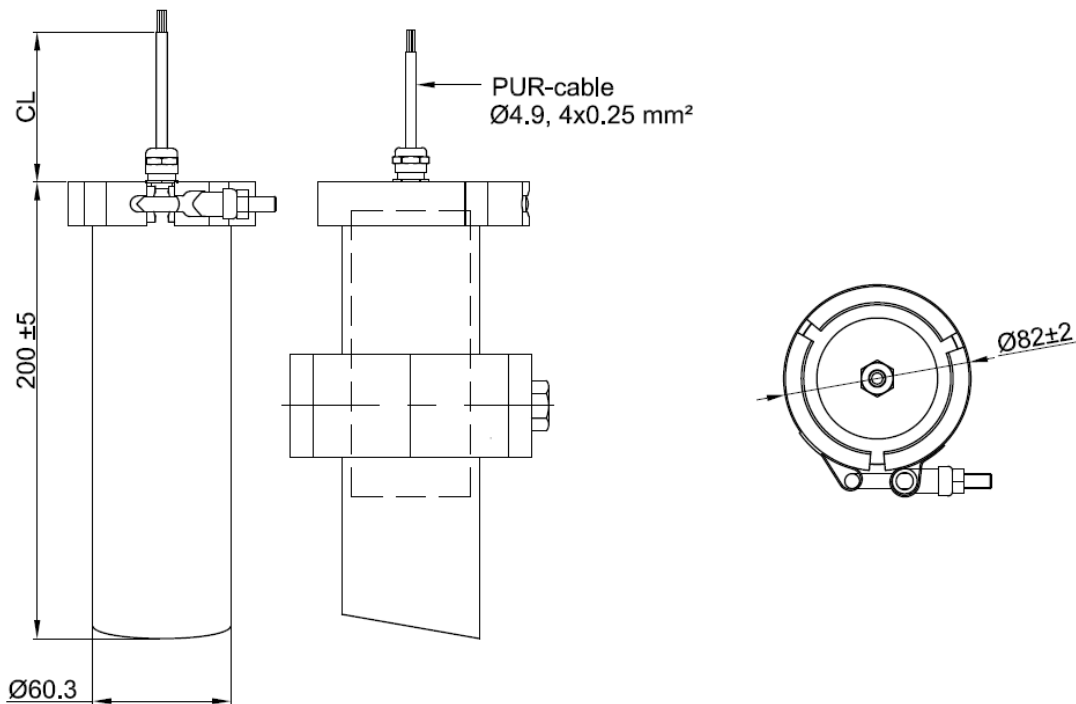
S = Standard (standard if letter is omitted)

B = Ballast

Cable length in decimeter

## Technical specification

<p>Power supply: 24 VDC (10 to 35 V)</p> <p>Output signal: 4 to 20 mA normal = 12 mA alarm &gt; 18 mA</p> <p>Load: 0 to 600 Ohm (24 V)</p> <p>Accuracy: ±2.0 cm</p> <p>Type of protection: IP 68 (20m 24h)</p> <p>Vibration: IACS E10 (0.7 G 13.2-100Hz 1 mm p-p 3-13.2 Hz)</p> <p>EMC: IACS E10</p> <p>Storage temp.: -30°C to +85°C</p> <p>Operating temp.: -25 to 85 °C</p> <p>Weight: Approximately 0.5 kg</p>	<p>Material protection: AISI304 or AISI316</p> <p>Material sensor body: Polyoxymethylene (POM-C) AISI304 or titanium</p> <p>Connection: PUR-cable with screen</p> <p>Safety parameters: U<sub>i</sub> = 25,5 VDC I<sub>i</sub> = 122 mA P<sub>i</sub> = 0,78 W C<sub>i</sub> = 73 nF L<sub>i</sub> = negligible</p> <p>Ex classification: Ex ia IIC T5 -25°C ≤ Ta ≤ 85°C Ga</p> <p>EC-Type Examination Certificate: 05ATEX1010 Issue 3</p> <p>Approvals: MED-B ABS, BV, LR</p>
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*Figure 4. GL-10 dimension*