Introduction - The easiest SOLAS Speed Log to install
SAL R1a is the fourth generation acoustic correlation SAL speed log for measuring relative speed – speed through water (STW). The speed log is designed to meet requirements as specified by authorities and shipowners. Its performance exceeds the various IMO specifications and has proven reliability in many thousand installations worldwide.

General description
The basic version of SAL R1a includes bottom arrangements, transducer, and electronics unit, all mounted in the bow area. SD displays as selected are installed in the bridge area.

The unit provides serial output signal according to IEC 61162-1/NMEA 0183 as well as 200 pulses per NM and analogue voltage output. Therefore it can be integrated and displayed in many different ways and systems.

Main features
• Closed ended installation - no need for water tight compartment or piping above sealine.
• Easy to install, with only a few mechanical parts and light weight bottom parts. The transducer mounting is made from the inside of the hull.
• Safe due to the rugged mechanical design and water tight cable.
• Pressure tested and approved according to PN16 (24 bar; 240 m).
• High performance because of the proven Acoustic Correlation technology.
• Space saving with the small and compact bottom parts.
• Easy set-up and calibration procedures from the bridge SD4 displays.
• Flexible calibration allows very accurate reading over the speed range.

Construction
• The electronics are mounted on a circuit board enclosed in a splash proof steel box. Cable glands are provided in the bottom plate of the box.
• Bottom arrangement with Easy Tank is available for both aluminium and steel hull construction.
• Watertight cable enables installation in wet and demanding environments.
• High watertight integrity and resistance to damage.
## System Performance Data

- **Working principle:** Acoustic correlation
- **Measuring distance:** 130 mm from surface of transducer
- **Frequencies:** 3.8 and 4.2 MHz
- **Speed range:** ±50 knots sensed speed
- **Speed accuracy:** <1% or 0.1 knot, whichever is greater
- **Distance accuracy:** <1%
- **Minimum water depth:** 3 metres below the transducer

## Electronics Unit

- **Serial speed output:** One, IEC 61162-1 3rd edition (NMEA 0183) (max load 100 ohm) (equal to 10 SD-indicators)
- **Analogue speed output:** One, 0.1VDC/knot (max load 5 mA)
- **Pulse speed output:** Two closing contact relays, potential free 200 p/NM (max load 30V/30mA or 15V/100mA)
- **Status output:** One power fail switching contact relay
- **Power supply for SD-indicators:** Max 3 SD-indicators
- **Power requirement:** 230/115VAC 50-60 Hz
- **Power consumption:** 30 watts nominal
- **Environmental requirements:** IEC 60945, 4th edition 2002-8
- **Dimensions:** 360 (+30) x 360 x 170 mm
- **Weight:** 10.5 kg
- **Colour:** RAL7035
- **IP class:** IP44

## Main Indicator

- **SD4-3:** Digital speed display
- **Dimensions:** 144 x 144 x 16 mm
- **Weight:** 0.6 kg

## Easy Tank

- **Transducer Dimensions:** Ø 168 mm
- **Height:** 85 mm
- **Transducer Weight including 10 m cable:** 5.5 kg
- **Bottom Flange weight steel:** 6.2 kg
- **Bottom Flange weight aluminium:** 2.1 kg
- **Total Dimensions including transducer:** Ø 168 mm
- **Height:** 85 mm

Available for both aluminium and steel hull constructions.

## Options

- SDR-2 Display Remote Control
- SD4-4 General Display
- SD4 External Dimmer

## Installation

1. **Mount the flange**
2. **Fasten the transducer**
3. **Easy tank installed**