

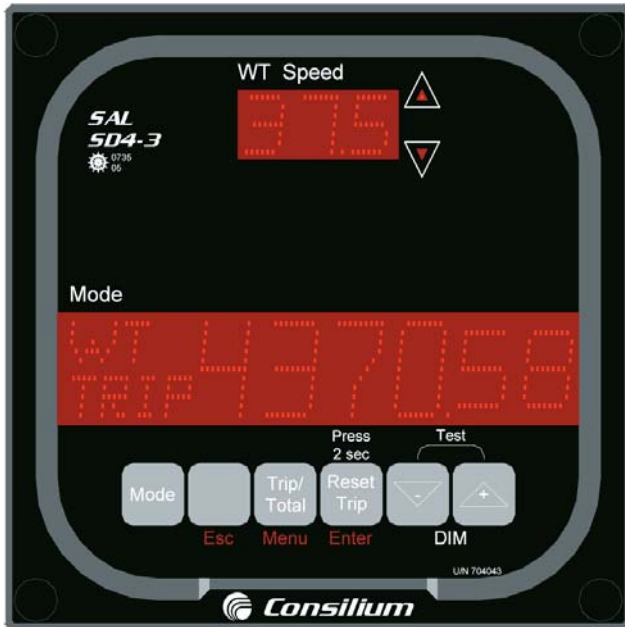
# Speed Log

## SAL R1a



### Introduction

SAL R1a is the fourth generation acoustic correlation SAL speed log for measuring relative speed – speed through the water. The 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.



Typical indicator SD4-3

### Main features of the SAL R1a log

- Acoustic correlation technology.
- Easy set-up and calibration procedures from the bridge SD4 indicator.
- Flexible calibration allows very accurate reading over the speed range.
- Small size bottom arrangement – transducer diameter 32 mm – for easy installation.
- Bottom arrangements are fully compatible with previous models of SAL Imcor and SAL R1.
- A number of various bottom part adapters enables retrofit, exchange of existing systems, even on ships afloat.

### General Description

The basic version of SAL R1a includes bottom arrangements – alternatively with or without sea valve, transducer, electronics unit all mounted in the bow area and SD-indicators as selected 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.

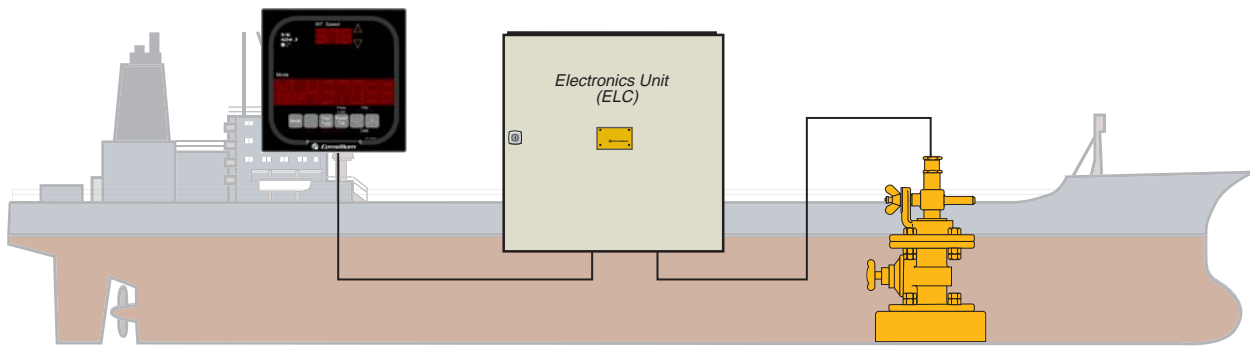
### Construction

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 arrangements are available for both single and double bottom hull constructions including sea valve for easy access and maintenance, and if necessary, exchange of transducer from inside without dry-docking.



Single bottom arrangement with sea valve



## Specification

### System Performance Data

Working principle	Acoustic correlation
Measuring distance	130 mm from surface of transducer
Frequencies	3.840 and 4.196 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 – SAL R1a

Part number	703800
Serial speed output	One, IEC 61162-1 2nd edition (NMEA0183) (max load 100 ohm) (equal to 10 SD-indicators)
Analogue speed output	One, 0.1 VDC/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	230/115 VAC 50-60 Hz.
Power consumption	30 VA nominal
Environmental requirements	IEC 60945, 4th edition 2002-8
Dimensions	360 (+30) x 360 x 170 mm
Weight	10.5 kg
Colour	RAL7032

### Main Indicator

SD4-3	Digital speed display Total and trip distance counter
Part number	704043
Dimensions	144 x 144 x 16 mm
Weight	0.6 kg

### Transducer – TRU R1

Dimensions	32 mm (Ø) x 160 mm (length). Cable moulded to the transducer <i>Note! Never cut or alter the cable!</i>
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TRU R1 – 30 metres cable	Part number 705050 Weight 3.7 kg
TRU R1 – 40 metres cable	Part number 705051 Weight 3.9 kg

### Bottom arrangements

MSSBSV	Single bottom with sea valve
Part number	71-21540-00
Weight	24.0 kg
MSDBSV	Double bottom with sea valve
Part number	71-21560-00
Weight	24.2 kg
MSSB	Single bottom, no sea valve
Part number	71-21520-01
Weight	20.1 kg

### Optional adapters available

Jungner SAL –24	SAL EM
Sal-Accor	Sperry 331/ 301
Raytheon DSL 450	Hokushin EML12/13 w. 35 mm sword
Simrad NL, Furuno DS-782	“Russian EM-log” ELM02



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