

SAL Speed Log

SD4 Serial Digital Displays

Introduction

The SAL SD4 is a versatile instrument used primarily as a display to indicate speed, distance and depth. It can also be used to remotely control such equipment, which is not easily accessible or has no user interface, for example a speed log or an interface cabinet.

The SD4 display is intended as a successor to the SD1 and SD2 displays. The different display versions of the SD4 series are utilised using the same main display body with different front panel foils.

**SD4-1 One axis
WT and BT**



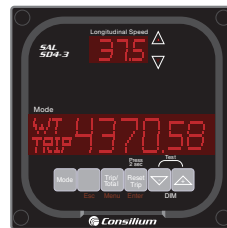
*SAL T1 systems
P/N: 704041*

**SD4-2, Two axis
WT and BT**



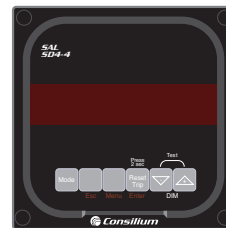
*SAL T2/T3 systems
P/N: 704042*

**SD4-3, One axis
WT**



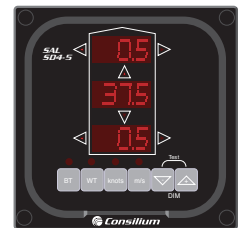
*SAL R1a systems
P/N: 704043*

**SD4-4, General
display**



*General use
P/N: 704044*

**SD4-5, Docking
log display**



*Docking log systems
P/N: 704045*

General Design

The display has two small and one big display windows. Depending on type of display some windows can be partly or completely covered by the front panel foil. Two small SPEED WINDOWS are positioned over each other in the upper part of the display. The big MODE WINDOW is positioned on the bottom. The display elements in each SPEED WINDOW consist of 90 surface mounted LED's positioned to perform three digits in a 7-segment manner. The MODE WINDOW consists of 1056 LED's positioned in 11 rows by 96 columns making it possible to display both text and digits in various sizes.

46 LED's are used for direction arrows, status indication and backlight illumination of text printed on the panel foil.

To operate the display there are 6 pushbutton positioned below the MODE WINDOW.

General Function

All display versions will decode all defined messages and display all possible information if available. Generally, all displays can enter all requested modes. The mode window can display various information. For example, total and trip distance, speed, depth and rate of turn depending on which modes are enabled in the display set-up.

12 counters are used for trip and total distance run information. WTL trip, WTL total, WTT trip, WTT total, WTR trip, WTR total, BTL trip, BTL total, BTT trip, BTT total BTR trip and BTR total.

Distance run information is normally transmitted as an NMEA message from the speed log. If no such messages are sent to the display, calculation of trip and total distance is done locally in the SD4 display. The counters will be stored in E2PROM in case of a power failure.

EL backlight of the membrane switches is integrated in the panel foil. As soon as any push button is pressed the EL lamp will be turned on and stay on for 5 minutes. By pressing both "DIM" keys simultaneously during operation, the display will light all segments and indicators.

External DIM is possible by using two external push-buttons.

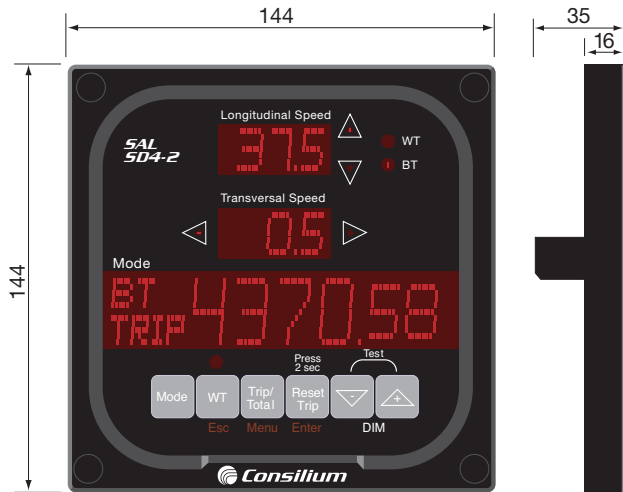
All SD4 versions have the feature of receiving remote message transmitted from another SD4 instrument. When this is done the receiving SD4 changes its light level to the same intensity as the transmitting indicator.

All displays are able to transform the received speed value to 200 pulses/nautical miles on their output.

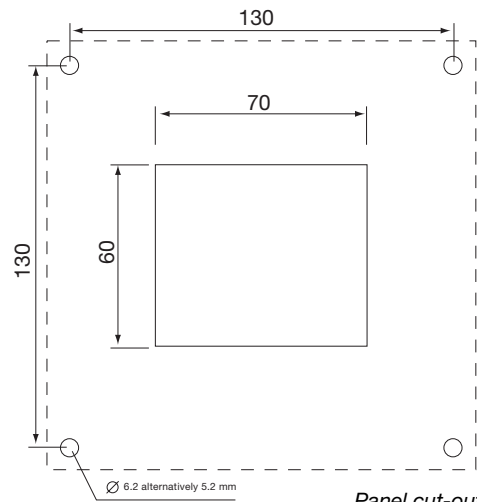
Mounting

The four attaching holes in the display are threaded with an M6 thread making it possible to mount the display either with four M6 screws from the back or with four M5 screws from the front using nuts on the

backside. When the display is mounted on a flat surface using M5 screws with nylon washers from the front and the provided neoprene gasket is used, a protection of IP66 is achieved



Overall dimensions



Panel cut-out

Technical data

Powering

Input voltage 10 - 32 VDC (12 or 24 VDC nominal)
Current 450 mA maximum, maximum light level & "lamp test" 250 mA typical

Environmental conditions

As required by IEC 60945 4th edition.
If mounted in watertight cabinet according to "exposed" category, otherwise "protected".
Watertight as required by IEC 529 category IP66 if mounted in SD4 BMB box or panel mounted on a flat surface.

Dimensions

144 x 144 x 16 mm, mounts in standard panel cutout

Inputs and outputs

Serial Isolated IEC61162-1 (NMEA) standard input.
Standard IEC61162-1 (NMEA) output, based on RS485 driver
Remote inputs 3 inputs with internal pull-up to +5V, activated by grounding to 0V.
+5VDC output One output with 35mA current capacity.

Connections

Connections of power inputs and output are done via a 10-pole plug-in terminal, maximum cable area 1.5 mm².

Accessories

SD4BMB, Bulkhead mounting box
for mounting the indicator on any flat surface.

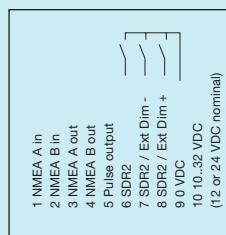
SD4SA, Stand Alone mounting box
for Gimbals mounting (standing or hanging) of the indicator.

SD4EB, Extension board
is equipped with two N/O relays, to obtain potential free 200p/NM speed pulses for other users. (max load 30V/30mA or 15V/100mA).

SD4ED, External Dimmer
to DIM one instrument from a remote position.

SD4SDR2, Remote control
to access the SD4 instrument from a remote position.

SDP, AC power supply
to be mounted beside the indicator. Current capacity: 230 VAC, two SD-indicators. (115 VAC, one SD-indicator)



Terminal Connections



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