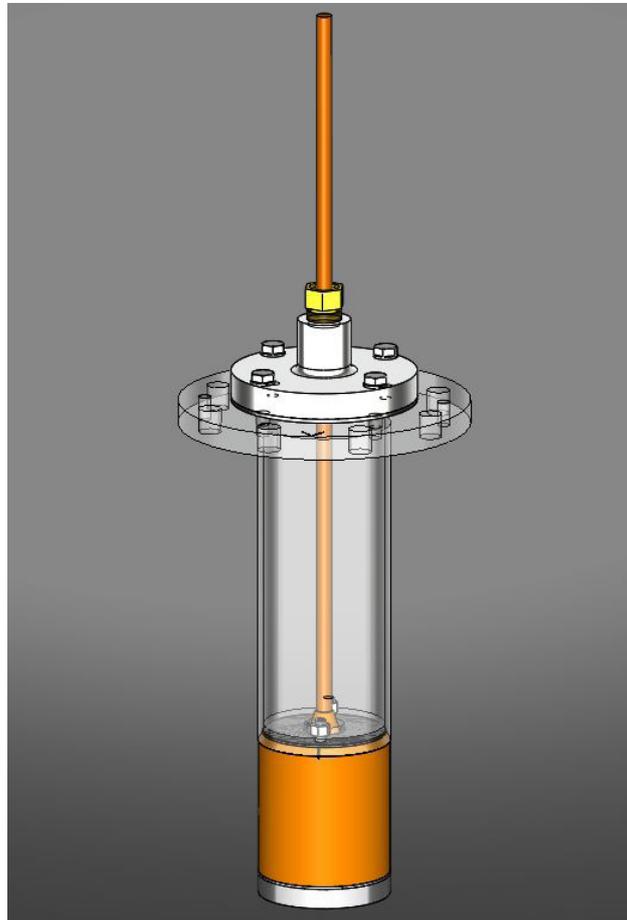


# SKIPPER

## Installation manual DL2 Doppler speed log retrofit for DL850 540kHz



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# INTRODUCTION

This document describes how to retrofit a SKIPPER DL2 Doppler speed log from an existing DL850 540kHz .

The following existing DL850 parts is possible to be reused:

1. Sea valve ETNSLB
2. The cable between Display unit (on the bridge) and transceiver unit .

Please note:

Reuse existing cable and sea valve only if they are operative and in good condition. SKIPPER can not guarantee the functionality of old reused material.

The sensor is possible to replace the with vessel afloat.

The replacement will require

1 x DL2 Display CU-M001-SA

1 x Electronic unit JB70D2-SA

1 x Sensor for retrofit into existing ETNSLB 100mm sea valve DL2SE-SA

1 x Junction box JB12-SA to connect the sensor cable to the existing cable going from bow to bridge.

This manual covers the special requirements when retrofitting DL2 from DL850 540kHz.

For DL2 detailed installation instruction, please see DL2 installation manual.

For the sea valve ETNSLB detailed intallation instructions, please see ETNSLB installation manual.

Please note:

A DL2 does not have any analogue outputs 0-10V/4-20mA.

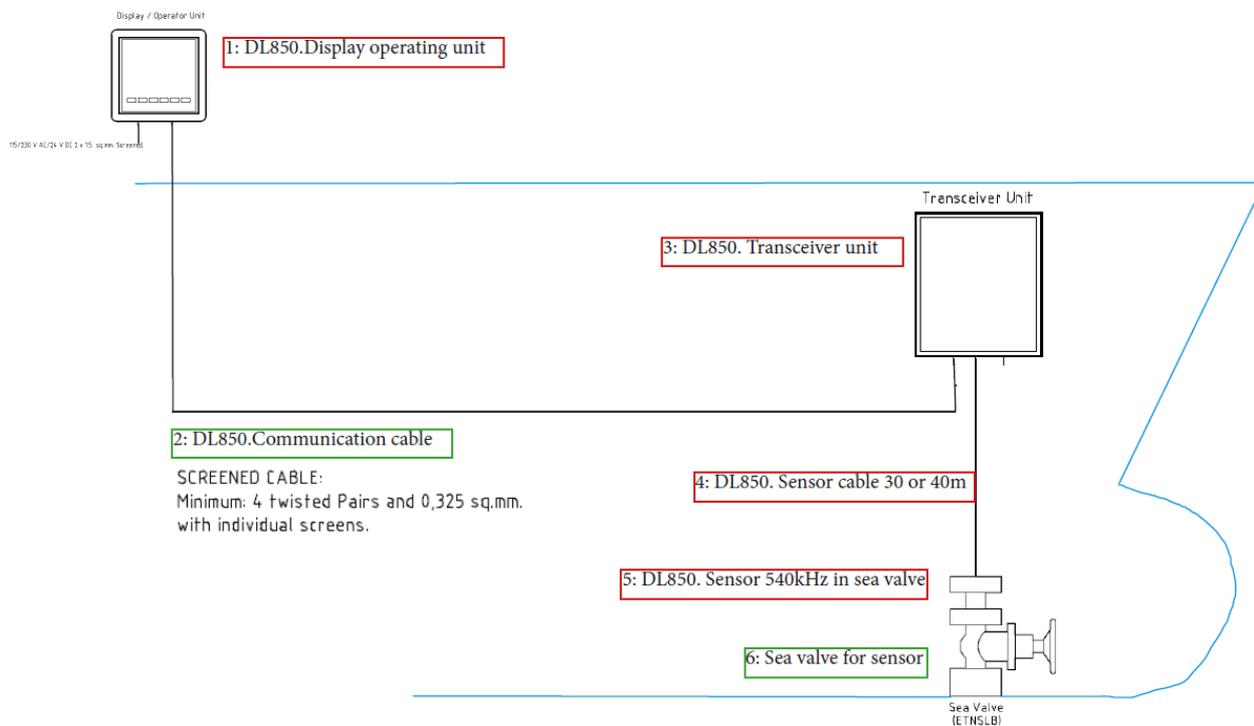
If such outputs were in use on the DL850 unit it may require replacement of old external equipments. (example: old analogue repeaters will have to be replaced with new NMEA repeaters.)



DL2SE-SA Sensor DL2 with adaptor to fit into ETNSLB Sea valve.

# PREPARE SPEED LOG REPLACEMENT

The DL850 540kHz speed log to be replaced consist of the following main parts:



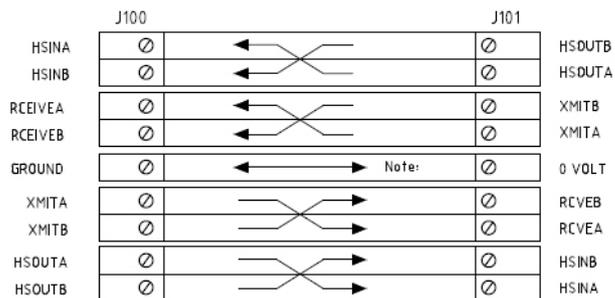
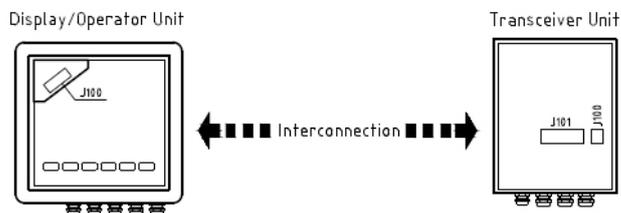
## 1: Operator Unit.

To be replaced by SKIPPER CU-M001-SA

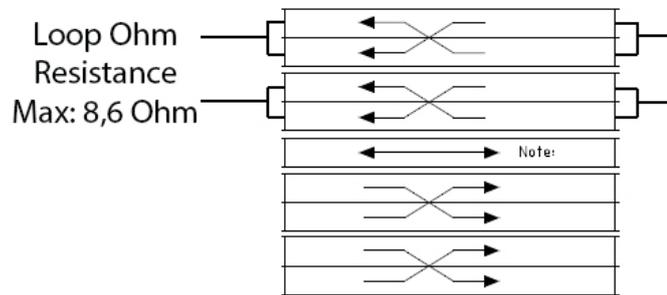
## 2: Communication cable from operator unit to Transceiver unit.

May be reused for DL2

The cable between Display unit (on the bridge) and transceiver unit (within 40m distance from the DL850 sensor) is a 4 pair cable with individual screen and a minimum size of 0.325mm.



- This cable may be reused for the DL2 between Electronic unit JB70D2-SA and the Junction box JB12-SA. The requirement for DL2 cable is 3 twisted pairs with individual screens.
- There is a limitation in reusing this cable for the 24VDC supply to the sensor. 24VDC may drop if supplied by use of a very long and thin cable. The cable total inner resistance should not exceed 8,6 Ohm. See DL2 installation manual for details.
- The DL850 cable is a 4 pair cable so it is recommended to use two of the pairs in parallel for the 24VDC.
- The loop resistance of the 24VDC pair should not exceed 8,6 Ohm



3: Transceiver unit

May be replaced by a terminal box JB12-SA.

4: Sensor cable 30 or 40m.

Replaced by integrated 40m cable in DL2 sensor. The new sensor cable is thinner than the old. 11mm diameter.

5: Sensor 540kHz

To be replaced by DL2SE-SA sensor with 40m cable

6: Sea valve ETNSLB

To be reused for installation of DL2SE-SA sensor.

# INSTALLING THE DL2

Please see the DL2 Installation manual for power requirement to CU-M001-SA and JB70D2-SA units.

The Junction box JB12-SA is only a terminal box with no power requirement.

The CU-M001-SA Display operator unit may be positioned in the same area as the replaced DL850 Operator unit was. The CU-M001-SA is of less physical size than the replaced display unit.

The JB70D2-SA Electronic unit includes In/Outputs for external equipment. This require the JB70D2-SA to be positioned close to the wheel house area to route the external equipment cabling.

The communication cable requirement for DL2 is 3 twisted pair individually shielded. 1 pair used to supply 24VDC power from JB70D2-SA to Sensor DL2SE-SA. The diameter of cable may limit the maximum length of cable.

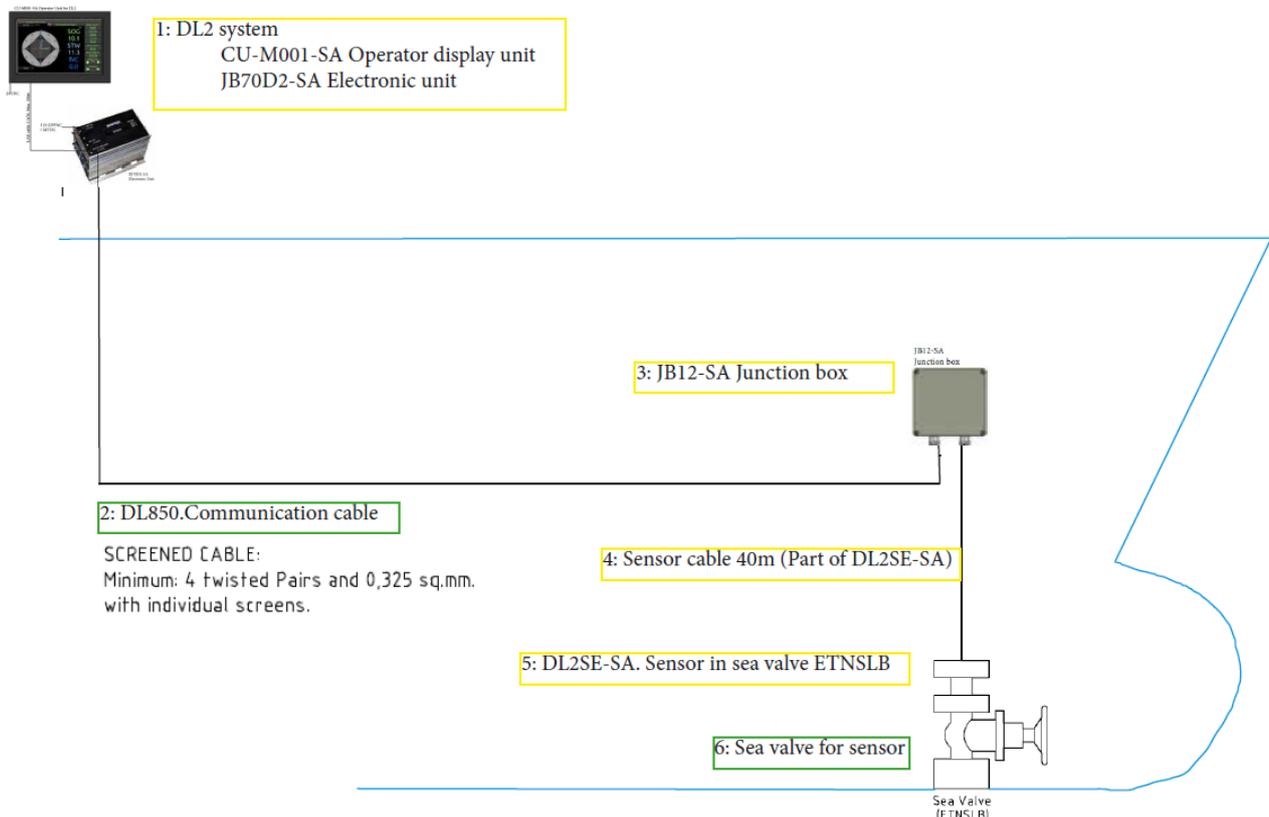
The DL850 cable is a 4 pair cable so it is recommended two use two pair in double for the 24VDC.

Example: Minimum spec of DL850 cable is 0.325sq.mm.  $2 \times 0.325 = 0.65\text{sq.mm}$ .

The maximum length of cable 0.65 sq.mm is 180m.

An alternative may be to supply 24VDC at junction box by replacing JB12-SA with JB40POW-SA.

The DL2SE-SA sensor is included a moulded in 40m cable. This assures a completely water tight sensor and will not be destroyed by flooded sensor area such as the old DL850 sensor did.



**JB70D2-SA  
Electronic unit**

