Installation manual
DL850S27D-SB
DL850 Doppler Speed log sensor
DOLOG 2X replacement
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Prepare speed log replacement</td>
<td>4</td>
</tr>
<tr>
<td>Install of sensor adaptor kit</td>
<td>5</td>
</tr>
<tr>
<td>Remove old dolog sensor</td>
<td>6</td>
</tr>
<tr>
<td>Prepare sensor for installation</td>
<td>7</td>
</tr>
<tr>
<td>Install DL850 sensor in dolog tank</td>
<td>8</td>
</tr>
<tr>
<td>Drawings</td>
<td>9</td>
</tr>
</tbody>
</table>
INTRODUCTION
This document describes how to install a SKIPPER DL850 100mm sensor into an existing DOLOG 2X (DOLOG 21/22/23) tank.

The sensor replacement is recommended to be performed in dry dock. It is possible to replace the sensor with vessel afloat. This procedure includes the diver procedures.

The replacement will require new DL850 Operator unit, transceiver unit and sensor. For Operator unit and Transceiver unit installation instruction, please see respective manuals.

This procedure will mainly cover replacement of DOLOG sensor.
DL850S27D-SB consist of:
• DL850S27-SB Sensor DL850 270kHz
• KIT-DOLOG-M1-SA Kit DOLOG 2X

Tools needed for this upgrade are:
• allen key 8 mm
• 1/2” Extension tool min 250 mm.
• 1/2” Ratchet

A tool kit is available to help remove old DOLOG sensor and install the new DL850S27D-SB sensor. The parts are described in “Drawings” section in the end of this manual. This tool kit is sold separately.
PREPARE SPEED LOG REPLACEMENT

The DOLOG speed log to be replaced consist of the following main parts:

1: Operator Unit.
   To be replaced by SKIPPER DL850 Operator unit

2: Cable from operator unit to Electronic unit.
   May be reused for DL850

3: Electronic unit
   May be replaced by a terminal box for DL850 communication.

4: Cable Electronic unit to terminal box.
   May be reused for DL850

5: Terminal box.
   To be replaced by DL850 Transceiver unit (24VDC and/or 115/220V AC requirement)

6: Sensor cable
   To be replaced by DL850 sensor with 40m cable

7: DOLOG tank
   To be reused for installation of DL850 sensor with DOLOG adaptor

8: DOLOG sensor
   To be replaced by DL850 sensor with 40m cable
The sensor cable pipe (orifice tube) on the housing is part of the ship hull and has to reach above waterline (CWL=Construction water line.)

If sensor is replaced by diver in water this construction will enable water to come into the orifice tube construction but will stop at the level of water line.

The pipe has a watertight gasket in both ends.
INSTALLING SENSOR ADAPTOR KIT

Install the sensor into the DOLOG adaptor as described in drawing. Sensor forward (ahead) mark to be correctly positioned. (The gasket, washers and 36 mm nut from DOLOG will not be available before old DOLOG sensor cable is removed)
REMOVE OLD DOLOG SENSOR

Before old DOLOG is removed please prepare DOLOG sensor cable to be removed.
- Cable end unscrewed from terminal box.
- A long rope fastened to cable end. This rope will be used for pulling up the new DL850 sensor cable later.

Unscrew the 4 screws with a 8mm Allen key.
There are 2 levels of threads.
- Threads in tank
- Threads in sensor
Do only unscrew the tank threads so the screw hang in sensor as described in below picture.

The sensor is now loose but most probably stuck. To force the sensor out of tank use the removal tool or similar. When loosened, disconnect cable plug.

Use a crow foot 36 mm, 1/2 inch extension and rachet to unscrew 36 mm nut inside tank.
Store the 36mm nut and gaskets (if yet removed) in a safe place for reuse on SKIPPER sensor.

Pull out cable and bring cable with rope to a dry place. The rope is now going all the way from top of tank pipe, through pipe and tank and to the dry place.
PREPARE SENSOR FOR INSTALLATION

Install the 36 mm nut and gasket onto the 40 m cable of new DL850 sensor.

**NOTE** If installed by diver with vessel afloat:
The sensor cable is now going to be lowered into salt water.
Avoid water from penetrating into cable end during diving operation.
To avoid salt water to penetrate into cable and cause corrosion, please cover the cable end with screen.

Fasten the rope to new DL850 sensor cable end.
INSTALL DL850 SENSOR IN DOLOG TANK

The new DL850 sensor adaptor is preinstalled with 2 x M10x80 mm screws. The two holes not preinstalled will be used during installation. Install the 400 mm threaded bolts into tank in the position of the two holes.

Mount adaptor plate with new sensor onto the threaded bolts. Secure with 2 x wing nuts and washers.

The new sensor cable may now be pulled up the tank pipe. Fasten gasket and 36 mm nut.

Raise the complete sensor with help of the 2 x wing nuts. When in upper position fasten the 2 preinstalled M10x80 mm screws.

NOTE: When sensor is raised and secured with 2 x Screws M10 x 80 mm. Remove the 2 x 400 mm threaded bolts. Fasten the next 2 x M10x80 mm screws were threaded bolts are removed.
### ITEM NO. | PART NUMBER | DESCRIPTION                                      | QTY.  |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TC-2062</td>
<td>Adapter plate for Dolog replacement 100 mm sensor</td>
<td>1</td>
</tr>
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<td>2</td>
<td>ZOA-01218</td>
<td>Circuits 7 mm DIN6799 A2</td>
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</tr>
<tr>
<td>3</td>
<td>ZOA-01071</td>
<td>Spring washer M10 DIN127 B A4</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>ZOA-01070</td>
<td>Spring washer M8 DIN127B A4</td>
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<tr>
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<td>ZOA-01081</td>
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<td>1</td>
</tr>
<tr>
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<td>Screw M8 x 130 DIN912 A4</td>
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<td>8</td>
<td>TC-2063</td>
<td>Screw special M10x80 Dolog replacement</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>TC-2061</td>
<td>Bar Dolog replacement</td>
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<tr>
<td>10</td>
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<td>DESCRIPTION</td>
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</tr>
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<td>ZOA-01226</td>
<td>Wing nut M10 DIN315 4 EZ CR3+</td>
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</tr>
<tr>
<td>4</td>
<td>ZOA-01224</td>
<td>Tool Dolog sensor removal</td>
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</tr>
<tr>
<td>4</td>
<td>ZOA-01228</td>
<td>Washer M10 DIN9021 steel</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>ZOA-01227</td>
<td>Crow foot 36 mm</td>
<td>1</td>
</tr>
</tbody>
</table>