Procedure for Packing, Preserving Handling and Shipping of Subsea Pressure and Temperature Sensors
# Revision List

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<tr>
<th>Rev</th>
<th>Date</th>
<th>Description</th>
<th>Author</th>
<th>Reviewed</th>
<th>Approved</th>
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<tr>
<td>X1</td>
<td>30.08.07</td>
<td>Replaces doc no. 75.200.082</td>
<td>TKG</td>
<td>MÅS</td>
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<tr>
<td>0</td>
<td>10.09.07</td>
<td>AFC</td>
<td>TKG</td>
<td>JS</td>
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<tr>
<td>A</td>
<td>15.09.08</td>
<td>Changed logo and layout added table of content</td>
<td>KAA</td>
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<tr>
<td>C</td>
<td>08.02.2010</td>
<td>Section 9.5 added</td>
<td>AE</td>
<td>S.M.M</td>
<td>TKG</td>
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<tr>
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<td>14.09.2012</td>
<td>Updated storage temp 7.1 and added text 9.1</td>
<td>CF</td>
<td>SM</td>
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<td>E</td>
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<td>CS</td>
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<td>F</td>
<td>05.04.2013</td>
<td>Added Connector protection cap</td>
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<td>SM</td>
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<tr>
<td>G</td>
<td>11.11.2013</td>
<td>Changed document name, corr reference in item 10.1, 9.4 ref corr, temp removed</td>
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<tr>
<td>I</td>
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<tr>
<td>J</td>
<td>22.03.2017</td>
<td>Section 7. Added humidity information and high voltage warning. Section 9. Added high voltage warning.</td>
<td>AE</td>
<td>EV</td>
<td>BH</td>
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<tr>
<td>K</td>
<td>02.10.2019</td>
<td>Added section 5.5 – Humidity control</td>
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1 SCOPE

This procedure shall cover the packing, unpacking, preserving, handling and shipping activities for the Subsea Pressure and Temperature Sensors.

2 PURPOSE

The purpose of this procedures is to ensure proper performance of activities mentioned in item 1 above.

3 RESPONSIBILITY

Department Manager is responsible that the contents of this procedure is known to the personnel engaged in above mentioned activities and that the necessary documentation is accompanying the goods.

4 HEALTH AND SAFETY

Manual Handling, Lifting and Carrying are known to be the largest contributors to occupational ill-health. Ensure that mechanical handling aids are used whenever possible to avoid manual handling. Where manual handling is considered appropriate for the task safe lifting guidelines must be followed, e.g. adopt correct posture, consider team lifting, employ safe lifting technique, etc.
5 PACKING

5.1 For packing, Wooden Crates for up to 6 off or 3 off sensors shall be manufactured.

5.2 The design/production of the Wooden Crates shall be as shown in the sketch in Ch. 12 below. The inside of the crates will be filled with preformed padding.

5.3 The packing design and procedure shall ensure that the equipment is lying stable during transportation.

5.4 Sensors shall have the ring groove/probe plastic cover fitted before packing. Sensor probe ends shall not be less than 20mm from the packing box wall. This is to prevent damage from external box impacts and ease install and removal.

5.5 Unterminated sensors with MK-II, Autoclave/Butech or JIC adapter only:

In order to maintain low humidity and prevent moisture build up in the location of the glass to metal penetrator, a combination of silica gel and sealing tape shall be used.

Before packing, one packet of silica gel is to be placed on top of the glass to metal penetrator before the MK-II adapter is installed (orings not used). Once the MK-II adapter is installed, sealing tape (tesa 50600 standard) shall be applied around the MK-II adapter over the hose exit hole and over the top of the fill screw.

Silica Gel placed on top of penetrator

MK-II adapter installed and sealing tape applied
6  UNPACKING

**CAUTION:**  THE SENSOR SHALL ONLY BE REMOVED FROM ITS PACKAGING BY PERSONNEL AUTHORISED BY THE CUSTOMER REFERRED TO IN THE PACKING LIST AND CONSIGNMENT NOTE!

6.1.  Ensure that the crates are positioned flat on the floor with the correct side uppermost.

6.2.  Open the hard case lid, remove the insulation/padding holding the sensors.

6.3.  Handle the sensors with care during operations.

7  STORAGE

7.1.  Equipment shall be stored in a covered and dry area, humidity control is not required.

    Storage temperature:  -40 to +70°C.

7.2.  The equipment should be stored in the hard case used for transportation.

7.3.  The equipment is to be stored away from any vibration sources.

7.4.  The equipment is to be stored away from high voltage sources.

8  CRITERIA FOR PRESERVATION

8.1  The Crates shall be labelled as follows:

    ELECTRONIC EQUIPMENT
    HANDLE WITH CARE
    MADE IN NORWAY

8.2  The equipment shall not be stored in vibrating areas.

8.3  Fork lift’s shall be used with care and only when strictly required.

8.4  All shock loads shall be avoided.
9 HANDLING

9.1 The Sensors are measuring instruments utilising very sensitive sensor elements.

**CAUTION:** Handle the sensors with care through all activities, such as termination, hyp test etc., until ready for final assembly.

Note:
All sensors shall have installed, a protective cover for the ring gasket surface/probe and the electrical connector if applicable.
The sensors are also marked with a warning sign indicating that no mechanical object should be placed into the probe tip.

9.2 DO NOT DROP.

9.3 DO NOT expose the equipment to vibration and shock.

9.4 DO NOT expose the equipment to high voltage sources.

9.5 DO NOT expose the equipment to environment conditions beyond the storage specifications. ref. item 7 above, or the operational environment specification, if operational.

9.6 To assist with the lifting of heavier sensors, a suitable rated and certified soft fabric strop should be used in a double hitch (to prevent slippage) attachment just behind the flange. Before any lifting is carried out it is recommended that the probe and flange sealing areas are suitably protected.

10 SHIPPING AND MARKING

10.1 The sensors transmitter shall be shipped in the Wooden crates described in Ch. 5 and Ch.12.

10.2 All markings shall be legible, permanent and un-obscured.

11 STACK LIMITATION

11.1 Crates with max. 6 off sensors: 2 CRATES MAX.

11.2 Crates with max. 3 off sensors: 3 CRATES MAX.
12 TRANSPORTATION CRATE

12.1 Crate for Maximum 6 off sensors

12.2 Typical packing of 6 off sensors within the Crate in 12.1
12.3 Crate for Maximum 3 off sensors

12.4 Typical packing of 3 off sensors within the Crate in 12.3