DNV·GL

Certificate No:
TAA000021W

TYPE APPROVAL CERTIFICATE

This is to certify:

That the SC 1000 Monitoring System and Probes

with type designation(s)
SC1000 Controller/Display, ULTRATURB SC, pHD Sensor/Flow Cell, Conductivity Probe Assembly

Issued to
Hach Lange GmbH
Düsseldorf, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**A**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board**

Issued at **Hamburg** on **2019-04-05**
This Certificate is valid until **2024-04-04**.
DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Dariusz Lesniewski**

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-027312-1**
Certificate No: **TAA000021W**

Product description

SC 1000 Multiparameter Universal Controller [LXV400.99.00121, LXV400.99.00122] without Power Cable [LXV400.99.20121, LXV400.99.20122] with Power Cable [YYL112] **SC 1000 Display** [LXV402.99.00201, LXV402.99.00202] consisting of Ferrite Bead [9625600], Base Cable [6122900-001]
Power supply: 100-240 V AC 50/60Hz (by external power line filter)
Inputs: 4 digital sensors
Outputs: 4 analogue 0/4-20 mA
Display: ¼ inch VGA graphical backlit TFT color Glas/Glas Touch screen, 320x240 pixels
External Power Line Filter: TE Connectivity 6609046-5 / Corcom 6ET3
Mounting: wall mounting
Degree of protection: IP65
Software/Fimware: V3.35
ULTRATURB SC Seawater Turbidity Sensor [LPV415.99.32001, LPV415.99.82001]
Power supply: +12 VDC (supplied by SC 1000 Controller)
Operating: in connection with SC 1000 Controller
Mounting: inside cabinet, wall mounting
Degree of protection: IP65
6122400 Extension Cable
Differential pH Sensor (pHD) [DPD1P1.99, DPD1P1.99M] **ph Flow Cell** [9180100]
Power supply: +12 VDC (supplied by SC 1000 Controller)
Operating: in connection with SC 1000 Controller
Mounting: inside cabinet, wall mounting
Degree of protection: IP65
Base Cable [6122900, 6122900-001]
Conductivity Probe Assembly [D3725E2T.99M], consisting of:
Inductive Conductivity Sensor [3725E2T03N] with Base Cable [9625300]
Electrodeless Conductivity Gateway [6120800.99] with ESD Boot [8665700]
Conductivity Probe Flow Cell (Knick) [LZU215.99.1E120]
Operating: in connection with SC 1000 Controller
Mounting: inside cabinet, wall mounting
Available Extension Cables [8665600-001, -005, -010]

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE