DNV·GL

Certificate No:
TAA00001EA

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Main Alarm System

with type designation(s)
SG-3000

Issued to
Schneider Electric (China) Co., Ltd.
,

is found to comply with
DNV GL rules for classification – Ships

Application :

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

Issued at **Hamburg** on **2017-10-19**
This Certificate is valid until **2022-10-18**.
DNV GL local station: **Shanghai**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

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: **262.1-027023-1**
Certificate No: **TAA00001EA**

Product description

The system performs the following functions as an alarm monitoring system:
- Alarm management;
- Alarm extension system;
- Privilege management;
- Monitoring and supervision (SCADA of workstation)
- Monitoring of measurements or events
- Mimics display
- Printing alarms/events/logs
- System diagnosis

Per customer requirements, below functions can be integrated:
- Engineering call
- Dead man alarm function

Each application can include all or parts of the functions listed above.

The software library version for all the process is V1.1

Application/Limitation

Product certificate
As specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the alarm and monitoring system 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 the certification the clause for application software control will be put into force.

The following project related documentation is to be submitted:
— Control system functional description
— System block diagram (topology)
— Power supply arrangement
— Data sheets with environmental specifications
— List of monitored points
— Circuit diagrams
— Software change handling procedure
— Test procedure at Manufacturer.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed.

Type Approval documentation

2. Alarm Mornitoring System SG-3000 Description_SEDOC1501-AMS__V1.0.2
3. Alarm Monitoring System SG-3000 Hardware and External equipments List(SEDOC1503) _V1.1.0
6. Alarm Mornitoring System SG-3000 Function Specification_SEDOC1506-AMS__V1.0 .1
7.Marine Systems - Change Management Plan_SEDOC1507-AMS_
8.Marine System - Change logs_SEDOC1508-AMS_
9. Alarm Mornitoring System SG-3000 Function Flow Chart and Interface Specification_SEDOC1509-AMS__V1.0 .1
10.Alarm Mornitoring System SG-3000 User Manual_SEDOC1509-AMS__V1.0.1
11.Test sheet - MR - Test01 Alarm Management V1.0.1_GL
12.Test sheet - MR - Test02 Failure Test procedure V1.0.2_GL
13.Test sheet - MR - Test03 Basic FuntionsTest procedure V1.0.2_GL
14.Test sheet - MR - Test05 Network Performance Test procedure V1.0.2_GL
Test 1 Alarm Management
Test 2 Failure Scenario
Test 3 Basic Functions
Test 5 Network Performance

Tests carried out

Functional tests according to DNVGL CH 4 Pt 9 for alarm and monitoring systems
Test 1 Alarm Management
Test 2 Failure Scenario
Test 3 Basic Functions
Test 5 Network Performance

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 typeapproved 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