



Certificate no.:
TAA00003GD

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **General Control System**

with type designation(s)
slcBUS System Components

issued to

sm electrics GmbH services & more
Schönberg (Holstein), Schleswig-Holstein, Germany

is found to comply with

DNV 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.

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

Issued at **Hamburg** on **2024-09-30**

This Certificate is valid until **2029-09-24**.

DNV local unit: **Hamburg – CMC North/East**

Approval Engineer: **Jens Dietrich**



for **DNV**

Digitally signed by: Dariusz Lesniewski
Location: DNV Hamburg, Germany

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.



Form code: TA 251

Revision: 2023-09

www.dnv.com

Page 1 of 3

Product description

Components for signal light column control:

slcBUS smart controller module SCM 710.24.6.5

Part no. 771316

The *slcBUS controller* is the central part typically mounted in signal control unit assembly box located in the ECR or ER. It has connectors for up to six signal light column lines including six fused 230VAC power ports and six RS-485 ports.

- SME-bus: RS485 (Modbus RTU)
- 13 binary signal inputs
- Binary inputs for 4 zones, with 13 inputs for each zone
- Binary outputs for failure indication and Dead-Man-Alarm
- Module power supply: 24VDC

slcBUS smart receiver module SRM 710.24.14.3

Part no. 771316

The *slcBUS Receiver* is designed to be installed in each individual signal light column

- SME-bus: RS485 (Modbus RTU), auto-addressing
- 13 relays to switch 230VAC (2A) for symbols, strobe lights and sounders
- Fused 230VAC supply terminal to directly connect a hybrid cable
- Input for illuminated push button for a dead man alarm reset or a column lamp test
- Module power supply: 24 VDC

Approval conditions

Type Approval covers hardware listed under Product description.

The components listed under product description are used to build a signal light column system for machinery spaces.

The signal light column system needs to be designed to meet the requirements in the IMO Code on Alerts and Indicators A.1021(26). Used signalling devices (not part of this type approval) may need individual type approval (i.e. fire alarm sounders).

Failures of the system or related power supplies shall be indicated by an audible and visible alarm. Provision shall be made to enable periodic functional testing of the alerts and indicators.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board.

Type Approval documentation

Drawings: Controller Mechanical 771316-102-20231026, Rev.0.9;

Receiver Mechanical 771317-102-20231026, Rev.0.9.

Controller data sheet 20230704, Receiver data sheet 20230704.

Functional Performance Test Initial_audit_tests_slcBUS_20240210, witnessed 2024-02-13.

System Description slcBUS System 20231101.

Test Reports: TREO 193-24, issue 1; 099-24, issue 1.

Assessment report issued by DNV Hamburg 2024-02-13.

Tests carried out

Applicable tests according to DNV CG-0339, 2021.

Functional Performance Test.

Marking of product

The modules are labelled with:

- www.sm-electrics.de
- type designation (SCM 710.24.6.5 or SRM 710.24.14.3)
- power supply rating
- part number.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