

EU RO MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

This Certificate is issued to

MAN Diesel & Turbo SE
Augsburg, Bayern, Germany

for

Computers and Programmable Logic Controllers

with type designation(s)

CM-S Control Module, DM Display Module

The product is found to comply with

EU RO Mutual Recognition Technical Requirements for Computers and Programmable Logic Controllers

EU RO Mutual Recognition Technical Requirements for Touch Screen i.e. a Display Monitor or a Video Screen that is also an Input Device

Intended service

Programmable Logic Controllers and I/O devices for control, monitoring, alarm, and safety functions for internal combustion engines. The modules are designed for mounting directly on engine.

Temperature [°C]: -10°C and 75°C

Vibration: ±1.6 mm / 4g

EMC: All locations excluding bridge and open deck

IP Code: Required protection according to relevant rules shall be provided upon installation on board

This Certificate is valid until **2023-08-26**.

Issued at **Høvik** on **2018-08-27**

DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Nils Jarem**

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Odd Magne Nesvåg
Head of Section



Product description

Module type

Module name: SaCoSone Control Module S

Module class: 24V electronic module for on engine application with SELV/PELV voltages ($U_e < 60\text{VDC}$)

Firmware revision: CM-S_Firmware_D1_1-5-X

Display

Module name: SaCoSone Display Module

Module class: 24V electronic module for on engine application with SELV/PELV voltages ($U_e < 60\text{VDC}$)

Firmware revision: DM_Firmware_1-4-X_FPGA_1-1-X

Manufactured by

MAN Diesel & Turbo SE, Augsburg, Germany

Application/Limitation

The Type Approval covers all hardware listed under Product description.

Computers and programmable logic controllers (PLC) are intended to be used in systems that provide control, monitoring, alarm and safety functions that are subject to classification requirements. Displays that are intended for use in alarm and monitoring systems subject to classification.

The modules provide control, monitoring, alarm, and safety functions for internal combustion engines:

- Control Module S has functions for control, monitoring, alarm and safety
- Display Module has functions for monitoring and safety

The configuration and installation of the modules are subject for approval by the classing RO.

To be connected to an approved power supply.

Type Approval documentation

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Other Conditions

The units have been verified for compliance with EU Mutual Recognition Technical Requirements for COMPUTERS AND PROGRAMMABLE LOGIC CONTROLLERS (PLCS) version 0.3, dated 2016-04-01.

Additionally displays have been verified for compliance with EU Mutual Recognition Technical Requirements for TOUCH SCREEN I.E. A DISPLAY MONITOR OR A VIDEO SCREEN THAT IS ALSO AN INPUT DEVICE version 0.0 dated 2018-01-01.

Environmental test parameters

Temperature: -10°C and 75°C

Vibration: $\pm 1.6\text{ mm / 4g}$

EMC: All locations excluding bridge and open deck

Enclosure: Required protection according to relevant rules
shall be provided upon installation on board

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:

Job Id: **262.4-000124-1**
Certificate No: **MRA000001T**

- 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 annually and at renewal of this certificate.

END OF CERTIFICATE