

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Safety Control Unit for Rotating Machinery**with type designation(s)
M2600

Issued to

Littelfuse Selco A/S
ROSKILDE, Denmark

is found to comply with

Det Norske Veritas' Rules for Classification of Ships 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.**DNV System components location classes
Hardware type**Location Classes**

	Temperature	Humidity	Vibration	EMC	Enclosure
M2600	B	B	A	B	*

*) - Required protection according to the Rules shall be provided upon installation on board

This Certificate is valid until **2020-11-22**.Issued at **Høvik** on **2015-11-23**DNV GL local station: **Copenhagen**for **DNV GL**Approval Engineer: **Didier Girardin**-----
Odd Magne Nesvåg
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.

Product description

The M2600 Shutdown Unit installed as primary or backup protection device of marine diesel engines. The M2600 design is based entirely on discreet logic. All inputs and outputs of the M2600 have corresponding LED indication showing whether they are active or not. The unit furnishes 10 digital shutdown inputs. One is predefined for over speed and another for emergency stop. All inputs are dry contacts. Output relays are provided for shut down of the engine. The Fuel Valve output relay is used for "energized to run applications", the stop solenoid output is used for "energized to stop" applications. Additionally the unit provides an output for circuit breaker trip for use with gen-sets. Engine speed (rpm) can be detected from magnetic and inductive pick-ups connected to dedicated inputs. Alternatively the speed can be detected from digital inputs. M2600 provides cable monitoring on all sensor inputs and for the shutdown relay output. Configuration is made solely with the dipo switches and rotary switches on the unit.

HW Type	HW	SW	HW description
M2600	Ver. 3	N/A	Diesel Engine protective shut down unit

Application/Limitation

This system is only to be used as engine safety system for emergency, auxiliary and propulsion marine diesel engines.

Approval conditions

The Type Approval covers hardware as listed above in the product description.

When the system is used in applications to be classed by DNV GL, the following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- Functional description
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- List of controlled and monitored points showing alarms and safety functions (including type, range and threshold)
- Test program for certification

Product certificate

Deliveries of the application system to be classed by DNV GL **are to be** certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

Marking of product

The products to be marked with:

- Model name
- Manufacturer 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)



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Certificate No: **TAA000004Z**

- 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE