DNV·GL

Certificate No:
TAA00000Z6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Engine Safety, Control and Alarm System

with type designation(s)
DCU 410E, DCU 410, SDU 404, SDU 410, RIO 410, RP 410, RP 410E, DCU 408, RPS (Marine Pro - 400 Series)

Issued to
Auto-Maskin AS
Skjetten, Norway

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:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
DCU 410E	B	B	A	A	B (Panel front only)
DCU 410	B	B	A	A	
SDU 404	B	B	A	A	Required protection according to the Rules to be provided upon installation on board
SDU 410	B	B	A	A	
RIO 410	B	B	A	A	
RP 410	A	B	A	A	B (Panel front only)
RP 410E	A	B	A	A	
DCU 408	B	B	A	A	
RPS	B	B	A	A	Required protection according to the Rules to be provided upon installation on board

This Certificate is valid until **2019-02-27**.

Issued at **Høvik** on **2017-02-28**
DNV GL local station: **Oslo Maritime and CAP** for **DNV GL**

Approval Engineer: **Sergey Gilmiyarov**

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.

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Job Id:
Certificate No: **TAA00000Z6**

Product description

Type approval covers Diesel Engine Control, Monitoring and Safety Systems: Marine Pro - 400 Series.

The 400 Series is designed to be integrated with independently approved propulsion and auxiliary marine engines.

Sensor inputs to the 400 Series will either come from independent sensors, or from Type Approved engine control module (ECM). Shutdown Unit (SDU) shall have independent switches and sensors provided.

Hardware:

Part Number	OEM Part Number	Description	FW number
1006445	---	DCU 410E	3.X
1100601	5410203	DCU 410E (OEM1)	3.X
1100235	458-7750	DCU 410E (OEM2)	3.X
1006505	---	DCU 410E (OEM3)	3.X
1006450	---	DCU 410	2.X
1100146	2863181	DCU 410 (OEM 1)	2.X
1100230	334-2665	DCU 410 (OEM 2)	2.X
1006418	---	SDU 404	1.X
1100405	492-6333	SDU 404 (OEM2)	1.X
1006451	---	SDU 410	1.X
1100186	2867055	SDU 410 (OEM 1)	1.X
1100232	334-2668	SDU 410 (OEM 2)	1.X
1006453	---	RIO 410	1.X
1100187	2867056	RIO 410 (OEM 1)	1.X
1100231	334-2667	RIO 410 (OEM 2)	1.X
1006446	---	RP 410E	3.X
1100604	5419007	RP 410E (OEM1)	3.X
1100236	458-7760	RP 410E (OEM2)	3.X
1006506	---	RP 410E (OEM3)	3.X
1006452	---	RP 410	2.X
1100145	2863182	RP 410 (OEM 1)	2.X
1100233	334-2666	RP 410 (OEM 2)	2.X
1006455	---	DCU 408	2.X
1311229	---	RPS	N/A

FW and Classified Installation can be verified in display, through the sub menu “Version Information”.

The current firmware numbers and versions are listed in documents:

Document name	Document number
Firmware Release description DCU410 / DCU 408	5005
Firmware Release description SDU 410	5008
Firmware Release description SDU 404	5022
Firmware Release description RIO 410	5009
Firmware Release description RP 410	5011

Minor changes in firmware and consequent changes of firmware version numbers are allowed and covered by this Type Approval when such changes are performed in accordance with Firmware Version Labeling Strategy – 3/1201-AMS007/1 rev. A dated 2013-04-30, i.e. not changing core functionality as it is described in type approval documentation. Such firmware changes to be registered in the above listed Firmware Release descriptions.

Application/Limitation

- The Type Approval covers hardware and firmware listed under Product description.
- Possibility of CCTV camera implementation into system shall be disabled for DNV GL classified systems.
- Possibility of alarm acknowledgment from control stations which are inactive and / or outside machinery spaces shall be disabled for DNV GL classified installations.

The following documentation of the actual application is to be submitted for approval in each case:
- Reference to this Type Approval Certificate
- System block diagram
- List of control and monitored points (list covering alarms, safety functions)
- Power supply arrangement (may be part of the System block diagram)
- Test Program for certification survey (FAT program) describing testing of application system in project specific configuration.

Product certificate

Each delivery of the application system is 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, preferably at the engine/system application maker integrating control, monitoring and safety system, before the system is shipped to the yard. After the certification the clause for application firmware control will be put into force.

Clause for application firmware control
All changes in firmware 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 GL for evaluation and approval.
Major changes in the firmware are to be approved before being installed in the computer.

Tests carried out

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

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

END OF CERTIFICATE