

# TYPE APPROVAL CERTIFICATE

Certificate No: TAA000014T Revision No: 3

This is to certify: That the Engine Safety, Control and Alarm System

with type designation(s) DCU 305 A/P R2, DCU 305 R3, RSP 305, DCU 305 R3 LT

# Issued to Auto-Maskin AS Skjetten, Norway

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.

Location classes:

Туре	Temperature	Humidity	Vibration	EMC	Enclosure	
DCU 305 A/P R2	В	В	Α	В	C (Panal front only)	
DCU 305 R3	В	В	Α	В		
RSP 305	В	В	Α	В	C (Parier front only)	
DCU 305 R3 LT	В	В	Α	В		

Issued at Høvik on 2021-12-06

for **DNV** 

This Certificate is valid until **2026-02-21**. DNV local station: **Oslo Maritime and CAP** 

Approval Engineer: Sergey Gilmiyarov

Jan Tore Grimsrud Head of Section

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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 300,000 USD.



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.



Job Id: 20 Certificate No: 7 Revision No: 3

262.1-007704-8 TAA000014T

# **Product description**

This system is designed to be used for propulsion engines, and for engines which are auxiliary and/or emergency generator drivers. See also Application/Limitation.

Where possible, sensor inputs for the alarm system have been provided by the approved engine's Electronic Control Module (ECM) and its associated datalink signals. All other sensor inputs to the alarm system are provided by sensors, independent of the ECM. The annunciation and display of these signals will be provided by the panel display.

The requirement to have an independent safety system is met by use of independent switches and sensors that are connected directly to the panel system's safety section.

To be installed flush mounted in cabinet or desk.

System comprising:						
Component	Description:	Firmware	Firmware rev.			
		rev.:	date:			
DCU 305 A R2	Control Unit for Auxiliary and Emergency Engines	4.47	November 2007			
DCU 305 P R2	Control Unit for Propulsion Engines	4.47	November 2007			
DCU 305 R3	Control Unit for Auxiliary, Emergency and Propulsion Engines	6.59	September 2011			
DCU 305 R3 LT	Control Unit for Auxiliary, Emergency and Propulsion Engines	6.59	September 2011			
	Backup Controller inside DCU 305 unit	Backup 9	November 2002			
RSP 305	Remote Panel	5.09	January 2006			
RK-66	Terminal card		Terminal card			
MK-6/14	Relay card		Relay card			
AK-6	Analogue card		Analogue card			
Rudolf R2	Configuration tool	2.15.10	Configuration tool			
Rudolf R3	Configuration tool	3.5.10	Configuration tool			

When the type approved software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Minor revisions of the firmware, as they defined by QA-system (minor revisions - provided that no core fit, form, function or visual effects are changed as described in the approved Product Specifications) to be recorded in the following documents:

DCU 305 R2	Doc. No. 5001
DCU 305 R3	Doc. No. 5002
RSP 305	Doc. No. 5003

## Application/Limitation

- For single engine propulsion plant arrangement separately powered safety system is required.
- For engines used in multi-engines propulsion plants and engines used as auxiliary generator drivers it is required that the engine stops if / when the main and back-up CPU's in DCU305 system will lose power (fail to stop principle).
- Engines used as emergency generator driver must not stop in the event if the main and back-up CPU's in DCU305 system will lose power.
- The Type Approval covers hardware and firmware listed under Product description. Firmware revision numbers can differ onward from the ones listed in the table under Product description due to the minor changes, registered in documents No. 5001, 5002 and 5003.

## Approval conditions

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
- Power supply arrangement (may be part of the System block diagram)
- List of control and monitored points (project specific alarms and shutdowns list)
- Test program for certification

The Type Approval covers hardware and software listed under Product description.



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#### 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 before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

#### Application 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

- Dwgs. 305MB4\_3-Rev 4.3, 1476 305cpu3-Rev.3 (used for R2), 1476 305cpu3-Rev 4 (used for R3)
- Installation Manual DCU 305 R2, dated January 2006
- User's manual DCU 305 R2, dated June 2004
- User's Manual DCU 305 R3, dated July 2014
- Installation Manual DCU 305 R3, dated July 2014
- User's and Installation manual RSP Remote Slave Panel
- User's manual Rudolf
- Drawing: Terminal Board RK-66, rev. 2.7, doc.number 1475, dated 2013-04-21
- Minutes of Meeting regarding Certificate renewal, dated 2012-01-18
- Firmware versions for:
  - DCU 305 R2 Doc. No. 5001, dated November 2007
  - DCU 305 R3 Doc. No. 5002, dated September 2011
  - RSP 305 Doc. No. 5003, dated January 2006
- DNV environmental test report 2002-3290
- DNV environmental test report 2001-3056
- DNV environmental test report 2005-3292
- OSL 01.8021 Approval test of application software
- Quick Installation Guide DCU 305 R3, dated 10 May 2019

Type Approval Periodical Assessment Report issued by DNVGL Oslo, dated 2021-01-28

### Update 2021-12-06 EMC test report E21169.02, dated 2021-09-08.

#### Tests carried out

Applicable tests according to DNV Class Guideline CG-0339 (2021-08)

#### Marking of product

The products to be marked with:

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

## **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