



Certificate No:
TAA000039U

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Remote Control System Diesel Engine

with type designation(s)
EC600PC

Issued to

Twin Disc Incorporated
Racine, WI, USA

is found to comply with

DNV rules for classification – Ships

DNV rules for classification – High speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	C, D for Control Heads

Issued at **Hamburg** on **2023-08-16**

This Certificate is valid until **2025-04-26**.

DNV local unit: **Houston, Approval CMC**

for **DNV**

Approval Engineer: **Jens Dietrich**

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Joannis Papanuskas
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.

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.



Form code: TA 251

Revision: 2022-12

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Page 1 of 3

Product description

EC600 Electronic Propulsion Control System in the Basic or Advanced configuration is a programmable system for remote control propulsion of marine transmissions and marine clutches in the MCD configuration. Per propulsion line the EC600 system controls prime mover throttle and forward/reverse clutches.

A system consists of the following components:

- EC600PC control unit, one per propulsion line; P/N S1033763
- Stainless Steel Digital Control Heads (Advanced), P/N 1024955
- Marine Displays (Advanced/MCD), P/N S1039184

Power supply: 12VDC or 24VDC

Controller software version: V2.05.xx.yy.

Approval conditions

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

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 functional type test may be required and the certificate may have to be renewed to identify the new software version.

For each system intended to be installed in a DNV classed vessel the following documentation of the actual application is to be submitted for approval:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- Main parts list
- Configuration Description with description of control transfer

Product certificate

As long as the system is covered by the Type Approval, a product certification according to Pt.4 Ch.9 Sec.1 will not be required. Correct configuration and set-up for each delivery to be tested during commissioning after installation.

Application/Limitation

Lack of facilities for back-up control need to be evaluated for the respective application.

At least two propulsion lines and at least two control heads per line must be installed and the control systems for at least two propulsion lines shall be supplied from independent power sources.

Facilities for presentation of critical alarms from prime mover and gear and means to manually intervene in automatically activated shutdowns as required by Rules and Regulations (ref. i.e. Rules for Ships Pt.4 Ch.1 Sec.4, 1.4 are not provided by this system and is therefore to be arranged separately.

The system shall be configured in order to comply with requirements for remote control described in Pt.4 Ch.1 Sec.4. Command transfers shall be bumpless with regard to propulsion.

Software Version: Developed under Twin Disc, Incorporated responsibility for each application. Contact Twin Disc, Incorporated with control serial number to determine installed software version.

Type Approval documentation

Tests carried out

Applicable tests according to DNV CG-0339, August 2021.
Functional performance test

Marking of product

Parts are labelled with Manufacturer, Model, P/N Hardware Version, S/N, Supply Voltage.

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

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE