Certificate no.:
TAA00003JE

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Engine Control System

with type designation(s)
CS-CDA01

issued to
China Shipbuilding Power Engineering Institute Co., Ltd.
Shanghai, **China**

is found to comply with
DNV rules for classification – Ships

Application:

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

Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**B**

Issued at **Hamburg** on **2025-12-11**
This Certificate is valid until **2030-12-10**.
DNV local unit: **Shanghai**

for **DNV**

Approval Engineer: **Dariusz Lesniewski**

Product description

CS-CDA01 marine low-speed engine control system (ECS) for the low-speed diesel propulsion engine of type 6EX340.

System main components:

CCU 1…6 (max.12):	Cylinder Control Units (driving the actuator on each cylinder of the engine, inter-communication by the CAN-Bus)
MCU 1, MCU 2:	Main Control Units (main and backup devices for engine control tasks)
GTU 1, GTU 2:	Gateway Units (communication between ECS and external systems/devices by TCP/IP-protocol)
MCP Local:	Manual Control Panel (Local) (local HMI interface / touch screen for control, monitoring and alarming)
MCP ECR:	Manual Control Panel (ECR) (remote HMI interface / touch screen for control, monitoring and alarming)
Power Box 1, 2:	Power units (redundant power supply for 220V AC including AC/DC, DC/DC and UPS modules)

Features:
- Power supply redundancy
- Communication redundancy (redundant TCP/IP and CAN-bus network)

Hardware version: 1.1.0
Software version: 1.1.0

Approval conditions

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
- User interface description
- Power supply arrangement (may be part of the System block diagram)
- List of control and monitored points
- Circuit diagrams
- Description of functions covered by software
- Test program for application software at manufacturer

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

Product certificate
Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The Certification is to be performed at the manufacturer before the system is shipped to the yard. After certification the clause for software control will be put into force.

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. Certification of modified functionality may be required for the particular vessel.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

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