DNV·GL

Certificate No:
TAA00001JE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the NOx Selective Catalytic Reduction Control System

with type designation(s)
SR-HPSCR Series SCR Control System Cabinet

Issued to
SunRui Marine Environment Engineering Co.,Ltd.
QINGDAO, China

is found to comply with
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.
Temperature
Humidity
Vibration
EMC
Enclosure

Issued at **Hamburg** on **2017-12-18**
This Certificate is valid until **2022-12-17**.
DNV GL local station: **Qingdao**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

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.

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Product description

Sunrui SCR system is used for denitration of marine exhaust gas and installed before the turbocharger. The control system is controlling the following functions:

- Reducing agent dosing handling system with flushing function.
- Compressed air system, including soot blower system, venting system, atomization air for urea lance, and instrument air supply.
- Standby heat system.

Main Components:

24 VDC power supply		ATRIP-PS1AC24DC5	Phoenix
PLC	OMRON CJ2 series		
	CPU	CJ2M-CPU13	
	512M storage card	HIMC-EF583	
	Battery	CJ1W-BAT01	
	End plate	CJ1W-TER01	
	Power supply module	CJ1W-PA205R	
	16-point input module	CJ1W-ID211	
	16-point output module	CJ1W-OC211	
	8-point output module	CJ1E-OC201	
	8-channel analog input module	CJ1WAD081	
	8-channel analog output module	CJ1W-DA08C	
	Serial communication module	CJ1W-SCU31-V1	
	I/O control module	CJ1W-IC101	
	I/O interface module	CJ1W-II101	
Touch screen		GT2510-VTBA	Mitsubishi

Software Version:

PLC: V02.03.01
Touch screen: V02.03.01

Application/Limitation

As long as the system is covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 [1.2.3] will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Clause for application software control

All changes in software 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 software are to be approved before being installed in the computer.
A Certification of Application Functions may be required for the particular vessel.

Type Approval documentation

Job Id: **262.1-025387-1**
Certificate No: **TAA00001JE**

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339 November 2016.
Function Test according to Report SR-HPSCT Series SCR System

Marking of product

Plate with following information

Type,	Serial Number
Input Voltage,	Power
Enclosure: IP44,	Date
Outline: 1200x800x350mm	Weight

Sunrui Marine Environment Engineering Co., Ltd

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