

TYPE APPROVAL CERTIFICATE

This is to certify:

That the General Controller

with type designation(s)
Motor Control Unit NSU series

Issued to

JRCS MFG. CO. , LTD.
Shimonoseki, Yamaguchi, Japan

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:

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	B

This Certificate is valid until **2021-12-11**.

Issued at **Høvik** on **2017-01-20**

DNV GL local station: **Hiroshima**

for **DNV GL**

Approval Engineer: **Ståle Sneen**

.....
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.

Product description

Starter Control Units – Compact panels for pump/fan starter control (switchboard flush mounting)
System Type Designation: NSU series

Unit type	Control method	Operation
NSU-DN2	Line without CPU	RUN/STOP
NSU-LN1	Line with CPU	RUN/STOP
NSU-RN2	Reversible	SUPPLY/EXHAUST/STOP
NSU-RN3	Reversible	FORWARD/REVERSE/STOP
NSU-RN4	Two-speed	HIGH/LOW/STOP
NSU-AN5	Auto Start	AUTO START/RUN/STOP
NSU-AN6	Auto Stop	AUTO STOP/RUN/STOP
NSU-AN7	Auto Change	STAND-BY/RUN/STOP
NSU-AN8	Auto Start/Stop	AUTO/RUN/STOP

Power supply voltage: 18VAC, 50/60Hz
Relay output contact rating: 450VAC, 1A

NSU units with CPU to be comprising the following modules:
NSU-M100A (CPU basic module),
NSU-M150A (optional I/O extension).

Input/Output Points:

Digital Input: max. 10 points (Up to 2 points may be added with extension module);
Digital Output: max. 5 points (Up to 9 points may be added with extension module).

Place of manufacture

2155 Kawatana, Toyoura-cho, Shimonoseki, Yamaguchi, 759-6301 Japan

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems and Pt.4 Ch.8 Electrical installations.

Application/Limitation

The units shall be installed inside the motor starter enclosure.

Type Approval documentation

Tests carried out

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

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:



Job Id:
Certificate No: **TAA00000X7**

- 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