

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
DL-Series IO Module

Issued to

HANLA IMS CO., LTD.
Busan, Republic of Korea

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	A
Enclosure	A

This Certificate is valid until **2021-10-03**.

Issued at **Busan** on **2016-10-04**

DNV GL local station: **Pusan**

Approval Engineer: **Dong Ho Park**

for **DNV GL**

Baeg Soon Choi
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

DL-Series IO Module as listed below:

DL-1100 is an analog input (only 4~20mA) module with 8 input channels

- Power supply: 24VDC
- Power consumption: 6VA
- Input: 8 X 4~20mA input
- Accuracy: +/- 0.2% Full Scale
- Input resistance: 50Ω
- Communication: 2 X RS-485 Modbus RTU
- Installation: DIN Rail mounting (35mm)
- Material: AL, CHROMATE, 105x27x74mm.

DL-2100 provides 8 digital input channels.

- Power supply: 24 VDC
- Power consumption: 1VA
- Input: 8 X Digital input.
- Input type: Contact mode, Transistor mode.
- Communication: 2 X RS-485 Modbus RTU
- Installation: DIN Rail mounting (35mm)
- Material: AL, CHROMATE, 105x27x74mm

DL-3100 has 8 relay output channels isolated by each other

- Power supply: 24 VDC
- Power consumption: 3VA
- Output: 8 X NC (or NO) Dry contact
- Max Range: 125 VAC 0.5A / 24 VDC 1A
- Max switching power: 62.5VA / 30W
- Communication: 2 X RS-485 Modbus RTU
- Installation: DIN Rail mounting (35mm)
- Material: AL, CHROMATE, 105x27x74mm

S/W Version no.: Ver.0

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, 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 Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Job Id: **262.1-021797-1**
Certificate No: **TAA00000NV**

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2015.

Marking of product

The products to be marked with:

- Manufacturer
- Model no.
- Serial number

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE