DNV·GL

Certificate No:
TAE00003GF

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Multifunction Relay

with type designation(s)
MPRHGMP

Issued to
Hyundai Electric & Energy Systems Co., Ltd.
ULSAN, 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.

Issued at **Busan** on **2019-08-12**
This Certificate is valid until **2024-08-11**.
DNV GL local station: **Ulsan**

for **DNV GL**

Approval Engineer: **Dong Ho Park**

Andreas Kristoffersen
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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Job Id: **262.1-030491-1**
Certificate No: **TAE00003GF**

Product description

Type : HGMP N60ZI and HGMP N60ZS

- Microprocessor based motor protection
- Functions : Overcurrent, Undercurrent, Phase failure, Phase unbalance, Reverse phase, Earth leakage, condition monitoring
- Rated current : 0.5~60A
- Control voltage : AC(50/60Hz) 100V~240V, DC 100V~240V

Application/Limitation

This motor protection relay is regarded as a component.
The installation of the product is to be according to manufacturer's instruction.

Type Approval documentation

Tests carried out

Applicable test according to class guideline DNVGL-CG-0339, Nov. 2016. (Insulation resistance, High voltage, Power supply variation, Power supply failure, Vibration, Low temperature, Dry heat, Damp heat, Inclination, EMC)
Applicable type test according to IEC 60947-1 ed.5.2 (2014) & IEC 60947-4-1 ed.4.0 (2018)

Marking of product

- Manufacturer's name
- Model name
- Power rating
- Serial no.

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