DNV·GL

Certificate No:
TAE00003XK

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Contactor

with type designation(s)
HGC9/12/18/25/32/40/50/65/75/85/100

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.

Rated voltage (V)	**690**
Rated current (A)	**Ref. Product description**
Frequency (Hz)	**50/60**

Issued at **Busan** on **2020-03-11**
This Certificate is valid until **2024-09-17**.
DNV GL local station: **Ulsan**

Approval Engineer: **Eun Sook Kim**

for **DNV GL**

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: **262.1-032907-1**
Certificate No: **TAE00003XK**

Product description

Electromagnetic contactors
HGC9, HGC12, HGC18, HGC25, HGC32, HGC40:

Rated voltage Ue: 690 V
Rated frequency fe: 50/60 Hz
Rated insulation voltage Ui: 750 V
Rated impulse withstand voltage Uimp: 6 kV

		HGC9	HGC12	HGC18	HGC25	HGC32	HGC40
Rated thermal current Ith (AC1)		25 A	25 A	40 A	45 A	55 A	60 A
Rated operational current Ie (AC3)	240V	9 A	12 A	18 A	25 A	32 A	40 A
	440V	9 A	12 A	18 A	25 A	32 A	40 A
	550V	7 A	12 A	13 A	22 A	28 A	32 A
	690V	6 A	9 A	9 A	17 A	20 A	23 A

HGC50, HGC65, HGC75, HGC85, HGC100:

Rated voltage Ue: 690 V
Rated frequency fe: 50/60 Hz
Rated insulation voltage Ui: 1000 V
Rated impulse withstand voltage Uimp: 8 kV

		HGC50	HGC65	HGC75	HGC85	HGC100
Rated thermal current Ith (AC1)		70 A	85 A	125 A	125 A	145 A
Rated operational current Ie (AC3)	240V	50 A	65 A	75 A	85 A	100 A
	440V	50 A	65 A	75 A	85 A	100 A
	550V	43 A	60 A	64 A	75 A	85 A
	690V	28 A	35 A	42 A	45 A	65 A

Type "1" co-ordination

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, December 2019 for:

- Temperature: B
- Humidity: A
- Vibration: A

IEC 60947-1(ed.5);am1
IEC 60947-4-1(ed.3);am1

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