DNV·GL

Certificate No:
TAE00003XM

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Contactor

with type designation(s)
HGC115/130/150/185/225/265/300/400/500/630/800

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)	**1000**
Rated current (A)	**Ref. Product description**
Frequency (Hz)	**50/60**

Issued at **Busan** on **2020-03-12**
This Certificate is valid until **2025-03-04**.
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: **TAE00003XM**

Product description

Electromagnetic contactors:

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

		HGC115	HGC130	HGC150	HGC185	HGC225	HGC265
Rated thermal current Ith (AC1)		160 A	180 A	210 A	275 A	315 A	350 A
Rated operational current Ie (AC3)	240V	115 A	130 A	150 A	185 A	225 A	265 A
	440V	115 A	130 A	150 A	185 A	225 A	265 A
	550V	100 A	110 A	120 A	180 A	200 A	225 A
	690V	65 A	75 A	100 A	120 A	150 A	173 A
	1000V	50 A	54 A	66 A	78 A	96 A	113 A

		HGC300	HGC400	HGC500	HGC630	HGC800
Rated thermal current Ith (AC1)		400 A	500 A	550 A	750 A	900 A
Rated operational current Ie (AC3)	240V	300 A	400 A	500 A	630 A	800 A
	440V	300 A	400 A	500 A	630 A	800 A
	550V	273 A	300 A	426 A	500 A	720 A
	690V	220 A	300 A	360 A	412 A	550 A
	1000V	141 A	178 A	192 A	213 A	284 A

HGC115/130/150
Type "2" co-ordination, Rated prospective short-circuit current Ir 10 kA
MCCB(SCPD) 3 poles 460 V 160 A 50 kA

HGC185/225
Type "2" co-ordination, Rated prospective short-circuit current Ir 10 kA
MCCB(SCPD) 3 poles 460 V 250 A 50 kA

HGC265
Type "2" co-ordination, Rated prospective short-circuit current Ir 18 kA
MCCB(SCPD) 3 poles 460 V 400 A 80 kA

HGC300/400
Type "2" co-ordination, Rated prospective short-circuit current Ir 18 kA
MCCB(SCPD) 3 poles 460 V 400 A 85 kA

HGC500
Type "2" co-ordination, Rated prospective short-circuit current Ir 18 kA
MCCB(SCPD) 3 poles 460 V 630 A 85 kA

HGC630
Type "2" co-ordination, Rated prospective short-circuit current Ir 30 kA
MCCB(SCPD) 3 poles 460 V 630 A 85 kA

HGC800
Type "2" co-ordination, Rated prospective short-circuit current Ir 30 kA
MCCB(SCPD) 3 poles 460 V 800 A 85 kA

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