DNV·GL

Certificate No:
TAE000012M

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Circuit Breaker

with type designation(s)
UAN(HGN) FRAME D

Issued to
Hyundai Heavy Industries Co.,Ltd. Electro Electric Systems
ULSAN, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships and offshore units
IEC 60947-2

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV or GL.

Rated Voltage (V)	**690/500**
Rated Current (A)	**4000 ~ 6300**
Frequency (Hz)	**50/60**

This Certificate is valid until **2021-04-03**.

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

for **DNV GL**

DNV GL local station: **Ulsan**

Approval Engineer: **Sang Bum Park**

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.

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Job Id: **262.1-021248-1**
Certificate No: **TAE000012M**

Product description

Air circuit breaker with the following data: D FRAME

	UAN40D	UAN50D	UAN63D
Rated insulation voltage AC(V)	1000	1000	1000
Rated operational voltage AC(V)	690/500	690/500	690/500
Rated Current, at 40℃(A)	4000	5000	6300
Rated Frequency Hz	50/60	50/60	50/60
Rated Breaking Capacity Icu(kA) Ics = 100% Icu	100/150	100/150	100/150
Rated making Capacity Icm(kA)	220/330	220/330	220/330
Rated short time Capacity Icw(kA) 1s	100	100	100
Utilization category	B	B	B

Application/Limitation

To be installed and tested according to DNV GL Rules for Classification of Ships and Offshore Standards. The manufacturer's instructions to be observed.

Type Approval documentation

Technical Information :

- Specification of 'Air Circuit Breaker D-frame'
- Summary of rating, Catalogue 'Air Circuit Breaker U-Series
- Layout drawings, UAN D403~D633/Fixed and UAN D503~D633/Drawout type

Test report:

- DEKRA(KEMA) Test report(IEC60947-2) : 3307818.50 issued 2015-10-27
- ONETECH Test report(Environment including vibration) No. R14KR-041 issued 2014-04-22
- ONETECH Test report(EMC) No. E13KR-084 issued 2013-09-05

Tests carried out

Type tests inaccordance with IEC60947-2
Dry heat, damp heat, inclination, insulation resistance, high voltage and EMC immunity test

Certificate Retention Survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey to be dealt with:

- Ensure that type approved documentation is available.
- Ensure that materials used comply with type approved documents and/or referenced material specifications.
- Review design, materials, performance and production process with respect to possible changes, in order to ensure compliance with the type approved documentation and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE