



MARINE DIVISION

Certificate number: 21631/A2 BV

File number: ACE2/068/17

Product code: 2633H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

HYUNDAI HEAVY IND. CO., LTD. - Electro Electric Systems
ULSAN - KOREA (REPUBLIC OF)

for the type of product

CIRCUIT BREAKERS (LOW VOLTAGE)

Molded Case Circuit Breakers type UBL100C, UCB100L, UBL100H ; UBL225C, UCB250H, UCB250L ; Hi_403, _603, _803 series and UCB400_, UCB630_, UCB800_series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.
IEC 60947-1, IEC 60947-2 - IACS E10.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 17 May 2014

For BUREAU VERITAS,

At BV PUSAN, on 16 Dec 2010,

Keum-Ho Lee



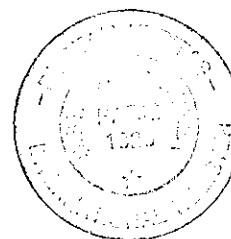
This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

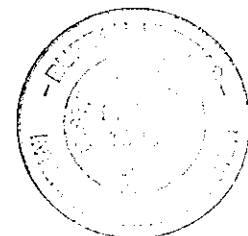
Product Type: Molded Case Circuit Breakers		UBL 100C, UCB 100L, UBL 100H	UBL 225C, UCB 250H, UCB 250L
Number of poles		3	3
Rated current (A) at 40°C	In	15, 20, 30, 40, 50, 60, 75, 100	125, 150, 175, 200, 225
Rated Insulation Voltage (VAC)	Ui	690	690
Rated Operational Voltage (VAC)	Ue	660	660
Rated Operational Voltage (VDC)		250	250
Rated impulse withstand voltage (kV)	Uimp	6	6
Rated service Short Circuit breaking capacity (kA rms) (kA sym), 50/60 Hz 600/660V AC, 480/500V AC, 440/460V AC, 380/415V AC, 220/240VAC, 250V DC	Ics =% x Icu	50%	50%
Rated service Short Circuit breaking capacity (kA rms) (kA sym) 50/60 Hz 600/660V AC 480/500V AC 440/460V AC 380/415V AC 220/240V AC 250V DC	Icu	25 (20 for UBL 100H) 35 (30 for UBL 100H) 50 (42 for UBL 100H) 50 (42 for UBL 100H) 100 (85 for UBL 100H) 40 (25 for UBL 100H)	25 (20 for UCB 250H) 35 (30 for UCB 250H) 50 (42 for UCB 250H) 50 (42 for UCB 250H) 100 (85 for UCB 250H) 40 (25 for UCB 250H)
Rated Making Capacity Icm (kA, peak) 50/60 Hz, 460V AC	Icm	105 (90 for UBL 100H)	105 (90 for UCB 250H)

Product Type: Molded Case Circuit Breakers		HiBE 403 UCB400R	HiBE 603 UCB630R	HiBE 803 UCB800R
Number of poles		3	3	3
Rated current (A) at 40°C	In	250, 300, 350, 400	500, 600	700, 800
Rated Insulation Voltage (VAC)	Ui	750	750	750
Rated Operational Voltage (VAC)	Ue	690	690	690
Rated impulse withstand voltage (kV)	Uimp	6	6	6
Rated service Short Circuit breaking capacity (kA rms) (kA sym), 50/60 Hz 600/660V AC, 480/500V AC, 440/460V AC, 380/415V AC, 220/240VAC, 250V DC	Ics =% x Icu	50%	50%	50%
Rated service Short Circuit breaking capacity (kA rms) (kA sym) 50/60 Hz 600/660V AC 480/500V AC 440/460V AC 380/415V AC 220/240V AC 250V DC	Icu	18 18 25 30 35 14	22 25 35 45 50 20	25 35 35 45 50 20
Rated Making Capacity Icm (kA, peak) 50/60 Hz, 460V AC	Icm	52.5	73.5	73.5



Product Type: Molded Case Circuit Breakers		HiBS 403 UCB400S	HiBS 603 UCB630S	HiBS 803 UCB800S
Number of poles		3	3	3
Rated current (A) at 40°C	In	250, 300, 350, 400	500, 600	700, 800
Rated Insulation Voltage (VAC)	Ui	750	750	750
Rated Operational Voltage (VAC)	Ue	690	690	690
Rated impulse withstand voltage (kV)	Uimp	6	6	6
Rated service Short Circuit breaking capacity (kA rms) (kA sym), 50/60 Hz 600/660V AC, 480/500V AC, 440/460V AC, 380/415V AC, 220/240VAC, 250V DC	Ics =....% x Icu	50%	50%	50%
Rated Ultimate Short Circuit breaking capacity (kA rms) (kA sym) 50/60 Hz 600/660V AC 480/500V AC 440/460V AC 380/415V AC 220/240V AC 250V DC	Icu	22 25 35 42 50 25	25 45 50 65 100 40	25 45 50 65 100 40
Rated Making Capacity Icm (kA, peak) 50/60 Hz, 460V AC	Icm	73.5	105	105

Product Type: Molded Case Circuit Breakers		HiBH 403 UCB400H	HiBH 603 UCB630H	HiBH 803 UCB800H
Number of poles		3	3	3
Rated current (A) at 40°C	In	250, 300, 350, 400	500, 600	700, 800
Rated Insulation Voltage (VAC)	Ui	750	750	750
Rated Operational Voltage (VAC)	Ue	690	690	690
Rated impulse withstand voltage (kV)	Uimp	6	6	6
Rated service Short Circuit breaking capacity (kA rms) (kA sym), 50/60 Hz 600/660V AC, 480/500V AC, 440/460V AC, 380/415V AC, 220/240VAC, 250V DC	Ics =....% x Icu	50%	50%	50%
Rated Ultimate Short Circuit breaking capacity (kA rms) (kA sym) 50/60 Hz 600/660V AC 480/500V AC 440/460V AC 380/415V AC 220/240V AC 250V DC	Icu	25 35 50 65 85 40	35 50 65 85 100 40	35 50 65 85 100 40
Rated Making Capacity Icm (kA, peak) 50/60 Hz, 460V AC	Icm	105	143	143



Product Type: Molded Case Circuit Breakers		HiBL 403 UCB400L	HiBL 603 UCB630L	HiBL 803 UCB800L
Number of poles		3	3	3
Rated current (A) at 40°C	In	250, 300, 350, 400	500, 600	700, 800
Rated Insulation Voltage (VAC)	Ui	750	750	750
Rated Operational Voltage (VAC)	Ue	690	690	690
Rated impulse withstand voltage (kV)	Uimp	6	6	6
Rated service Short Circuit breaking capacity (kA rms) (kA sym), 50/60 Hz 600/660V AC, 480/500V AC, 440/460V AC, 380/415V AC, 220/240VAC, 250V DC	Ics =....% x Icu	50%	50%	50%
Rated Ultimate Short Circuit breaking capacity (kA rms) (kA sym) 50/60 Hz 600/660V AC 480/500V AC 440/460V AC 380/415V AC 220/240VAC 250V DC	Icu	30 65 85 100 125 40	35 65 85 100 125 40	35 65 85 100 125 40
Rated Making Capacity Icm (kA, peak) 50/60 Hz, 460V AC	Icm	187	187	187

2. DOCUMENTS AND DRAWINGS:

HYUNDAI HEAVY INDUSTRIES CO., LTD. Catalogue Molded Case Circuit Breaker.

3. TEST REPORTS:

3.1 - HYUNDAI HEAVY INDUSTRIES CO., LTD. test reports Nos:

CB09-001, CB09-002, CB09-003, CB09-004, CB09-005, CB09-006, CB09-007, CB09-008 and CB09-009, CB09-010, CB09-011 and CB09-012 issued on 19 February 2009.

3.2 - HYUNDAI HEAVY INDUSTRIES CO., LTD. ELECTRO ELECTRIC SYSTEMS L/V CIRCUIT BREAKER DEPARTMENT test reports Nos:

HHI-CB-EV-090201 Rev. 0, HHI-CB-EV-090202 Rev. 0, HHI-CB-EV-090203 Rev. 0, HHI-CB-EV-090204 Rev. 0, HHI-CB-EV-090205 Rev. 0.

4. APPLICATION / LIMITATION:

4.1 - Approval also valid for ships to be granted with the notations: AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.

4.2 - According to BV Rules for the Classification of Steel Ships, IEC 60947-2 (2006).

4.3 - The manufacturer should be consulted if Circuit Breaker is to be located where the ambient air temperature may fall below -25°C for an indoor Circuit Breaker and below -40°C for an outdoor Circuit Breaker or where the temperature may exceed 40°C (or if the 24 h average value exceeds 35°C).

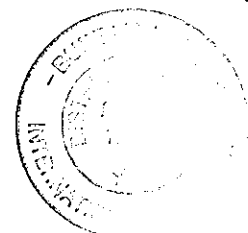
5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The Molded Case Circuit Breakers are to be manufactured, examined and tested by **HYUNDAI HEAVY INDUSTRIES CO., LTD. - Electro Electric Systems** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **HYUNDAI HEAVY INDUSTRIES CO., LTD. - Electro Electric Systems** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **HYUNDAI HEAVY INDUSTRIES CO., LTD. - Electro Electric Systems** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production site:

HYUNDAI HEAVY IND. CO., LTD. - Electro Electric Systems
ULSAN - Korea (Republic of)



6. MARKING OF PRODUCT:

Each Circuit Breaker shall be marked in a durable manner according to IEC 60947-2.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the Circuit Breakers at any time, and that **HYUNDAI HEAVY INDUSTRIES CO., LTD. - Electro Electric Systems, ULSAN - Korea (Republic of)** will accept the responsibility for informing shipbuilders or their sub-contractors of the proper methods of use and general maintenance of the Circuit Breakers and of the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 21631/A1 BV issued on 04/12/2009 by the Society.

*** END OF CERTIFICATE ***

