FOUNDED 1862 ABS

CERTIFICATE NUMBER
10-BK587577/1-PDA

DATE
18 May 2011

ABS TECHNICAL OFFICE
Busan Engineering Services

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of

HHI ELECTRO ELECTRIC SYSTEM - ULSAN

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

PRODUCT: **Molded Case Circuit Breaker**

MODEL: **HiBE 403/603/803, HiBS 403/603/803, HiBH 403/603/803, HiBL 403/603/803, HBD52D, UCB400R/S/H/L, UCB630R/S/H/L, UCB800R/S/H/L**

This Product Design Assessment (PDA) Certificate 10-BK587577/1-PDA, dated 18/May/2011 remains valid until 17/May/2016 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Sung-Moon Kim
Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned manufacturing process without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rule 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

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MA Certificate No. 10-UL1780843-X

Product: **Molded Case Circuit Breaker**

Model: **HiBE 403/603/803, HiBS 403/603/803, HiBH 403/603/803, HiBL 403/603/803, HBD52D, UCB400R/S/H/L, UCB630R/S/H/L, UCB800R/S/H/L**

Intended Service:
Protection against overload and short circuit current in electric circuits

Description:
See Ratings (See attachment)

Ratings:
The Following numbers are defined to facilitate ratings.
i) Frame size (AF), ii) No. of poles, iii) Rated current (A), iV) Breaking current at AC440V (kA), V) Making current at AC440V (kA)

A. Hi series
1.HIBE403 : i) 400, ii) 3, iii) 250,300,350,400, iV) 25, V) 52.5
2.HIBS403 : i) 400, ii) 3, iii) 250,300,350,400, iV) 35, V) 73.5
3.HIBH403 : i) 400, ii) 3, iii) 250,300,350,400, iV) 50, V) 105
4.HIBL403 : i) 400, ii) 3, iii) 250,300,350,400, iV) 85, V) 187
5.HIBE603 : i) 600, ii) 3, iii) 500,600, iV) 35, V) 73.5
6.HIBS603 : i) 600, ii) 3, iii) 500,600, iV) 50, V) 105
7.HIBH603 : i) 600, ii) 3, iii) 500,600, iV) 65, V) 143
8.HIBL603 : i) 600, ii) 3, iii) 500,600, iV) 85, V) 187
9.HIBE803 : i) 800, ii) 3, iii) 700,800, iV) 35, V) 73.5
10.HIBS803 : i) 800, ii) 3, iii) 700,800, iV) 50, V) 105
11.HIBH803 : i) 800, ii) 3, iii) 700,800, iV) 65, V) 143
12.HIBL803 : i) 800, ii) 3, iii) 700,800, iV) 85, V) 187
13.HBD52D : i) 50, ii) 2, iii) 15,20,30,40,50, iV) 5, V) 7.42
Note: For items 13), the breaking and making currents are at AC220V

B. U series
1.UCB400R : i) 400, ii) 3, iii) 250,300,350,400, iV) 25, V) 52.5
2.UCB400S : i) 400, ii) 3, iii) 250,300,350,400, iV) 35, V) 73.5
3.UCB400H : i) 400, ii) 3, iii) 250,300,350,400, iV) 50, V) 105
4.UCB400L : i) 400, ii) 3, iii) 250,300,350,400, iV) 85, V) 187
5.UCB630R : i) 630, ii) 3, iii) 500,630, iV) 35, V) 73.5
6.UCB630S : i) 630, ii) 3, iii) 500,630, iV) 50, V) 105
7.UCB630H : i) 630, ii) 3, iii) 500,630, iV) 65, V) 143
8.UCB630L : i) 630, ii) 3, iii) 500,630, iV) 85, V) 187
9.UCB800R : i) 800, ii) 3, iii) 700,800, iV) 35, V) 73.5
10.UCB800S : i) 800, ii) 3, iii) 700,800, iV) 50, V) 105
11.UCB800H : i) 800, ii) 3, iii) 700,800, iV) 65, V) 143
12.UCB800L : i) 800, ii) 3, iii) 700,800, iV) 85, V) 187

Service Restrictions:
Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:
This PDA is based on Test Report (No.CB09-001 thru 012 & 086) by HHI on 19 February 2009, KEMA CB Test Certificate No. NL-17671/M1 on 13 April 2010 and KEMA CB Test Certificate No. NL-18929 on 26 August 2010.

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MA Certificate No. 10-UL1780843-X

Notes / Drawings / Documentation:
This Product Design Assessment (PDA) is valid only for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

Term of Validity:
This Product Design Assessment (PDA) Certificate 10-BK587577/1-PDA, dated 18/May/2011 remains valid until 17/May/2016 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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STANDARDS

ABS Rules:
2011 Steel Vessel Rules 1-1-4/7.7, 4-1-1/Table 3 & 4-8-3/5.3.3,
2008 MODU Rules 4-3-4/11.1

National:
NA

International:
IEC Publication 60947-2 (ed. 3)

Government Authority:
NA

EUMED:
NA

Others:
Manufacturer Specifications