



CERTIFICATE NUMBER

DATE

11-BK-697102-PDA

10 March 2011

ABS TECHNICAL OFFICE

Busan Ship Engineering

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
LS INDUSTRIAL SYSTEMS CO., LTD. - CHUNGJU-SI,

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: **Relay, Contactor Relay**

MODEL: **MR-4,6,8**

This Product Design Assessment (PDA) Certificate 11-BK-697102-PDA, dated 10/Mar/2011 remains valid until 09/Mar/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

Kyu-Siek Lee

Engineering Type Approval Co-ordinator

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MA Certificate No.: 09-SE1695257-X

PRODUCT: Relay, Contactor Relay

MODEL: MR-4,6,8

Intended Service:

Low-voltage switchgear and controlgear - Contactor relay

Description:

Contactor relays MR-4 Composition: 4NO,3NO1NC,2NO2NC,4NC
MR-6(MR-4+UA-2) Composition: 6NO,5NO1NC,4NO2NC,3NO3NC,2NO4NC
MR-8(MR-4+UA-4) Composition: 8NO,7NO1NC,6NO2NC,5NO3NC,4NO4NC
Coil Voltage : AC24V~600V 50Hz,60Hz,50/60Hz DC12V~250V

Ratings:

Utilization category: AC-15

MR-4,6,8:120V(6A),240V(3A),380V(1.9A),480V(1.5A),500V(1.4A),600V(1.2A)

Utilization category: DC-13

MR-4: 125V(1.1A),250V(0.55A),400V(0.31A),500V(0.27A),600V(0.2A)

MR-6(MR-4): 125V(1.1A),250V(0.55A),400V(0.31A),500V(0.27A),600V(0.2A)

MR-6(UA-2): 125V(0.55A),250V(0.27A),400V(0.15A),500V(0.13A),600V(0.1A)

MR-8(MR-4): 125V(1.1A),250V(0.55A),400V(0.31A),500V(0.27A),600V(0.2A)

MR-8(UA-4): 125V(0.55A),250V(0.27A),400V(0.15A),500V(0.13A),600V(0.1A)

Service Restriction:

Unit Certification is not required for this product.

Comments:

This PDA is based on CB TEST CERTIFICATES (UL International Demko A/S
Certificate No.: 10CA17816-20100528 dated 25 October 2010) and PT&T's Test Report Nos.
R410-2675 ~ 2677 dated April 2011

Notes / Drawings / Documentation:

Term of Validity:

LS INDUSTRIAL SYSTEMS CO., LTD.

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STANDARDS

ABS Rules:

2011 Steel Vessel Rules 1-1-4/7.7, 4-8-3/1.7, 1.17

National:

NA

International:

IEC 60947-1,IEC60947-5-1

Government Authority:

NA

EUMED:

NA

Others:

NA