



EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

In accordance with Article 10.1 of EU Regulation 391/2009

Certificate No:
MRE000007
Revision No:
3

This Certificate is issued to

Mitsubishi Electric Dalian Industrial Product Co.,Ltd.
Dalian, China

for
Switches

with type designation(s)
KB-D

The product is found to comply with
EU RO Mutual Recognition Technical Requirements for Switches

Intended service
Power supply system characteristics as per IEC 60092-101, 4.8

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2027-03-28**.

Issued at **Høvik** on **2022-03-29**

DNV local station: **Dalian NB & CMC**

Approval Engineer: **Marcin Tobiasz**

for **DNV**

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Trond Sjøvåg
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Switch-disconnectors for control and isolation for installation onboard ships and mobile offshore units.
 Type KB-D with the following specifications:

No. of poles [P]	1	2	3	4 (3+N)
Utilization category	AC22A class			
Rated current [A]	32, 63, 80			
Operational voltage, Ue [V]	230	400		
Short time withstand current, Icw	20 x In, 1sec			
Uimp [kV]	6			

Manufactured by

MITSUBISHI ELECTRIC DALIAN INDUSTRIAL PRODUCTS CO., LTD.

Application/Limitation

For installation inside switchboards/ enclosures onboard ships and offshore units.

Type Approval documentation

Marking of product

Manufacturer's name – type designation – Rated current, voltage and utilization category – Rated frequency – IEC 60947-3 – Identification of the open and closed position – Suitability for isolation (acc. to 60947-3 Table 1)

Other Conditions

Tests performed according to "EU RO Mutual Recognition Technical Requirements for switches" version 0.5

Environmental test parameters:

Temperature:	-25 °C and 55 °C
Humidity:	Relative humidity up to 100% at all relevant temperatures
Vibration:	± 1mm / 0.7g
EMC:	N/A
Enclosure:	IP20

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed annually.

END OF CERTIFICATE

Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).