



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA000025K
Revision No:
1

This is to certify:

that the **Electrical Measuring and Protection Relay**

with type designation(s)
MDR-2

issued to

DEIF A/S
Skive, Midtjylland, Denmark

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

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

Issued at **Høvik** on **2024-02-13**

This Certificate is valid until **2029-02-12**.

DNV local unit: **Denmark CMC**

Approval Engineer: **Thomas Hartmann**

for **DNV**



Digitally Signed By: **Schaarmann, Arne**
Location: **DNV SE Hamburg, Germany**
Signing Date: **2024-03-28**

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.



Form code: **TA 257**

Revision: **2023-07**

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Page **1** of **1**

Product description

MDR-2: Multi differential protection relay for monitoring of differential current of 3-phase generators / motors. Overcurrent and short circuit relay with option C3.

Technical data:

Binary inputs:	Input voltage 6 - 32 A. Impedance 2.4 k Ω bi-directional
Relay outputs:	250V/8A or 24V/1A
Frequency:	30 - 70 Hz
Measuring current:	From current transformers -/5A or -/1A.
Aux. supply:	12 - 24V DC +25 / +30 %
Protection degree:	Case & Terminals IP20, Display unit IP52
Material:	Plastic, self-extinguishing to UL94 (V1)

Application/Limitation

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

Location Classes:

Temperature:	B
Humidity:	B
Vibration:	A
EMC:	A

Short circuit protection (option C3) to be used as back-up protection only.

Type Approval documentation

Tests carried out

Type tests in accordance with IEC60255 (partly); Environmental tests dry heat, damp heat, cold, vibration, high voltage, EMC.

Marking of product

Manufacturer's label containing data and manufacturer's type number.

Certificate retention survey

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 Routine Tests (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.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE