DNV·GL

Certificate No:
TAA000025K

TYPE APPROVAL CERTIFICATE

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 GL 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 GL.

Issued at **Hamburg** on **2019-02-13**
This Certificate is valid until **2024-02-12**.
DNV GL local station: **Aalborg**

Approval Engineer: **Thomas Hartmann**

for **DNV GL**

Arne Schaarmann
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.

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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 kohm 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