

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric protection and measuring relay

with type designation(s)
MSC-3

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 **2019-12-19**

This Certificate is valid until **2024-12-18**.

DNV GL local station: **Denmark CMC**

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.



Product description

Generator Protection Unit (GPU) with Engine Monitoring and Protection Board (M4)

Generator Protection Unit (GPU):

Reverse Power Protection

Overcurrent Protection

For optional functions see PPU-3 type approval certificate TAA00000KD Rev.1

Software Version: 3.0x.x (MCS-3)

Diesel Engine Protection and Monitoring Board (M4):

Separate independent power supply

Separate independent microprocessor

3 x Multi Inputs

Magnetic pick-up input for RPM

7 x Binary inputs

4 x Relay outputs for start/stop control

Software Version: 2.0x.x (MCS-3)

Application/Limitation

Location Classes:

Temperature	B
Humidity	B
Vibration	A
EMC	A

For the installation in switchboards and cabinets

Type Approval documentation

Tests carried out

Test performed according to CG-0339[2016], Environmental and EMC tests

Marking of product

Manufacturer – type designation

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 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.



Job Id: **262.1-032042-1**
Certificate No: **TAA00002GV**

END OF CERTIFICATE