



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00001S8
Revision No:
2

This is to certify:

that the **Electrical Indicators**

with type designation(s)

MIC-2, MIC-2 MKII, MIC-2 MKII DIN, MIC-2 MKII FCT, MIC-2 MKII DIN FCT, MIC-2 MKII LV

issued to

DEIF A/S

Skive, 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.

Location classes:

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	see in product description

Issued at **Hamburg** on **2025-09-17**

This Certificate is valid until **2030-09-21**.

DNV local unit: **Denmark CMC**

Approval Engineer: **Torsten Dzillak**



for **DNV**

Digitally signed by: **Dariusz Lesniewski**
Location: **DNV SE, Germany**

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 USD 300 000.

Product description

Multi Instrument:

Power supply: 100-415 V AC 50/60 Hz or 100-300 V DC

Power supply, LV version: 20-60 V DC

Voltage measurement:

Nominal voltage: L - N 400 V AC; L - L 690 V AC

Measuring range: 0...1.2* Nominal voltage

Current measurement:

Nominal current: 5 A AC

Measuring range: 0 to 1.2* Nominal current

Measuring transducer signal input: 100 mV

Frequency measurement:

Nominal frequency: 50/60 Hz

Measuring range: 45-65 Hz

Accuracy for voltage, current and frequency: 0.2% of range

Digital input: 20-250 V AC/DC; 2 mA

Digital output: 0-250 V AC/DC; 100 mA; 25 Hz

Relay output: 250 V AC, 30 V DC; 3 A

Degree of protection: IP 52 (front), IP 30 (rear)

Communication: RS485,

Software version: 3.6X

Application/Limitation

Installation instruction of the manufacturer to be followed.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

The products to be marked with:

- Manufacturer name
- Model name
- Serial number
- Power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the 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