DNV·GL

Certificate No:
TAA00002R0

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
MINI MCR Series

Issued to
Phoenix Contact GmbH & Co. KG
Blomberg, Nordrhein-Westfalen, Germany

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.
Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**B**
EMC	**A/B***
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

*** see Application/Limitation**

Issued at **Hamburg** on **2020-05-13**
This Certificate is valid until **2025-05-12**.
DNV GL local station: **Hamburg CMC**

Approval Engineer: **Heinz Scheffler**

for **DNV GL**

Joannis Papanuskas
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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Universal Isolation Amplifier for Standard Signals and Temperature Sensors

Item No.	Item Name	Description
2864176	MINI MCR-SL-UI-2I-NC	Configurable 4-way isolating amplifier
2864480	MINI MCR-SL-UI-REL	Configurable 3-way threshold value switch
2864370	MINI MCR-SL-PT100-UI-200-NC	Configurable temperature transducer for RTD sensors (-50°-200°C)
2864273	MINI MCR-SL-PT100-UI-NC	Configurable temperature transducer for RTD sensors
2864134	MINI MCR-SL-PTB	Power-Terminal
2902829	MINI MCR-SL-UI-I-LP-NC	Isolation amplifier
2902822	MINI MCR-SL-CVS-24-5-10-NC	Constant voltage source
2902958	MINI MCR-SL-PTB-FM	Power terminal block
2902961	MINI MCR-SL-FM-RC-NC	Fault monitoring module
2902832	MINI MCR-SL-F-UI-NC	Frequency transducer
2902849	MINI MCR-RTD-UI-NC	Temperature transducer for RTD sensors
2902851	MINI MCR-TC-UI-NC	Temperature transducer for thermocouples

Application/Limitation

Location classes EMC B: 2902829; 2902822; 2902958; 2902849

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case.
Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, December 2019.

Marking of product

the products to be marked with:

- Model name
- Manufacturer name
- Serial number

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