DNV·GL

Certificate No:
TAA000020C

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Measurement Converter

with type designation(s)
MACX MCR

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	**A**
EMC	**A**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

Issued at **Hamburg** on **2018-10-22**
This Certificate is valid until **2019-11-25**.
DNV GL local station: **Magdeburg**

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.

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Product description

Repeater Power Supply	
2865955	MACX MCR-SL-RPSSI-I
2924207	MACX MCR-SL-RPSSI-I-SP
2924825	MACX MCR-SL-RPSSI-2I
2924838	MACX MCR-SL-RPSSI-2I-SP
2904089	MACX MCR-SL-RPSS-2I-2I
2904090	MACX MCR-SL-RPSS-2I-2I-SP
2865340	MACX MCR-EX-SL-RPSSI-I
2924016	MACX MCR-EX-SL-RPSSI-I-SP
2865366	MACX MCR-EX-SL-RPSSI-2I
2924236	MACX MCR-EX-SL-RPSSI-2I-SP
2865382	MACX MCR-EX-SL-RPSS-2I-2I
2924676	MACX MCR-EX-SL-RPSS-2I-2I-SP
2908855	MACX MCR-EX-SL-RPSSI-2I-1S
2908856	MACX MCR-EX-SL-RPSSI-2I-1S-SP
2904959	MACX PL-EX-RPSSI-2I
2904960	MACX PL-EX-RPSSI-2I-SP
2904961	MACX PL-RPSSI-2I
2904962	MACX PL-RPSSI-2I-SP
2904963	MACX PL-EX-RPSS-2I-2I
2904964	MACX PL-EX-RPSS-2I-2I-SP
Universal 3-way Signal Conditioner	
2811284	MACX MCR-UI-UI
2811446	MACX MCR-UI-UI-NC
2811572	MACX MCR-UI-UI-SP
2811556	MACX MCR-UI-UI-SP-NC
Solenoid Driver	
2865942	MACX MCR-EX-SL-SD-21-25-LP
2924113	MACX MCR-EX-SL-SD-21-25-LP-SP
2905669	MACX MCR-EX-SL-SD-21-25-LFD
2905674	MACX MCR-EX-SL-SD-21-25-LFD-SP
2865764	MACX MCR-EX-SL-SD-21-40-LP
2924139	MACX MCR-EX-SL-SD-21-40-LP-SP
2865609	MACX MCR-EX-SL-SD-24-48-LP
2924126	MACX MCR-EX-SL-SD-24-48-LP-SP
2924867	MACX MCR-EX-SL-SD-23-48-LFD
2924870	MACX MCR-EX-SL-SD-23-48-LFD-SP
2924867	MACX MCR-EX-SL-SD-24-48-LFD
2924870	MACX MCR-EX-SL-SD-24-48-LFD-SP

2865515	MACX MCR-EX-SL-SD-21-60-LP
2924100	MACX MCR-EX-SL-SD-21-60-LP-SP
NAMUR Signal Conditioner	
2865984	MACX MCR-EX-SL-2NAM-R-UP
2924249	MACX MCR-EX-SL-2NAM-R-UP-SP
2865052	MACX MCR-SL-2NAM-R-UP
2924304	MACX MCR-SL-2NAM-R-UP-SP
2866006	MACX MCR-EX-SL-NAM-NAM
2924883	MACX MCR-EX-SL-NAM-NAM-SP
Temperature Transducer	
2865654	MACX MCR-EX-T-UI-UP
2811763	MACX MCR-EX-T-UI-UP-C
2924689	MACX MCR-EX-T-UI-UP-SP
2924692	MACX MCR-EX-T-UI-UP-SP-C
2811394	MACX MCR-T-UI-UP
2811873	MACX MCR-T-UI-UP-C
2811860	MACX MCR-T-UI-UP-SP
2811970	MACX MCR-T-UI-UP-SP-C
2865751	MACX MCR-EX-T-UIREL-UP
2865722	MACX MCR-EX-T-UIREL-UP-C
2924799	MACX MCR-EX-T-UIREL-UP-SP
2924809	MACX MCR-EX-T-UIREL-UP-SP-C
2811378	MACX MCR-T-UIREL-UP
2811514	MACX MCR-T-UIREL-UP-C
2811828	MACX MCR-T-UIREL-UP-SP
2811831	MACX MCR-T-UIREL-UP-SP-C
2904910	MACX PL-EX-T-UIREL-UP
2904912	MACX PL-EX-T-UIREL-UP-SP
2904911	MACX PL-EX-T-UIREL-UP-C
2904913	MACX PL-EX-T-UIREL-UP-SP-C
2904901	MACX PL-T-UIREL-UP
2904903	MACX PL-T-UIREL-UP-SP
2904902	MACX PL-T-UIREL-UP-C
2904904	MACX PL-T-UIREL-UP-SP-C
2905599	MACX PL-T-UIREL-UP-SP-CS1
Limit Value Switches	
2906169	MACX MCR-SL-UI-REL
2906170	MACX MCR-SL-UI-REL-SP
2906164	MACX MCR-EX-SL-UI-REL
2906165	MACX MCR-EX-SL-UI-REL-SP

Mounting Unit	
2811886	IFS-OP-CRADLE
Operating and Display Unit	
2811899	IFS-OP-UNIT

Application/Limitation

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.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body

Type Approval documentation

Documents: TAA000020C_Overview_Documents_2018-10-22
Test reports: U131074E1; U132748E1 2nd version; U132748E2; PBS92625; E123348E2; E124638E2; E111012E2, E110105E2; E101461E2; E100613E2; E130167E2; E131760E2; NB EMC13-115889; E171070E2; U172469E1; E181900E1

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

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