

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
Inline Modules

Issued to

Phoenix Contact GmbH & Co. KG
Blomberg, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Location classes:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature B/D*
Humidity B
Vibration B
EMC A/B*
Enclosure A

*** Location classes for temperature and EMC are specified in the product table on page 2**

This Certificate is valid until **2023-04-17**.

Issued at **Hamburg** on **2018-04-18**

DNV GL local station: **Magdeburg**

for **DNV GL**

Approval Engineer: **Heinz Scheffler**

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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. If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, then the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million. In this provision the "Society" shall mean DNV GL AS as well as all its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV GL AS.

Certificate No: **TAA00001KV**
File No: **899.60**
Job Id: **262.1-006308-5**

Product description

Phoenix Contact Inline Modules comprising the following:

Mat.No (Rev.No) Article	Designation Article	Description	Temp. class	EMC class
2861357(05)	IB IL RS 232-PAC	Inline Terminal for Serial Data Transmission	B	A/B*
2742094(12)	IBS IL 24 BK-T/U	Inline Bus Coupler for INTERBUS	D	A/B*
2861580(10)	IBS IL 24 BK-T/U-PAC	Inline Bus Coupler for INTERBUS	D	A/B*
2832205(08)	FL IF 2FX SM SC-D	Inline Bus Terminal	B	A
2863707(04)	IB IL RS 485/422-PRO	Inline Terminal for Serial Data Transmission	B	A/B*
2863627(09)	IB IL RS 485/422-PRO-PAC	Inline Terminal for Serial Data Transmission	B	A/B*
2878515(04)	IB IL RS 232-PRO	Inline Terminal for Serial Data Transmission	B	A/B*
2878722(07)	IB IL RS 232-PRO-PAC	Inline Terminal for Serial Data Transmission	B	A/B*
2878696(13)	IL MOD BK DI8 DO4-PAC	Inline Bus Coupler for Modbus With Eight Digital Inputs and Four Digital Outputs	D	A
2878926(07)	IL PB BK DI8 DO4-PAC	Inline Bus Coupler for PROFIBUS-DP With Eight Digital Inputs and Four Digital Outputs	D	A

Option -PAC = complete article including connectors and labelling field

* Filter is required for EMC Class B. See Application/Limitation below.

Application/Limitation

EMC Class B requires the Phoenix Contact power line filter ME-MAX-NEF/QUINT20A to be applied for the DC power supply inputs as specified by the manufacturer.

The Type Approval covers hardware and Location class listed under Product description. When the hardware is used in applications to be classed by DNVGL, 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 Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test report: S10816 2nd; E10816B; E60461, S40560 2nd; E40328 2nd; S40815; E40815; E92909E1; E92909E2; E92909E3; Assessment report BSH 46105/1515/10

Documents: Documents overview_172190_2018-04-16; HW-SW overview_172190_2018-02-07

Tests carried out

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

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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