

TYPE APPROVAL CERTIFICATE

This is to certify:

That the DC Power Supply

with type designation(s)

QUINT4-S-ORING / QUINT-ORING / QUINT DIODE / TRIO DIODE

Issued to

Phoenix Contact GmbH & Co. KG
Blomberg, Germany

is found to comply with

DNV GL rules for classification – Ships

DNV GL rules for classification – High speed and light craft

DNV GL offshore standards

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Temperature A

Humidity B

Vibration A

EMC A/B see Application/Limitation

Enclosure A

Issued at **Hamburg** on **2017-02-24**

This Certificate is valid until **2022-02-23**.

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.



Product description

DIN-rail mountable active redundancy module, 24 V DC, Protection degree: IP20.

Type	Nominal Input Voltage	Input / Output Voltage Range	Nominal Output Current
QUINT-ORING/24DC/2x40/1x80	24 V DC	10 - 30 VDC	2x40 A / 1x80 A
QUINT-ORING/24DC/2x20/1x40 *	24 V DC	10 - 30 VDC	2x20 A / 1x40 A
QUINT-ORING/24DC/2x10/1x20 *	24 V DC	10 - 30 VDC	2x10 A / 1x20 A
QUINT-DIODE/12-24DC/2x20/1x40 *	24 V DC	10 - 30 VDC	2x20 A / 1x40 A
QUINT- DIODE/48DC/2x20/1x40 *	48 V DC	30 - 56 VDC	2x20 A / 1x40
QUINT4-DIODE/12-24DC/2x20/1x40 *	24 V DC	10 - 30 VDC	2x20 A / 1x40
QUINT4-DIODE/48DC/2X20/1X40 *	48 V DC	30 - 56 VDC	2x20 A / 1x40
TRIO-DIODE/12-24DC/2x10/1x20	24 V DC	10 - 30 VDC	2x10 A / 1x20 A
QUINT4-S-ORING/12-24DC/1x40	24 V DC	8 - 30 VDC	1x40 A
QUINT4-S-ORING/12-24DC/1x40/+	24 V DC	8 - 26 VDC	1x40 A

Application/Limitation

*These QUINT-ORING and QUINT-DIODE can be installed in all locations except bridge and open deck.

Ambient temperature (operation) > 60 °C Derating: 2,5 %/K.

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

Datasheets: 104278_en_00, 104623_en_06, 104624_en_05, 104690_en_01, 104691_en_01, 105526_en_03, 9071398_ia_01, 9071400_ia_01, 9071510_ia_01

Test Reports: E102226E1, E102226E2, E102301E12, E102301E22, E125021E1, E130315E2, E160317E1, E160317E2, E160869E12, E160869E22, U113617E1, U113617E2, U113617E3 2nd, U145396E1, U160869E1, U161845E1

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE