

TYPE APPROVAL CERTIFICATE

This is to certify:**That the DC Power Supply**with type designation(s)
QUINT4-PS DC/DC converter

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 D*****Humidity B****Vibration C****EMC B****Enclosure Required protection according to the Rules shall be provided upon installation on board.*****see Application/Limitation**Issued at **Hamburg** on **2019-02-15**This Certificate is valid until **2024-02-14**.DNV GL local station: **Essen**for **DNV GL**Approval Engineer: **Heinz Scheffler****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

Primary-switched power supply with SFB and NFC Interface.

SFB: Selective Fuse Breaking for standard circuit breakers. Circuit breakers can be tripped reliably and quickly with SFB technology and six times the nominal current for 15 ms.

NFC Interface allows sending data providing user defined parameter, for example: signaling threshold level, output voltage between 24 VDC and 29,5 VDC and output characteristic. Implemented NFC Interface for adaptive configuration to application needs.

Article No.	Designation Article	Nominal Input Voltage Range	Nominal Output Voltage Range	Nominal output Current
2910119	QUINT4-PS/24DC/24DC/5/PT	18 VDC-32 VDC	24 VDC - 29,5 VDC	5 A
1046800	QUINT4-PS/24DC/24DC/5/SC	18 VDC-32 VDC	24 VDC - 29,5 VDC	5 A
2910120	QUINT4-PS/24DC/24DC/10/PT	18 VDC-32 VDC	24 VDC - 29,5 VDC	10 A
1046803	QUINT4-PS/24DC/24DC/10/SC	18 VDC-32 VDC	24 VDC - 29,5 DC	10 A
2910122	QUINT4-PS/24DC/12DC/8/PT	18 VDC-32 VDC	12 VDC - 15 VDC	8 A
1046806	QUINT4-PS/24DC/12DC/8/SC	18 VDC-32 VDC	12 VDC - 15 VDC	8 A
2910125	QUINT4-PS/48DC/24DC/5/PT	29 VDC - 60 VDC	24 VDC - 29,5 VDC	5 A
1046860	QUINT4-PS/48DC/24DC/5/SC	29 VDC - 60 VDC	24 VDC - 29,5 VDC	5 A

SC: Screw connection
PT: Push-in connection

The QUINT 4 PS can be configured or directly delivered with customer specific parameterizations such as output current limitation, voltage adjustment or signaling:

Output characteristic (Alternative to default U/I Advanced characteristic available)

- limitation of short circuit current (Smart HICCUP)
- functionality to switch off output voltage 24 V DC if output power exceeds a adjustable level (FUSE MODE)

Signals

- signal contacts can be used for different outputs (for example: output current, output power) with adjustable thresholds

Control input

- Switch on and off signal of Remote control input can be inverted.

Output voltage

- output voltage can be adjusted by using the front buttons of the device or the NFC Interface
- voltage drop over output power can be adjusted (e.g. PARALLEL MODE)
- front buttons for output voltage can be locked

Application/Limitation

Temperature-dependent derating: At ambient temperatures above +60 °C, the output power must be decreased by 2.5 % per Kelvin increase in temperature.

The Type Approval covers hardware 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 DNVGL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test Reports: E181028E12; E181028E13; E181028E22; E181028E23; E181028E42; E181028E43, E181028E52; E181028E53, U181028E1; S154047E1

Documents: AB-181028_Overview_Documents_Rev.01; MNR 1064309; MNR 1064309; MNR 1050686; MNR 1050686; MNR 1093245; MNR 1093245; MNR 1093230; MNR 1093230

Tests carried out

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

Applicable tests according to IEC 60945, 2002: Chapter 8.2.2; Chapter 8.3; Chapter 8.4.2; Chapter 8.7; Chapter 11.1

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