Certificate No:
TAA000030X

TYPE APPROVAL CERTIFICATE

This is to certify:

That the DC Power Supply

with type designation(s)
QUINT- PS 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.
Location classes:

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

*** see Application/Limitation**

Issued at **Hamburg** on **2021-06-22**
This Certificate is valid until **2026-06-21**.
DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Heinz Scheffler**

for **DNV**

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

Product description

Primary-switched power supply with SFB technology & EMC filter:

Mat.No	Designation Article	Description	EMC Class	Vibration class
2866747	QUINT-PS/1AC/24DC/ 3.5	Input 100 V to 240 V AC / 90 V to 350 V DC Output 24 V DC / 3,5 A	A	A / C
2866750	QUINT-PS/1AC/24DC/ 5	Input 100 V to 240 V AC / 90 V to 350 V DC Output 24 V DC / 5 A	A	A / C
2320908	QUINT-PS/1AC/24DC/ 5/CO	Input 100 V to 240 V AC / 90 V to 350 V DC Output 24 V DC / 5 A	A	A / C
2866763	QUINT-PS/1AC/24DC/10	Input 100 V to 240 V AC / 90 V to 250 V DC Output 24 V DC / 10 A	B	A / C
2320911	QUINT-PS/1AC/24DC/10/CO	Input 100 V to 240 V AC / 90 V to 250 V DC Output 24 V DC / 10 A	B	A
2866776	QUINT-PS/1AC/24DC/20	Input 100 V to 240 V AC / 90 V to 350 V DC Output 24 V DC / 20 A	B (only with Filter 2319919)	A / C
2320898	QUINT-PS/1AC/24DC/20/CO	Input 100 V to 240 V AC / 90 V to 250 V DC Output 24 V DC / 20 A	B (only with Filter 2319919)	A / C
2866789	QUINT-PS/1AC/24DC/40	Input 100 V to 240 V AC / 90 V to 300 V DC Output 24 V DC / 40 A	A	A
2866682	QUINT-PS/1AC/48DC/10	Input 100 V to 240 V AC / 90 V to 350 V DC Output 48 V DC / 10 A	A	A
2866695	QUINT-PS/1AC/48DC/20	Input 100 V to 240 V AC / 90 V to 300 V DC Output 48 V DC / 20 A	A	A
2866734	QUINT-PS/3AC/24DC/ 5	Input 2/3 x 400V to 500 V AC/450 V to 800 V DC Output 24 V DC 5 A	A	A / C
2866705	QUINT-PS/3AC/24DC/10	Input 2/3 x 400V to 500 V AC/450 V to 800 V DC Output 24 V DC 10 A	B	A / C
2866792	QUINT-PS/3AC/24DC/20	Input 2/3 x 400V to 500 V AC/450 V to 800 V DC Output 24 V DC 20 A	A	A / C
2320924	QUINT-PS/3AC/24DC/20/CO	Input 2/3 x 400V to 500 V AC/450 V to 800 V DC Output 24 V DC 20 A	A	A / C
2866802	QUINT-PS/3AC/24DC/40	Input 2/3 x 400V to 500 V AC/450 V to 800 V DC Output 24 V DC 40 A	A	A
2319919	ME-MAX-NEF/QUINT20A	EMC Filter	-	A

Table Phoenix power supply & filter

Voltage adjustment:
The QUINT-PS/xxx can be configured or directly delivered with customer specific voltage adjustment, identified by a 1-to-30-character alphanumeric suffix (any combination of letters/numbers) behind the type designation.

The output voltage can be also adjusted by using the potentiometer on the front

Application/Limitation

Location classes for EMC A/B*: see Table Phoenix power supply & filter
Location classes for Vibration A/C*: see Table Phoenix power supply & filter
Location class Temperature D: 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.

Reduced safe distances and safe distances according IEC 60945 for Standard Compass and Steering Compass shall be considered for installation on bridge.

Type Approval documentation

Test reports:

- EMC: 101322ah07, 101322ah08, 101322v04, E101382E2, E180246E3, E200673E1, E171625E1, E070512E2, E080193E2, E080194E3, E082558E1, E082558E2, E090402E2, E101321E2, E101322E1, E101382E2, E133459E2, E70012B, E70182B, E70182B 2nd Version, E70183B, E70294B, E70510B, E70511B, E70969B; E210884E1
- Environmental: U082558E2, U082558E1, U092153E1, U112661E1, U72596a, U72596b, U72596c, U72596d, U72596e, U72596f, U72596g, U90400E1, U90400E2.
- Performance: tr_q3-1ac-24-40_vs_q3-1ac-48-20_2013-11-20.docx

Document:

- TAA000030X_Overview_Documents_Rev.00
- Package Insert: 9046218, 9033083, 9033084, 9033085, 9033086, 9033087, 9037321, 9037322, 9037323, 9037324, 9040219, 9050031, 9050172, 9050173, 9050175, 9054153

Tests carried out

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

Marking of product

The products to be marked with:

- manufacturer name
- model 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