Certificate No:
**TAA00002K4**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the DC Power Supply**

with type designation(s)
**QUINT4-UPS/24DC/24DC/XX;**

Issued to
## Phoenix Contact GmbH & Co. KG
**Blomberg, Nordrhein-Westfalen, Germany**

is found to comply with
**Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**

## 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** | **A/C** |
| **EMC** | **B** |
| **Enclosure** | **Required protection according to the Rules shall be provided upon installation on board.** |

*** see Application/Limitation**

Issued at **Hamburg** on **2021-05-31**
This Certificate is valid until **2026-05-30**.
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

The QUINT DC-UPS uninterruptible power supply enables continued supply of critical loads in the event of a power supply malfunction.

| Mat.-No. | Designation | Output current ($I_N$) | Communication interfaces |
|---|---|---|---|
| 2906990 | QUINT4-UPS/24DC/24DC/5 | 5 A | no communication |
| 2906991 | QUINT4-UPS/24DC/24DC/5/USB | 5 A | USB (Modbus/RTU) |
| 2906993 | QUINT4-UPS/24DC/24DC/5/PN | 5 A | PROFINET |
| 2906994 | QUINT4-UPS/24DC/24DC/5/EIP | 5 A | EtherNet/IP, Modbus/TCP |
| 2906996 | QUINT4-UPS/24DC/24DC/5/EC | 5 A | EtherCAT |
| 2907066 | QUINT4-UPS/24DC/24DC/10 | 10 A | no communication |
| 2907067 | QUINT4-UPS/24DC/24DC/10/USB | 10 A | USB (Modbus/RTU) |
| 2907068 | QUINT4-UPS/24DC/24DC/10/PN | 10 A | PROFINET |
| 2907069 | QUINT4-UPS/24DC/24DC/10/EIP | 10 A | EtherNet/IP, Modbus/TCP |
| 2907070 | QUINT4-UPS/24DC/24DC/10/EC | 10 A | EtherCAT |
| 2907071 | QUINT4-UPS/24DC/24DC/20 | 20 A | no communication |
| 2907072 | QUINT4-UPS/24DC/24DC/20/USB | 20 A | USB (Modbus/RTU) |
| 2907073 | QUINT4-UPS/24DC/24DC/20/PN | 20 A | PROFINET |
| 2907074 | QUINT4-UPS/24DC/24DC/20/EIP | 20 A | EtherNet/IP, Modbus/TCP |
| 2907076 | QUINT4-UPS/24DC/24DC/20/EC | 20 A | EtherCAT |
| 2907077 | QUINT4-UPS/24DC/24DC/40 | 40 A | no communication |
| 2907078 | QUINT4-UPS/24DC/24DC/40/USB | 40 A | USB (Modbus/RTU) |
| 2907079 | QUINT4-UPS/24DC/24DC/40/PN | 40 A | PROFINET |
| 2907080 | QUINT4-UPS/24DC/24DC/40/EIP | 40 A | EtherNet/IP, Modbus/TCP |
| 2907081 | QUINT4-UPS/24DC/24DC/40/EC | 40 A | EtherCAT |

All Type names may be followed by a suffix of one or more alphanumeric or special characters including " - / , . _ " or semicolon or blank, only for:

- Internal references
- Specific or additional markings on the unit or packaging
- Specific packaging
- Presetting / parameterizations such as e.g. output current limitation, voltage adjustment or signalling

## Application/Limitation

**Location classes 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.
Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

## Type Approval documentation

Test Reports: E172063E12; E172063E22; E172063E32; E172063E42; E210120E1; U172063E1; U201581E1
Documents: TAA00002K4_Overview_Documents_Rev.00

## Tests carried out
Applicable tests according to class guideline DNVGL-CG-0339, December 2019

## 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