# Certificate of Compliance

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| **Certificate:** | 80031630 | **Master Contract:** | 158887 |
| **Project:** | 80031630 | **Date Issued:** | 2020-02-28 |

**Issued To:** **Phoenix Contact GmbH & Co. KG**
**Flachsmarktstrasse 8**
**Blomberg, Nordrhein-Westfalen, D-32825**
**Germany**

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.***

**Issued by:** *Jean-Philippe Laplante*
Jean-Philippe Laplante

C US

**PRODUCTS**
CLASS - C225206 - PROCESS CONTROL EQUIPMENT
CLASS - C225286 - PROCESS CONTROL EQUIPMENT Certified to US Standards

Component-type Built-in DIN Rail DC/DC Converter, Models:

- QUINT4-PS/24DC/24DC/20/SC/…/…/… & QUINT4-PS/24DC/24DC/20/PT/…/…/…; Input rated: 24Vdc, 27A; Output rated: 24 to 29.5Vdc, 20A@24Vdc – 16.3A@29.5Vdc up to 60°C with derating 2.5% of nominal output power of 480W per Kelvin from 60°C to 70°C: 15A@24Vdc – 12.2A@29.5Vdc. The product was evaluated in boost mode of 600W with output of 25A@24Vdc to 20.3A@29.5Vdc at max temperature of 40°C

- QUINT4-PS/24DC/24DC/20/SC/+/…/…/… & QUINT4-PS/24DC/24DC/20/PT/+/…/…/…; Input rated: 24Vdc, 27A; Output rated: 24 to 28Vdc, 20A@24Vdc – 17.1A@28Vdc up to 60°C with derating 2.5% of nominal output power of 480W per Kelvin from 60°C to 70°C: 15A@24Vdc – 12.8A@28Vdc. The product


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was evaluated in boost mode of 600W with output of 25A@24Vdc to 21.4A@28Vdc at max temperature of 40°C

(Where: /…/…/… may be of any alphanumeric characters or left blank, not safety relevant)

**Notes:**

1. The above model is Equipment Pollution Degree 2, Overvoltage Category II
2. The unit has been evaluated as a component where the acceptability of the combination with the end use product shall be re-evaluated.
3. Mode of operation: Continuous
4. Environmental Conditions for QUINT4-PS/24DC/24DC/20/SC/…/…/… & QUINT4-PS/24DC/24DC/20/PT/…/…/…: Extended: -25°C to 70°C with derating from 60°C to 70°C at nominal power of 480W / -25°C to 40°C in boost mode 600W, 5000 m max, less than 95% RH non-condensing.
5. Environmental Conditions for QUINT4-PS/24DC/24DC/20/SC/+/…/…/… & QUINT4-PS/24DC/24DC/20/PT/+/…/…/…: Extended: -40°C to 70°C with derating from 60°C to 70°C at nominal power of 480W / -40°C to 40°C in boost mode 600W, 5000 m max, less than 95% RH non-condensing.
6. This product was not evaluated to be used on hazardous location.
7. The unit is DC/DC converter with SELV input and metal housing that could be connected to PE – (end product consideration)

## APPLICABLE REQUIREMENTS

CSA Standards:

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|---|---|
| CAN/CSA C22.2 No. 61010-1-12, UPD1: 2015, UPD2: 2016, AMD1: 2018 | Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements |
| CAN/CSA-C22.2 No. 61010-2-201:14 | Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 2-201: Particular requirements for control equipment |

UL Standards:

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|---|---|
| UL 61010-1, 3rd edition (2012), AMD1: 2018 | Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements |
| UL Std. No. 61010-2-201: 2018 | Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 2-201: Particular requirements for control equipment |


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## CONDITIONS OF ACCEPTABILITY

1. End product should provide double or reinforced insulation between primary circuit and input of the power supply (EUT). Input voltage is rated SELV. Rated output power is 480 W and boost output power is 600 W.

2. The unit provides no disconnecting device or internal fuse. Disconnect device and fuse (max 50A C) must be provided in the final installation (refer to manual)

3. Safety Instructions: Built in unit for a specific end product; manual/safety instructions are end product considerations. In addition there are some safety instructions in the manual.

4. The input and output terminals and connectors are suitable for factory and field wiring.

5. The converter is rated: not classified (DC/DC converter with SELV input and metal housing that could be connected to PE - end product consideration).

6. The transformers TR4000 and TR9000 provide reinforced insulation. Transformer T4200 provide functional insulation. TR9000 transformer is built up to fulfil the requirement of insulation class B. TR4000 and T4200 transformers are built up to fulfil the requirement of insulation class F. All provide in addition an UR (OBJY2) insulation system. (Refer also to List of safety critical components).

7. The converter has been evaluated for use in a Pollution Degree 2 and a maximum altitude of 5000m.

8. A suitable Electrical and Fire enclosure shall be provided in the end equipment.

9. Converters were evaluated for a maximum ambient of 60 °C (without derating for nominal output power: 480 W) and 70 °C (with derating 2,5 % of nominal output power per Kelvin from 60 °C: QUINT4-PS/24DC/24DC/20/xx: 15 A@24Vdc; 12.2 A@29,5Vdc, QUINT4-PS/24DC/24DC/20/xx/+: 15A@24Vdc; 12.8 A@28Vdc

Additionally converters were evaluated for maximum ambient of 40 °C at boost mode: QUINT4-PS/24DC/24DC/20/xx: 600 W; 25 A@24Vdc; 20.3 A@29,5Vdc, QUINT4-PS/24DC/24DC/20/xx/+: 600 W; 25 A@24Vdc; 21.4 A@28Vdc
Derating due to output voltage regulation (29,5Vdc for QUINT4-PS/24DC/24DC/20/xx and 28Vdc for QUINT4-PS/24DC/24DC/10/xx/+ was considered per manufacturer's specifications. The rated output power shall not be exceeded. The temperature test was performed in a heating chamber, without forced air cooling.


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