



Certificate Number: 09222017-D-D1009

Date: 2018-01-16

## UL CONDITIONS OF ACCEPTABILITY

**Company Name:** TRACO ELECTRONIC AG

**File-CCN:** E188913, QQHM2 & QQHM8

**Product Description:** Switching Power Supply

**Models:** TPP 15-103A-Jzzzzzzzz, TPP 15-105A-Jzzzzzzzz, TPP 15-107A-Jzzzzzzzz, TPP 15-109A-Jzzzzzzzz, TPP 15-112A-Jzzzzzzzz, TPP 15-115A-Jzzzzzzzz, TPP 15-118A-Jzzzzzzzz, TPP 15-124A-Jzzzzzzzz, TPP 15-128A-Jzzzzzzzz, TPP 15-136A-Jzzzzzzzz, TPP 15-148A-Jzzzzzzzz, TPP 15-153A-Jzzzzzzzz, TPP 15-103-Jzzzzzzzz, TPP 15-105-Jzzzzzzzz, TPP 15-107-Jzzzzzzzz, TPP 15-109-Jzzzzzzzz, TPP 15-112-Jzzzzzzzz, TPP 15-115-Jzzzzzzzz, TPP 15-118-Jzzzzzzzz, TPP 15-124-Jzzzzzzzz, TPP 15-128-Jzzzzzzzz, TPP 15-136-Jzzzzzzzz, TPP 15-148-Jzzzzzzzz, TPP 15-153-Jzzzzzzzz, TPP 15-103zzzzzzzz, TPP 15-105zzzzzzzz, TPP 15-107zzzzzzzz, TPP 15-109zzzzzzzz, TPP 15-112zzzzzzzz, TPP 15-115zzzzzzzz, TPP 15-118zzzzzzzz, TPP 15-124zzzzzzzz, TPP 15-128zzzzzzzz, TPP 15-136zzzzzzzz, TPP 15-148zzzzzzzz, TPP 15-153zzzzzzzz, TPP 15-103A-Mzzzzzzzz, TPP 15-105A-Mzzzzzzzz, TPP 15-107A-Mzzzzzzzz, TPP 15-109A-Mzzzzzzzz, TPP 15-112A-Mzzzzzzzz, TPP 15-115A-Mzzzzzzzz, TPP 15-118A-Mzzzzzzzz, TPP 15-124A-Mzzzzzzzz, TPP 15-128A-Mzzzzzzzz, TPP 15-136A-Mzzzzzzzz, TPP 15-148A-Mzzzzzzzz, TPP 15-153A-Mzzzzzzzz, TPP 15-103-Mzzzzzzzz, TPP 15-105-Mzzzzzzzz, TPP 15-107-Mzzzzzzzz, TPP 15-109-Mzzzzzzzz, TPP 15-112-Mzzzzzzzz, TPP 15-115-Mzzzzzzzz, TPP 15-118-Mzzzzzzzz, TPP 15-124-Mzzzzzzzz, TPP 15-128-Mzzzzzzzz, TPP 15-136-Mzzzzzzzz, TPP 15-148-Mzzzzzzzz, TPP 15-153-Mzzzzzzzz, TPP 15-103B-Mzzzzzzzz, TPP 15-105B-Mzzzzzzzz, TPP 15-107B-Mzzzzzzzz, TPP 15-109B-Mzzzzzzzz, TPP 15-112B-Mzzzzzzzz, TPP 15-115B-Mzzzzzzzz, TPP 15-118B-Mzzzzzzzz, TPP 15-124B-Mzzzzzzzz, TPP 15-128B-Mzzzzzzzz, TPP 15-136B-Mzzzzzzzz, TPP 15-148B-Mzzzzzzzz, TPP 15-153B-Mzzzzzzzz, TPP 15-103A-Dzzzzzzzz, TPP 15-105A-Dzzzzzzzz, TPP 15-107A-Dzzzzzzzz, TPP 15-109A-Dzzzzzzzz, TPP 15-112A-Dzzzzzzzz, TPP 15-115A-Dzzzzzzzz, TPP 15-118A-Dzzzzzzzz, TPP 15-124A-Dzzzzzzzz, TPP 15-128A-Dzzzzzzzz, TPP 15-136A-Dzzzzzzzz, TPP 15-148A-Dzzzzzzzz, TPP 15-153A-Dzzzzzzzz, TPP 15-103-Dzzzzzzzz, TPP 15-105-Dzzzzzzzz, TPP 15-107-Dzzzzzzzz, TPP 15-109-Dzzzzzzzz, TPP 15-112-Dzzzzzzzz, TPP 15-115-Dzzzzzzzz, TPP 15-118-Dzzzzzzzz, TPP 15-124-Dzzzzzzzz, TPP 15-128-Dzzzzzzzz, TPP 15-136-Dzzzzzzzz, TPP 15-148-Dzzzzzzzz, TPP 15-153-Dzzzzzzzz, TPP 15-103A2-Jzzzzzzzz, TPP 15-105A2-Jzzzzzzzz, TPP 15-107A2-Jzzzzzzzz, TPP 15-109A2-Jzzzzzzzz, TPP 15-112A2-Jzzzzzzzz, TPP 15-115A2-Jzzzzzzzz, TPP 15-118A2-Jzzzzzzzz, TPP 15-124A2-Jzzzzzzzz, TPP 15-128A2-Jzzzzzzzz, TPP 15-136A2-Jzzzzzzzz, TPP 15-148A2-Jzzzzzzzz, TPP 15-153A2-Jzzzzzzzz, TPP 15-103A2zzzzzzzz, TPP 15-105A2zzzzzzzz, TPP 15-107A2zzzzzzzz, TPP 15-109A2zzzzzzzz, TPP 15-112A2zzzzzzzz, TPP 15-115A2zzzzzzzz, TPP 15-118A2zzzzzzzz, TPP 15-124A2zzzzzzzz, TPP 15-128A2zzzzzzzz, TPP 15-136A2zzzzzzzz

**Models Continued:** TPP 15-148A2zzzzzzzz, TPP 15-153A2zzzzzzzz, TPP 15-103A2-Mzzzzzzzz, TPP 15-105A2-Mzzzzzzzz, TPP 15-107A2-Mzzzzzzzz, TPP 15-109A2-Mzzzzzzzz, TPP 15-112A2-Mzzzzzzzz, TPP 15-115A2-Mzzzzzzzz, TPP 15-118A2-Mzzzzzzzz, TPP 15-124A2-Mzzzzzzzz, TPP 15-128A2-Mzzzzzzzz, TPP 15-136A2-Mzzzzzzzz, TPP 15-148A2-Mzzzzzzzz, TPP 15-153A2-Mzzzzzzzz.

**Conditions Of Acceptability:** When installed in an end-product, consideration must be given to the following:

- This power supply has been evaluated as a Class II, continuous operation, ordinary Equipment and has not been evaluated for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide. An additional evaluation shall be made if the power supply is intended for use in other than Class II equipment.
- The unit provides the following MOPP (means of patient protection): 1 MOOP based upon a working voltage 250Vrms, 354Vpk between opposite polarity. 1MOPP based upon a working voltage 250Vrms, 354Vpk between Primary and floating part and between Secondary and floating part. 2 MOPP based upon a working voltage 250Vrms, 648Vpk between Primary to Secondary and Core (as primary) to Secondary of isolation transformer (TX1).
- Consideration should be given to measuring the temperatures on power electronic components and transformer windings when the power supply is installed in the end-use equipment. The transformer (TX1) incorporates a Class B, 130 °C insulation system. The end-use product shall ensure that the power supply is used within its ratings.
- The maximum ambient temperature for models TPP 15-103A-Jzzzzzzzz, TPP 15-105A-Jzzzzzzzz, TPP 15-107A-Jzzzzzzzz, TPP 15-109A-Jzzzzzzzz, TPP 15-112A-Jzzzzzzzz, TPP 15-115A-Jzzzzzzzz, TPP 15-118A-Jzzzzzzzz, TPP 15-124A-Jzzzzzzzz, TPP 15-128A-Jzzzzzzzz, TPP 15-136A-Jzzzzzzzz, TPP 15-148A-Jzzzzzzzz, TPP 15-153A-Jzzzzzzzz, TPP 15-103A-Mzzzzzzzz, TPP 15-105A-Mzzzzzzzz, TPP 15-107A-Mzzzzzzzz, TPP 15-109A-Mzzzzzzzz, TPP 15-112A-Mzzzzzzzz, TPP 15-115A-Mzzzzzzzz, TPP 15-118A-Mzzzzzzzz, TPP 15-124A-Mzzzzzzzz, TPP 15-128A-Mzzzzzzzz, TPP 15-136A-Mzzzzzzzz, TPP 15-148A-Mzzzzzzzz, TPP 15-153A-Mzzzzzzzz, TPP 15-103A-Dzzzzzzzz, TPP 15-105A-Dzzzzzzzz, TPP 15-107A-Dzzzzzzzz, TPP 15-109A-Dzzzzzzzz, TPP 15-112A-Dzzzzzzzz, TPP 15-115A-Dzzzzzzzz, TPP 15-118A-Dzzzzzzzz, TPP 15-124A-Dzzzzzzzz, TPP 15-128A-Dzzzzzzzz, TPP 15-136A-Dzzzzzzzz, TPP 15-148A-Dzzzzzzzz, TPP 15-153A-Dzzzzzzzz is **60 degree C**; TPP 15-103-Jzzzzzzzz, TPP 15-105-Jzzzzzzzz, TPP 15-107-Jzzzzzzzz, TPP 15-109-Jzzzzzzzz, TPP 15-112-Jzzzzzzzz, TPP 15-115-Jzzzzzzzz, TPP 15-118-Jzzzzzzzz, TPP 15-124-Jzzzzzzzz, TPP 15-128-Jzzzzzzzz, TPP 15-136-Jzzzzzzzz, TPP 15-148-Jzzzzzzzz, TPP 15-153-Jzzzzzzzz, TPP 15-103zzzzzzzz, TPP 15-105zzzzzzzz, TPP 15-107zzzzzzzz, TPP 15-109zzzzzzzz, TPP 15-112zzzzzzzz, TPP 15-115zzzzzzzz, TPP 15-118zzzzzzzz, TPP 15-124zzzzzzzz, TPP 15-128zzzzzzzz, TPP 15-136zzzzzzzz, TPP 15-148zzzzzzzz, TPP 15-153zzzzzzzz, TPP 15-103-Mzzzzzzzz, TPP 15-105-Mzzzzzzzz, TPP 15-107-Mzzzzzzzz, TPP 15-109-Mzzzzzzzz, TPP 15-112-Mzzzzzzzz, TPP 15-115-Mzzzzzzzz, TPP 15-118-Mzzzzzzzz, TPP 15-124-Mzzzzzzzz, TPP 15-128-Mzzzzzzzz, TPP 15-136-Mzzzzzzzz, TPP 15-148-Mzzzzzzzz, TPP 15-153-Mzzzzzzzz, TPP 15-103B-Mzzzzzzzz, TPP 15-105B-Mzzzzzzzz, TPP 15-107B-Mzzzzzzzz, TPP 15-109B-Mzzzzzzzz, TPP 15-112B-Mzzzzzzzz, TPP 15-115B-Mzzzzzzzz, TPP 15-118B-Mzzzzzzzz, TPP 15-124B-Mzzzzzzzz, TPP 15-128B-Mzzzzzzzz, TPP 15-136B-

Mzzzzzzzz, TPP 15-148B-Mzzzzzzzz, TPP 15-153B-Mzzzzzzzz, TPP 15-103-Dzzzzzzzz, TPP 15-105-Dzzzzzzzz, TPP 15-107-Dzzzzzzzz, TPP 15-109-Dzzzzzzzz, TPP 15-112-Dzzzzzzzz, TPP 15-115-Dzzzzzzzz, TPP 15-118-Dzzzzzzzz, TPP 15-124-Dzzzzzzzz, TPP 15-128-Dzzzzzzzz, TPP 15-136-Dzzzzzzzz, TPP 15-148-Dzzzzzzzz, TPP 15-153-Dzzzzzzzz, TPP 15-103A2-Jzzzzzzzz, TPP 15-105A2-Jzzzzzzzz, TPP 15-107A2-Jzzzzzzzz, TPP 15-109A2-Jzzzzzzzz, TPP 15-112A2-Jzzzzzzzz, TPP 15-115A2-Jzzzzzzzz, TPP 15-118A2-Jzzzzzzzz, TPP 15-124A2-Jzzzzzzzz, TPP 15-128A2-Jzzzzzzzz, TPP 15-136A2-Jzzzzzzzz, TPP 15-148A2-Jzzzzzzzz, TPP 15-153A2-Jzzzzzzzz, TPP 15-103A2zzzzzzzz, TPP 15-105A2zzzzzzzz, TPP 15-107A2zzzzzzzz, TPP 15-109A2zzzzzzzz, TPP 15-112A2zzzzzzzz, TPP 15-115A2zzzzzzzz, TPP 15-118A2zzzzzzzz, TPP 15-124A2zzzzzzzz, TPP 15-128A2zzzzzzzz, TPP 15-136A2zzzzzzzz, TPP 15-148A2zzzzzzzz, TPP 15-153A2zzzzzzzz, TPP 15-103A2-Mzzzzzzzz, TPP 15-105A2-Mzzzzzzzz, TPP 15-107A2-Mzzzzzzzz, TPP 15-109A2-Mzzzzzzzz, TPP 15-112A2-Mzzzzzzzz, TPP 15-115A2-Mzzzzzzzz, TPP 15-118A2-Mzzzzzzzz, TPP 15-124A2-Mzzzzzzzz, TPP 15-128A2-Mzzzzzzzz, TPP 15-136A2-Mzzzzzzzz, TPP 15-148A2-Mzzzzzzzz, TPP 15-153A2-Mzzzzzzzz **is 65 degree C.**

- Temperature, Leakage Current, Dielectric Voltage Withstand, Legibility of Markings, Durability of marking test and Voltage or Charge Limitation test should be considered as part of the end product evaluation.
- The secondary output circuit of the product is SELV, but this power supply has not been evaluated for patient connected applications. Considerations to the applied parts requirement are to be conducted as end-product.
- The output circuits have not been evaluated for direct patient connection (Type B, BF or CF) nor connecting to Applied Parts. For end product intend to connect the output circuit to Applied Parts, suitable evaluation of the separation, leakage current, dielectric voltage withstand, and related requirements should be conducted.
- The component shall be installed in compliance with the enclosure, mounting, marking, spacing, and separation requirements of the end use application.
- A suitable Mechanical, Electrical and Fire enclosure shall be provided in the end-use product.
- The input/output connectors are not acceptable for field connections; they are only intended for factory wiring inside the end-use product.
- The end-product evaluation shall ensure that the requirements related to Accompanying Documents, Clause 7.9 and Label marking, Clause 7.2 are met.
- End product to determine the acceptability of risk in conjunction to the Cleaning and Disinfection Methods as part of the power supply.
- The accessibility of output connectors, insulating materials and temperatures shall be considered in the end use product.
- The additional temperature measurement conditions according to sub-clause 11.1 (normal temperature) were conducted as per client's request for reference only as below: Model TPP 15-124-Dzzzzzzzz, TPP 15-124-Jzzzzzzzz, TPP 15-124zzzzzzzz, TPP 15-124-Mzzzzzzzz for test input 90 VAC/115VAC/230VAC/264VAC is ambient 70 degree C, TPP 15-124A-Jzzzzzzzz, TPP 15-124A-Mzzzzzzzz, TPP 15-124A-Dzzzzzzzz for test input 115VAC/230VAC is ambient 70 degree C.
- Only one fuse provided in Neutral for layout A, proper connection to supply lead shall be conducted in end product.

- For models with 4 screw points which is conducted as considered as floating between primary and secondary with 1MOPP respectively (see insulation diagram for details), proper insulation shall be conducted in end product.
- Clause 8.11.5 Overcurrent releases of adequate breaking capacity of fuse is verified by SFC testing (short component near L/N), if the end product has additional construction and affect the performance of overcurrent release of adequate breaking capacity of fuse, suitable fuse should be provided bases on the end use application.

**Ratings:**

Input Rating: 100-240Vac, 50-60Hz, 0.45A Max.

Output Rating: See Enclosure ID "Miscellaneous - (01)" & Model Differences section for details.

**Nomenclature:** Where z represents marketing purpose only, no technical difference.