



Certificate Number: 030717D1-D1003

Date: 2017-11-14

UL CONDITIONS OF ACCEPTABILITY

Company Name: TRACO ELECTRONIC AG

File-CCN: E188913, QQHM2 & QQHM8

Product Description:

Model: TPP100-112Azzzzzzzz, TPP100-115Azzzzzzzz, TPP100-118Azzzzzzzz, TPP100-124Azzzzzzzz, TPP100-128Azzzzzzzz, TPP100-136Azzzzzzzz, TPP100-148Azzzzzzzz, TPP150-112Azzzzzzzz, TPP150-115Azzzzzzzz, TPP150-118Azzzzzzzz, TPP150-124Azzzzzzzz, TPP150-128Azzzzzzzz, TPP150-136Azzzzzzzz, TPP150-148Azzzzzzzz, TPP100-112Dzzzzzzzz, TPP100-115Dzzzzzzzz, TPP100-118Dzzzzzzzz, TPP100-124Dzzzzzzzz, TPP100-128Dzzzzzzzz, TPP100-136Dzzzzzzzz, TPP100-148Dzzzzzzzz, TPP150-112Dzzzzzzzz, TPP150-115Dzzzzzzzz, TPP150-118Dzzzzzzzz, TPP150-124Dzzzzzzzz, TPP150-128Dzzzzzzzz, TPP150-136Dzzzzzzzz, TPP150-148Dzzzzzzzz, TPP100-112zzzzzzzz, TPP100-115zzzzzzzz, TPP100-118zzzzzzzz, TPP100-124zzzzzzzz, TPP100-128zzzzzzzz, TPP100-136zzzzzzzz, TPP100-148zzzzzzzz, TPP150-112zzzzzzzz, TPP150-115zzzzzzzz, TPP150-118zzzzzzzz, TPP150-124zzzzzzzz, TPP150-128zzzzzzzz, TPP150-136zzzzzzzz, TPP150-148zzzzzzzz, TPP100-112Uzzzzzzzz, TPP100-115Uzzzzzzzz, TPP100-118Uzzzzzzzz, TPP100-124Uzzzzzzzz, TPP100-128Uzzzzzzzz, TPP100-136Uzzzzzzzz, TPP100-148Uzzzzzzzz, TPP150-112Uzzzzzzzz, TPP150-115Uzzzzzzzz, TPP150-118Uzzzzzzzz, TPP150-124Uzzzzzzzz, TPP150-128Uzzzzzzzz, TPP150-136Uzzzzzzzz, TPP150-148Uzzzzzzzz.

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

- This power supply has been judged on the basis of the required creepage and clearances in the First Edition of the Standard for Medical Electrical Equipment, ANSI/AAMI ES 60601-1, Sub clause 8.9.
- 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.
- This power supply was tested on a 20A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary.
- The power supply was evaluated as 2 MOPP between Primary to Secondary and Core to Secondary of transformer (T1). 2 MOPP was provided between Primary to Secondary and 1 MOPP from Primary to Earth see insulation diagram for details.
- Consideration shall be given to measuring the temperatures on power electronic components and transformer windings when the power supply is installed in/with the end-use equipment. Transformer T1 employs a Class B (130°C) insulation system.
- The secondary output circuit of the product is SELV.
- The ambient temperature for model X100USYBzzzzzzzz with full load 100W (with fan) is 50 degree C and with , derated load 80W (without fan) is 40 degree C; model X150US05Bzzzzzzzz

with full load 100W (with fan) is 50 degree C; model X150USYBzzzzzzzz(Y=12, 15, 18, 24, 36, or 48) with full load 150W (with fan) and with derated load 80W (without fan) is 50 degree C.

- The following tests shall be performed in the end-product evaluation: Voltage or Charge Limitation Test for L/N to PE, Temperature Test, Dielectric Voltage Withstand Tests, and Leakage Current Test.
- The maximum reference voltage for Dielectric Voltage Test in End Product: 344 Vrms, 820 Vpk for T1 (Model MED100US48B)
- This power supply shall be installed in compliance with the enclosure, mounting, spacing, casualty, markings and segregation requirements of the end use application.
- This power supply is operated up to 5000m above sea level as declared by manufacturer.
- End product Risk Management Process to include consideration of requirements specific to the Power Supply.
- End product Risk Management Process to consider the need for simultaneous fault condition testing.
- End product to determine the acceptability of risk in conjunction to insulation to resistance to heat, moisture, and dielectric strength.
- Temperature Test was conducted without Test Corner. End product to determine the acceptability of risk in conjunction to temperature testing without test corner as part of the power supply.
- End product to determine the acceptability of risk in conjunction to the Cleaning and Disinfection Methods as part of the power supply.
- End product to determine the acceptability of risk in conjunction to the Leakage of Liquids as part of the power supply.
- End product to determine the acceptability of risk in conjunction to the selection of components as it pertains to the intended use, essential performance, transport, storage conditions as part of the power supply.
- The end-product evaluation shall ensure that the requirements related to Accompanying Documents, Clause 7.9 are met.
- The risk management requirements of the standard were not addressed in this evaluation.
- The secondary circuit of this power supply has not been evaluated for patient connected applications.
- The accessibility of output connectors, insulating materials and temperatures shall be considered in the end use product.
- Completed fire, mechanical and electrical enclosure shall be provided in end product.
- Test of label related tests (Clause 7.1.2 and 7.1.3) shall be considered in end application.
- This power supply has not been evaluated for patient connected applications.
- Temperature of metal enclosure is 71.4 degree C shall be evaluated in end product.
- Overcurrent releases of adequate breaking capacity must be employed in the end product. 待確認
- The additional temperature measurement conditions according to sub-clause 11.1 were conducted as per client's request for reference only as below: - Model TPP100-112Azzzzzzzz, TPP100-115Azzzzzzzz, TPP100-118Azzzzzzzz, TPP100-124Azzzzzzzz, TPP100-128Azzzzzzzz, TPP100-136Azzzzzzzz, TPP100-148Azzzzzzzz, TPP100-112Uzzzzzzzz, TPP100-115Uzzzzzzzz, TPP100-118Uzzzzzzzz, TPP100-124Uzzzzzzzz, TPP100-128Uzzzzzzzz, TPP100-136Uzzzzzzzz, TPP100-148Uzzzzzzzz with full load 100W (without fan), maximum operating ambient temperature is 50 degree C for 100-230VAC; 60 degree C for 230-264VAC. - Model TPP100-112Dzzzzzzzz, TPP100-115Dzzzzzzzz, TPP100-118Dzzzzzzzz, TPP100-124Dzzzzzzzz, TPP100-128Dzzzzzzzz, TPP100-136Dzzzzzzzz, TPP100-148Dzzzzzzzz, TPP100-112zzzzzzzz, TPP100-115zzzzzzzz, TPP100-118zzzzzzzz, TPP100-124zzzzzzzz, TPP100-128zzzzzzzz, TPP100-136zzzzzzzz, TPP100-148zzzzzzzz with full load 100W (without fan), maximum operating ambient temperature is 55 degree C for 100-230VAC; 60 degree C for 230-264VAC. - Model TPP100-112Dzzzzzzzz, TPP100-115Dzzzzzzzz, TPP100-118Dzzzzzzzz, TPP100-124Dzzzzzzzz, TPP100-128Dzzzzzzzz, TPP100-136Dzzzzzzzz, TPP100-148Dzzzzzzzz, TPP100-112zzzzzzzz, TPP100-115zzzzzzzz, TPP100-118zzzzzzzz, TPP100-124zzzzzzzz, TPP100-128zzzzzzzz, TPP100-136zzzzzzzz, TPP100-148zzzzzzzz with de-rated

load 80W (without fan), maximum operating ambient temperature is 50 degree C for 90-100VAC; 60 degree C for 100-115VAC; 65 degree C for 115-264VAC. - Model TPP150-112Azzzzzzzz, TPP150-115Azzzzzzzz, TPP150-118Azzzzzzzz, TPP150-124Azzzzzzzz, TPP150-128Azzzzzzzz, TPP150-136Azzzzzzzz, TPP150-148Azzzzzzzz, TPP150-112Uzzzzzzzz, TPP150-115Uzzzzzzzz, TPP150-118Uzzzzzzzz, TPP150-124Uzzzzzzzz, TPP150-128Uzzzzzzzz, TPP150-136Uzzzzzzzz, TPP150-148Uzzzzzzzz, TPP150-112Dzzzzzzzz, TPP150-115Dzzzzzzzz, TPP150-118Dzzzzzzzz, TPP150-124Dzzzzzzzz, TPP150-128Dzzzzzzzz, TPP150-136Dzzzzzzzz, TPP150-148Dzzzzzzzz, TPP150-112zzzzzzzz, TPP150-115zzzzzzzz, TPP150-118zzzzzzzz, TPP150-124zzzzzzzz, TPP150-128zzzzzzzz, TPP150-136zzzzzzzz, TPP150-148zzzzzzzz with de-rated load 100W (without fan), maximum operating ambient temperature is 50 degree C for 90-100VAC; 55 degree C for 100-230VAC; 60 degree C for 230-264VAC. - Model , TPP150-112Azzzzzzzz, TPP150-115Azzzzzzzz, TPP150-118Azzzzzzzz, TPP150-124Azzzzzzzz, TPP150-128Azzzzzzzz, TPP150-136Azzzzzzzz, TPP150-148Azzzzzzzz, TPP150-112Uzzzzzzzz, TPP150-115Uzzzzzzzz, TPP150-118Uzzzzzzzz, TPP150-124Uzzzzzzzz, TPP150-128Uzzzzzzzz, TPP150-136Uzzzzzzzz, TPP150-148Uzzzzzzzz z with full load 150W (with fan), maximum operating ambient temperature is 75 degree C for 100-230VAC; 80 degree C for 230-264VAC. - Model TPP150-112Dzzzzzzzz, TPP150-115Dzzzzzzzz, TPP150-118Dzzzzzzzz, TPP150-124Dzzzzzzzz, TPP150-128Dzzzzzzzz, TPP150-136Dzzzzzzzz, TPP150-148Dzzzzzzzz, TPP150-112zzzzzzzz, TPP150-115zzzzzzzz, TPP150-118zzzzzzzz, TPP150-124zzzzzzzz, TPP150-128zzzzzzzz, TPP150-136zzzzzzzz, TPP150-148zzzzzzzz with full load 150W (with fan), maximum operating ambient temperature is 65 degree C for 90-115VAC; 70 degree C for 115-264VAC. - Model TPP150-112Dzzzzzzzz, TPP150-115Dzzzzzzzz, TPP150-118Dzzzzzzzz, TPP150-124Dzzzzzzzz, TPP150-128Dzzzzzzzz, TPP150-136Dzzzzzzzz, TPP150-148Dzzzzzzzz, TPP150-112zzzzzzzz, TPP150-115zzzzzzzz, TPP150-118zzzzzzzz, TPP150-124zzzzzzzz, TPP150-128zzzzzzzz, TPP150-136zzzzzzzz, TPP150-148zzzzzzzz with de-rated load 120W (without fan), maximum operating ambient temperature is 50 degree C for 115VAC; and with de-rated load 130W (without fan) is 50 degree C for 230VAC.

- The Power Supply tests should be considered as part of the end product evaluation and be tested accordingly to achieve certification of the end application or ME equipment defined Type B and BF Applied Part.
- Either one of four screws holes of PWB can be considered as PE connection and acceptability and Grounding Continuity Test and Earth Leakage Current Test shall be reevaluated in end product.
- The power supply was evaluated as 1 MOPP between Primary to metal enclosure and Secondary to metal enclosure (models with MUD, MED, MDD, MUF, MEF, MDF). Considerations shall be evaluated in the end application that 1 MOPP between the power supply enclosure and any accessible conductive parts.

Ratings:

Input: 100-240 V ac, 50/60 Hz, 2.0-0.9 A for models TPP150-112Azzzzzzzz, TPP150-115Azzzzzzzz, TPP150-118Azzzzzzzz, TPP150-124Azzzzzzzz, TPP150-128Azzzzzzzz, TPP150-136Azzzzzzzz, TPP150-148Azzzzzzzz, TPP150-112Uzzzzzzzz, TPP150-115Uzzzzzzzz, TPP150-118Uzzzzzzzz, TPP150-124Uzzzzzzzz, TPP150-128Uzzzzzzzz, TPP150-136Uzzzzzzzz, TPP150-148Uzzzzzzzz, TPP150-112Dzzzzzzzz, TPP150-115Dzzzzzzzz, TPP150-118Dzzzzzzzz, TPP150-124Dzzzzzzzz, TPP150-128Dzzzzzzzz, TPP150-136Dzzzzzzzz, TPP150-148Dzzzzzzzz, TPP150-112zzzzzzzz, TPP150-115zzzzzzzz, TPP150-118zzzzzzzz, TPP150-124zzzzzzzz, TPP150-128zzzzzzzz, TPP150-136zzzzzzzz, TPP150-148zzzzzzzz, TPP150-112Dzzzzzzzz, TPP150-115Dzzzzzzzz, TPP150-118Dzzzzzzzz, TPP150-124Dzzzzzzzz, TPP150-128Dzzzzzzzz, TPP150-136Dzzzzzzzz, TPP150-148Dzzzzzzzz, TPP150-112zzzzzzzz, TPP150-115zzzzzzzz, TPP150-118zzzzzzzz, TPP150-124zzzzzzzz, TPP150-128zzzzzzzz, TPP150-136zzzzzzzz, TPP150-148zzzzzzzz series; 100-240 V ac, 50/60 Hz, 1.6-0.6 A for models

TPP100-112Azzzzzzzz, TPP100-115Azzzzzzzz, TPP100-118Azzzzzzzz, TPP100-124Azzzzzzzz, TPP100-128Azzzzzzzz, TPP100-136Azzzzzzzz, TPP100-148Azzzzzzzz, TPP100-112Uzzzzzzzz, TPP100-115Uzzzzzzzz, TPP100-118Uzzzzzzzz, TPP100-124Uzzzzzzzz, TPP100-128Uzzzzzzzz, TPP100-136Uzzzzzzzz, TPP100-148Uzzzzzzzz, TPP100-112Dzzzzzzzz, TPP100-115Dzzzzzzzz, TPP100-118Dzzzzzzzz, TPP100-124Dzzzzzzzz, TPP100-128Dzzzzzzzz, TPP100-136Dzzzzzzzz, TPP100-148Dzzzzzzzz, TPP100-112zzzzzzzz, TPP100-115zzzzzzzz, TPP100-118zzzzzzzz, TPP100-124zzzzzzzz, TPP100-128zzzzzzzz, TPP100-136zzzzzzzz, TPP100-148zzzzzzzz, TPP100-112Dzzzzzzzz, TPP100-115Dzzzzzzzz, TPP100-118Dzzzzzzzz, TPP100-124Dzzzzzzzz, TPP100-128Dzzzzzzzz, TPP100-136Dzzzzzzzz, TPP100-148Dzzzzzzzz, TPP100-112zzzzzzzz, TPP100-115zzzzzzzz, TPP100-118zzzzzzzz, TPP100-124zzzzzzzz, TPP100-128zzzzzzzz, TPP100-136zzzzzzzz, TPP100-148zzzzzzzz series

Output:

For model TPP100-112Azzzzzzzz, TPP100-115Azzzzzzzz, TPP100-118Azzzzzzzz, TPP100-124Azzzzzzzz, TPP100-128Azzzzzzzz, TPP100-136Azzzzzzzz, TPP100-148Azzzzzzzz, TPP100-112Uzzzzzzzz, TPP100-115Uzzzzzzzz, TPP100-118Uzzzzzzzz, TPP100-124Uzzzzzzzz, TPP100-128Uzzzzzzzz, TPP100-136Uzzzzzzzz, TPP100-148Uzzzzzzzz, TPP100-112Dzzzzzzzz, TPP100-115Dzzzzzzzz, TPP100-118Dzzzzzzzz, TPP100-124Dzzzzzzzz, TPP100-128Dzzzzzzzz, TPP100-136Dzzzzzzzz, TPP100-148Dzzzzzzzz, TPP100-112zzzzzzzz, TPP100-115zzzzzzzz, TPP100-118zzzzzzzz, TPP100-124zzzzzzzz, TPP100-128zzzzzzzz, TPP100-136zzzzzzzz, TPP100-148zzzzzzzz, TPP100-112Dzzzzzzzz, TPP100-115Dzzzzzzzz, TPP100-118Dzzzzzzzz, TPP100-124Dzzzzzzzz, TPP100-128Dzzzzzzzz, TPP100-136Dzzzzzzzz, TPP100-148Dzzzzzzzz, TPP100-112zzzzzzzz, TPP100-115zzzzzzzz, TPP100-118zzzzzzzz, TPP100-124zzzzzzzz, TPP100-128zzzzzzzz, TPP100-136zzzzzzzz, TPP100-148zzzzzzzz is with full load 100W (with fan) and with derated load 80W (without fan); for model TPP150-112Azzzzzzzz, TPP150-115Azzzzzzzz, TPP150-118Azzzzzzzz, TPP150-124Azzzzzzzz, TPP150-128Azzzzzzzz, TPP150-136Azzzzzzzz, TPP150-148Azzzzzzzz, TPP150-112Uzzzzzzzz, TPP150-115Uzzzzzzzz, TPP150-118Uzzzzzzzz, TPP150-124Uzzzzzzzz, TPP150-128Uzzzzzzzz, TPP150-136Uzzzzzzzz, TPP150-148Uzzzzzzzz, TPP150-112Dzzzzzzzz, TPP150-115Dzzzzzzzz, TPP150-118Dzzzzzzzz, TPP150-124Dzzzzzzzz, TPP150-128Dzzzzzzzz, TPP150-136Dzzzzzzzz, TPP150-148Dzzzzzzzz, TPP150-112zzzzzzzz, TPP150-115zzzzzzzz, TPP150-118zzzzzzzz, TPP150-124zzzzzzzz, TPP150-128zzzzzzzz, TPP150-136zzzzzzzz, TPP150-148zzzzzzzz is with full load 150W (with fan) and with derated load 80W (without fan).

Model Name	Output Voltage	Output Current	Output Power
TPP100-112Azzzzzzzz	12 VDC	8.34A	100W max.
TPP100-115Azzzzzzzz	15 VDC	6.67A	100W max.
TPP100-118Azzzzzzzz	18 VDC	5.56A	100W max.
TPP100-124Azzzzzzzz	24 VDC	4.17A	100W max.
TPP100-128Azzzzzzzz	28 VDC	3.58A	100W max.
TPP100-136Azzzzzzzz	36 VDC	2.78A	100W max.
TPP100-148Azzzzzzzz	48 VDC	2.09A	100W max.
TPP100-112Uzzzzzzzz	12 VDC	8.34A	100W max.
TPP100-115Uzzzzzzzz	15 VDC	6.67A	100W max.
TPP100-118Uzzzzzzzz	18 VDC	5.56A	100W max.
TPP100-124Uzzzzzzzz	24 VDC	4.17A	100W max.
TPP100-128Uzzzzzzzz	28 VDC	3.58A	100W max.
TPP100-136Uzzzzzzzz	36 VDC	2.78A	100W max.
TPP100-148Uzzzzzzzz	48 VDC	2.09A	100W max.
TPP100-112Dzzzzzzzz, TPP100-112zzzzzzzz	12 VDC	8.34A	100W max.
TPP100-115Dzzzzzzzz, TPP100-115zzzzzzzz	15 VDC	6.67A	100W max.

TPP100-118Dzzzzzzzz, TPP100-118zzzzzzzz	18 VDC	5.56A	100W max.
TPP100-124Dzzzzzzzz, TPP100-124zzzzzzzz	24 VDC	4.17A	100W max.
TPP100-128Dzzzzzzzz, TPP100-128zzzzzzzz	8 VDC	3.58A	100W max.
TPP100-136Dzzzzzzzz, TPP100-136zzzzzzzz	36 VDC	2.78A	100W max.
TPP100-148Dzzzzzzzz, TPP100-148zzzzzzzz	48 VDC	2.09A	100W max.
TPP150-112Azzzzzzzz	12 VDC	12.50A	150W max.
TPP150-115Azzzzzzzz	15 VDC	10.00A	150W max.
TPP150-118Azzzzzzzz	18 VDC	8.34A	150W max.
TPP150-124Azzzzzzzz	24 VDC	6.25A	150W max.
TPP150-128Azzzzzzzz	28 VDC	5.36A	150W max.
TPP150-136Azzzzzzzz	36 VDC	4.17A	150W max.
TPP150-148Azzzzzzzz	48 VDC	3.13A	150W max.
TPP150-112Uzzzzzzzz	12 VDC	12.50A	150W max.
TPP150-115Uzzzzzzzz	15 VDC	10.00A	150W max.
TPP150-118Uzzzzzzzz	18 VDC	8.34A	150W max.
TPP150-124Uzzzzzzzz	24 VDC	6.25A	150W max.
TPP150-128Uzzzzzzzz	28 VDC	5.36A	150W max.
TPP150-136Uzzzzzzzz	36 VDC	4.17A	150W max.
TPP150-148Uzzzzzzzz	48 VDC	3.13A	150W max.
TPP150-112Dzzzzzzzz, TPP150-112zzzzzzzz	12 VDC	12.50A	150W max.
TPP150-115Dzzzzzzzz, TPP150-115zzzzzzzz	15 VDC	10.00A	150W max.
TPP150-118Dzzzzzzzz, TPP150-118zzzzzzzz	18 VDC	8.34A	150W max.
TPP150-124Dzzzzzzzz, TPP150-124zzzzzzzz	24 VDC	6.25A	150W max.
TPP150-128Dzzzzzzzz, TPP150-128zzzzzzzz	28 VDC	5.36A	150W max.
TPP150-136Dzzzzzzzz, TPP150-136zzzzzzzz	36 VDC	4.17A	150W max.
TPP150-148Dzzzzzzzz, TPP150-148zzzzzzzz	48 VDC	3.13A	150W max.

Nomenclature: N/A