



Certificate Number: 091215D1-UL

Date: 2016-09-09

UL CONDITIONS OF ACCEPTABILITY

Company Name: TRACO ELECTRONIC AG

File-CCN: E188913 - QQHM2, QQHM8

Product Description: POWER SUPPLIES, MEDICAL AND DENTAL - COMPONENT

Models: TPP 40-105Azzzzzzzz, TPP 40-107Azzzzzzzz, TPP 40-109Azzzzzzzz, TPP 40-112Azzzzzzzz, TPP 40-1L12Azzzzzzzz, TPP 40-115Azzzzzzzz, TPP 40-1L15Azzzzzzzz, TPP 40-124Azzzzzzzz, TPP 40-128Azzzzzzzz, TPP 40-136Azzzzzzzz, TPP 40-148Azzzzzzzz, TPP 40-153Azzzzzzzz, TPP 40-105Uzzzzzzzz, TPP 40-107Uzzzzzzzz, TPP 40-109Uzzzzzzzz, TPP 40-112Uzzzzzzzz, TPP 40-1L12Uzzzzzzzz, TPP 40-115Uzzzzzzzz, TPP 40-1L15Uzzzzzzzz, TPP 40-124Uzzzzzzzz, TPP 40-128Uzzzzzzzz, TPP 40-136Uzzzzzzzz, TPP 40-148Uzzzzzzzz, TPP 40-153Uzzzzzzzz, TPP 40-105zzzzzzzz, TPP 40-107zzzzzzzz, TPP 40-109zzzzzzzz, TPP 40-112zzzzzzzz, TPP 40-1L12zzzzzzzz, TPP 40-115zzzzzzzz, TPP 40-1L15zzzzzzzz, TPP 40-124zzzzzzzz, TPP 40-128zzzzzzzz, TPP 40-136zzzzzzzz, TPP 40-148zzzzzzzz, TPP 40-153zzzzzzzz, TPP 40-105Dzzzzzzzz, TPP 40-107Dzzzzzzzz, TPP 40-109Dzzzzzzzz, TPP 40-112Dzzzzzzzz, TPP 40-1L12Dzzzzzzzz, TPP 40-115Dzzzzzzzz, TPP 40-1L15Dzzzzzzzz, TPP 40-124Dzzzzzzzz, TPP 40-128Dzzzzzzzz, TPP 40-136Dzzzzzzzz, TPP 40-148Dzzzzzzzz, TPP 40-153Dzzzzzzzz, TPP 65-105Azzzzzzzz, TPP 65-107Azzzzzzzz, TPP 65-109Azzzzzzzz, TPP 65-112Azzzzzzzz, TPP 65-115Azzzzzzzz, TPP 65-124Azzzzzzzz, TPP 65-1L24Azzzzzzzz, TPP 65-128Azzzzzzzz, TPP 65-1L28Azzzzzzzz, TPP 65-136Azzzzzzzz, TPP 65-148Azzzzzzzz, TPP 65-153Azzzzzzzz, TPP 65-105zzzzzzzz, TPP 65-107zzzzzzzz, TPP 65-109zzzzzzzz, TPP 65-112zzzzzzzz, TPP 65-115zzzzzzzz, TPP 65-124zzzzzzzz, TPP 65-1L24zzzzzzzz, TPP 65-128zzzzzzzz, TPP 65-1L28zzzzzzzz, TPP 65-136zzzzzzzz, TPP 65-148zzzzzzzz, TPP 65-153zzzzzzzz, TPP 65-105Uzzzzzzzz, TPP 65-107Uzzzzzzzz, TPP 65-109Uzzzzzzzz, TPP 65-112Uzzzzzzzz, TPP 65-115Uzzzzzzzz, TPP 65-124Uzzzzzzzz, TPP 65-1L24Uzzzzzzzz, TPP 65-128Uzzzzzzzz, TPP 65-1L28Uzzzzzzzz, TPP 65-136Uzzzzzzzz, TPP 65-148Uzzzzzzzz, TPP 65-153Uzzzzzzzz, TPP 65-105Dzzzzzzzz, TPP 65-107Dzzzzzzzz, TPP 65-109Dzzzzzzzz, TPP 65-112Dzzzzzzzz, TPP 65-115Dzzzzzzzz, TPP 65-124Dzzzzzzzz, TPP 65-1L24Dzzzzzzzz, TPP 65-128Dzzzzzzzz, TPP 65-1L28Dzzzzzzzz, TPP 65-136Dzzzzzzzz, TPP 65-148Dzzzzzzzz, TPP 65-153Dzzzzzzzz, TPP 40-210Azzzzzzzz, TPP 40-221Azzzzzzzz, TPP 40-220Azzzzzzzz, TPP 40-231Azzzzzzzz, TPP 40-251Azzzzzzzz, TPP 40-210zzzzzzzz, TPP 40-221zzzzzzzz, TPP 40-220zzzzzzzz, TPP 40-231zzzzzzzz, TPP 40-251zzzzzzzz, TPP 40-210Uzzzzzzzz, TPP 40-221Uzzzzzzzz, TPP 40-220Uzzzzzzzz, TPP 40-231Uzzzzzzzz, TPP 40-251Uzzzzzzzz, TPP 40-210Dzzzzzzzz, TPP 40-221Dzzzzzzzz, TPP 40-220Dzzzzzzzz, TPP 40-231Dzzzzzzzz, TPP 40-251Dzzzzzzzz, TPP 40-310M1Azzzzzzzz, TPP 40-3102Azzzzzzzz, TPP 40-310M2Azzzzzzzz, TPP 40-321M1Azzzzzzzz, TPP 40-321M2Azzzzzzzz, TPP 40-

3201Azzzzzzzz, TPP 40-320M2Azzzzzzzz, TPP 40-331M3Azzzzzzzz, TPP 40-3512Azzzzzzzz, TPP 40-351M2Azzzzzzzz, TPP 40-310M1zzzzzzzz, TPP 40-3102zzzzzzzz, TPP 40-310M2zzzzzzzz, TPP 40-321M1zzzzzzzz, TPP 40-321M2zzzzzzzz, TPP 40-3201zzzzzzzz, TPP 40-320M2zzzzzzzz, TPP 40-331M3zzzzzzzz, TPP 40-3512zzzzzzzz, TPP 40-351M2zzzzzzzz, TPP 40-310M1Uzzzzzzzz, TPP 40-3102Uzzzzzzzz, TPP 40-310M2Uzzzzzzzz, TPP 40-321M1Uzzzzzzzz, TPP 40-321M2Uzzzzzzzz, TPP 40-3201Uzzzzzzzz, TPP 40-320M2Uzzzzzzzz, TPP 40-331M3Uzzzzzzzz, TPP 40-3512Uzzzzzzzz, TPP 40-351M2Uzzzzzzzz, TPP 40-310M1Dzzzzzzzz, TPP 40-3102Dzzzzzzzz, TPP 40-310M2Dzzzzzzzz, TPP 40-321M1Dzzzzzzzz, TPP 40-321M2Dzzzzzzzz, TPP 40-3201Dzzzzzzzz, TPP 40-320M2Dzzzzzzzz, TPP 40-331M3Dzzzzzzzz, TPP 40-3512Dzzzzzzzz, TPP 40-351M2Dzzzzzzzz, TPP 65-210Azzzzzzzz, TPP 65-221Azzzzzzzz, TPP 65-220Azzzzzzzz, TPP 65-231Azzzzzzzz, TPP 65-251Azzzzzzzz, TPP 65-210Uzzzzzzzz, TPP 65-221Uzzzzzzzz, TPP 65-220Uzzzzzzzz, TPP 65-231Uzzzzzzzz, TPP 65-251Uzzzzzzzz, TPP 65-210zzzzzzzz, TPP 65-221zzzzzzzz, TPP 65-220zzzzzzzz, TPP 65-231zzzzzzzz, TPP 65-251zzzzzzzz, TPP 65-210Dzzzzzzzz, TPP 65-221Dzzzzzzzz, TPP 65-220Dzzzzzzzz, TPP 65-231Dzzzzzzzz, TPP 65-251Dzzzzzzzz, TPP 65-310M1Azzzzzzzz, TPP 65-3102Azzzzzzzz, TPP 65-310M2Azzzzzzzz, TPP 65-321M1Azzzzzzzz, TPP 65-321M2Azzzzzzzz, TPP 65-3201Azzzzzzzz, TPP 65-320M2Azzzzzzzz, TPP 65-331M3Azzzzzzzz, TPP 65-3512Azzzzzzzz, TPP 65-351M2Azzzzzzzz, TPP 65-310M1zzzzzzzz, TPP 65-3102zzzzzzzz, TPP 65-310M2zzzzzzzz, TPP 65-321M1zzzzzzzz, TPP 65-321M2zzzzzzzz, TPP 65-3201zzzzzzzz, TPP 65-320M2zzzzzzzz, TPP 65-331M3zzzzzzzz, TPP 65-3512zzzzzzzz, TPP 65-351M2zzzzzzzz, TPP 65-310M1Uzzzzzzzz, TPP 65-3102Uzzzzzzzz, TPP 65-310M2Uzzzzzzzz, TPP 65-321M1Uzzzzzzzz, TPP 65-321M2Uzzzzzzzz, TPP 65-3201Uzzzzzzzz, TPP 65-320M2Uzzzzzzzz, TPP 65-331M3Uzzzzzzzz, TPP 65-3512Uzzzzzzzz, TPP 65-351M2Uzzzzzzzz, TPP 65-310M1Dzzzzzzzz, TPP 65-3102Dzzzzzzzz, TPP 65-310M2Dzzzzzzzz, TPP 65-321M1Dzzzzzzzz, TPP 65-321M2Dzzzzzzzz, TPP 65-3201Dzzzzzzzz, TPP 65-320M2Dzzzzzzzz, TPP 65-331M3Dzzzzzzzz, TPP 65-3512Dzzzzzzzz, TPP 65-351M2Dzzzzzzzz,

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

This equipment has been judged on the basis of the required Creepage and Clearance according to Clause 8.9 in the ANSI/AAMI ES60601-1 (2005/(R)2012 + A1:2012, C1:2009/(R)2012 + A2:2010/(R)2012), CAN/CSA-C22.2 No. 60601-1:14 that cover the end application for which the component was designed.

This equipment 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 this equipment is intended for use in other than Class II equipment. This equipment is a Built-in power supply, a suitable Electrical, Mechanical or Fire enclosure must be provided as part of the end application.

Considerations to the applied part requirements shall be evaluated in the end application.

The output circuits have not been evaluated for direct patient connection (Type B, BF or CF). For end application intend to connect the output circuit to Applied Parts, suitable evaluation of the separation, leakage current, dielectric voltage withstand, and related requirements shall be conducted.

This equipment was tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary.

Considerations shall be given to measure the temperatures on power electronic components and transformer windings when this equipment is installed in the end application. The end application shall ensure that this equipment is used within its ratings. Transformer TX1 is rated Class B (130 °C).

This equipment provides the following MOPP (means of patient protection): 2 MOPP based upon a working voltage 258 Vrms, 680 Vpk (For TX1, Core is considered as Secondary), 1 MOPP based upon a working voltage 250 Vrms, 354 Vpk between Primary to Metal enclosure (Floating) and 1 MOPP based upon a working voltage 250 Vrms, 354 Vpk between Secondary to Metal enclosure (Floating). See insulation diagram for details.

Temperature, Leakage Current, Dielectric Voltage Withstand, and Interruption of the Power Supply tests shall be considered as part of the end application evaluation.

Test corner shall be evaluated in the end application.

The end application evaluation shall ensure that the requirements related to Accompanying Documents are met.

The end application evaluation shall ensure that the requirements related to ME EQUIPMENT shall be marked with a serial number or lot or batch identifier; and the date of manufacture or use by date are met.

Additional Temperature Test conditions were conducted per manufacturer's request for reference only and were listed below:

- Model series TPP 65-1 tested with full output load, Maximum operation ambient temperature is 55 degree C under 100Vac, 60Hz input condition; 65 degree C under 115Vac, 60Hz, 230Vac, 60Hz and 264Vac, 60Hz input conditions.
- Model series TPP 40-1 tested with full output load, Maximum operation ambient temperature is 75 degree C under 100Vac, 60Hz, 115Vac, 60Hz, 230Vac, 60Hz and 264Vac, 60Hz input conditions.
- Model series TPP 65-2 tested with full output load, Maximum operation ambient temperature is 45 degree C under 100Vac, 60Hz input condition; 50 degree C under 115Vac, 60Hz input condition; 60 degree C under 230Vac, 60Hz and 264Vac, 60Hz input conditions.
- Model series TPP 40-2 tested with full output load, Maximum operation ambient temperature is 65 degree C under 100Vac, 60Hz, 115Vac, 60Hz and 230Vac, 60Hz input conditions; 70 degree C under 264Vac, 60Hz input condition.
- Model series TPP 65-3 tested with full output load, Maximum operation ambient temperature is 50 degree C under 100Vac, 60Hz input condition; 55 degree C under 115Vac, 60Hz input condition; 60 degree C under 230Vac, 60Hz and 264Vac, 60Hz input conditions.
- Model series TPP 40-3 tested with full output load, Maximum operation ambient temperature is 70 degree C under 100Vac, 60Hz, 115Vac, 60Hz, 230Vac, 60Hz and 264Vac, 60Hz input conditions.

Touch current of Leakage Current Test between Output connector and earth compliance with the limitation for TYPE BF APPLIED PART (a.c.).

Ratings: Input rating:

For model series TPP 40-1: 100-240Vac, 50/60Hz, 1.0-0.5A;

For model series TPP 65-1: 100-240Vac, 50/60Hz, 1.6-0.9A;

For model series TPP 40-2 and TPP 40-3 ,: 100-240Vac, 50/60Hz, 1.05-0.55A;

For model series TPP 65-2 and TPP 65-3 X65UDA(V2)B(XX)zzzzzzzz,: 100-240Vac, 50/60Hz, 1.65-0.95A