



Certificate Number: 091317D1-D1007

Date: 2017-11-14

## UL CONDITIONS OF ACCEPTABILITY

**Company Name:** TRACO ELECTRONIC AG

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

### Product Description:

**Model:** THM 15-2411Wlzzzzzzzz, THM 15-2412Wlzzzzzzzz, THM 15-2413Wlzzzzzzzz, THM 15-2415Wlzzzzzzzz, THM 15-2421Wlzzzzzzzz, THM 15-2422Wlzzzzzzzz, THM 15-2423Wlzzzzzzzz, THM 15-4811Wlzzzzzzzz, THM 15-4812Wlzzzzzzzz, THM 15-4813Wlzzzzzzzz, THM 15-4815Wlzzzzzzzz, THM 15-4821Wlzzzzzzzz, THM 15-4822Wlzzzzzzzz, THM 15-4823Wlzzzzzzzz, THM 20-2411Wlzzzzzzzz, THM 20-2412Wlzzzzzzzz, THM 20-2413Wlzzzzzzzz, THM 20-2415Wlzzzzzzzz, THM 20-2421Wlzzzzzzzz, THM 20-2422Wlzzzzzzzz, THM 20-2423Wlzzzzzzzz, THM 20-4811Wlzzzzzzzz, THM 20-4812Wlzzzzzzzz, THM 20-4813Wlzzzzzzzz, THM 20-4815Wlzzzzzzzz, THM 20-4821Wlzzzzzzzz, THM 20-4822Wlzzzzzzzz, THM 20-4823Wlzzzzzzzz, THM 30-2411Wlzzzzzzzz, THM 30-2412Wlzzzzzzzz, THM 30-2413Wlzzzzzzzz, THM 30-2415Wlzzzzzzzz, THM 30-2421Wlzzzzzzzz, THM 30-2422Wlzzzzzzzz, THM 30-2423Wlzzzzzzzz, THM 30-4811Wlzzzzzzzz, THM 30-4812Wlzzzzzzzz, THM 30-4813Wlzzzzzzzz, THM 30-4815Wlzzzzzzzz, THM 30-4821Wlzzzzzzzz, THM 30-4822Wlzzzzzzzz, THM 30-4823Wlzzzzzzzz, THM 15-1211zzzzzzzz, THM 15-1212zzzzzzzz, THM 15-1213zzzzzzzz, THM 15-1215zzzzzzzz, THM 15-1221zzzzzzzz, THM 15-1222zzzzzzzz, THM 15-1223zzzzzzzz, THM 15-2411zzzzzzzz, THM 15-2412zzzzzzzz, THM 15-2413zzzzzzzz, THM 15-2415zzzzzzzz, THM 15-2421zzzzzzzz, THM 15-2422zzzzzzzz, THM 15-2423zzzzzzzz, THM 15-4811zzzzzzzz, THM 15-4812zzzzzzzz, THM 15-4813zzzzzzzz, THM 15-4815zzzzzzzz, THM 15-4821zzzzzzzz, THM 15-4822zzzzzzzz, THM 15-4823zzzzzzzz, THM 20-1211zzzzzzzz, THM 20-1212zzzzzzzz, THM 20-1213zzzzzzzz, THM 20-1215zzzzzzzz, THM 20-1221zzzzzzzz, THM 20-1222zzzzzzzz, THM 20-1223zzzzzzzz, THM 20-2411zzzzzzzz, THM 20-2412zzzzzzzz, THM 20-2413zzzzzzzz, THM 20-2415zzzzzzzz, THM 20-2421zzzzzzzz, THM 20-2422zzzzzzzz, THM 20-2423zzzzzzzz, THM 20-4811zzzzzzzz, THM 20-4812zzzzzzzz, THM 20-4813zzzzzzzz, THM 20-4815zzzzzzzz, THM 20-4822zzzzzzzz, THM 20-4823zzzzzzzz, THM 30-1211zzzzzzzz, THM 30-1212zzzzzzzz, THM 30-1213zzzzzzzz, THM 30-1215zzzzzzzz, THM 30-1221zzzzzzzz, THM 30-1222zzzzzzzz, THM 30-1223zzzzzzzz, THM 30-2411zzzzzzzz, THM 30-2412zzzzzzzz, THM 30-2413zzzzzzzz, THM 30-2415zzzzzzzz, THM 30-2421zzzzzzzz, THM 30-2422zzzzzzzz, THM 30-2423zzzzzzzz, THM 30-4811zzzzzzzz, THM 30-4812zzzzzzzz, THM 30-4813zzzzzzzz, THM 30-4815zzzzzzzz, THM 30-4821zzzzzzzz, THM 30-4822zzzzzzzz, THM 30-4823zzzzzzzz.

**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 Amd1, Sub clause 8.9, CAN/CSA-C22.2 No. 60601-1: 2014 (includes National Differences for Canada).
- The power supply was evaluated to provide MOPP based upon mains voltage of 250Vrms and 354Vpk as followings: 2MOPP between DC IN to DC OUT of transformer, and 2 MOPP between DC OUT to Core of transformer. 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 within the end-use equipment.
- The secondary output circuits are at non-hazardous energy levels.
- The output circuits have not been evaluated for direct patient connection (either is Type B, BF or CF).
- This device is operated up to 5000m above sea level / Pollution Degree 2 / Overvoltage Category II as declared by manufacturer.
- The input and output connectors are not acceptable for field connection; they are only intended for connection to mating connectors inside the end-use product.
- The component shall be installed in compliance with the enclosure, mounting, marking, spacing, and separation requirements of the end-use application.
- The housing of the device was not evaluated to comply with Mechanical, Fire, Electrical requirements. A suitable Mechanical, Fire and Electrical enclosure shall be provided in the end product.
- The end-product evaluation shall ensure that the requirements related to Accompanying Documents, Clause 7.9 are met.
- These units have been evaluated with the following external fuse type under single fault conditions: CONQUER ELECTRONICS CO LTD / UDE, UDE-4, see Enclosure "Miscellaneous - (02)" for current rating description.
- The potting compound is not used for isolation, therefore no cycling test is required.
- This power supply output has not been evaluated for patient connected applications.
- 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 F, 155 degree C insulation system.
- Mains voltage shall be purposely reduced to DC input voltage as noted in the Device Ratings, while used to connect AC Mains circuits.
- Per customer's request, some models were conducted with de-rating operation mode with higher ambient limitations in Temperature tests (11.1.1) for reference only, which shall be considered in end application. See Enclosure "Miscellaneous - (03) Model difference" for details.

## Ratings:

Input voltage for models:

9-18 Vdc; 9-36 Vdc; 18-36 Vdc; 18-75 Vdc; 36-75 Vdc

Output voltage / current for all series:

For output 15 VA (THM 15 Series) model:

5 Vdc / 3000 mA

12 Vdc / 1250 mA

15 Vdc / 1000 mA

24 Vdc / 625 mA

±5 Vdc / ± 1500 mA

± 12 Vdc / ± 625 mA

± 15 Vdc / ± 500 mA

For output 20 VA (THM 20 Series) model:

5 Vdc / 4000 mA

12 Vdc / 1670 mA

15 Vdc / 1330 mA

24 Vdc / 833 mA

±5 Vdc / ± 2000 mA

± 12 Vdc / ± 833 mA

± 15 Vdc / ± 667 mA



For output 30 VA (THM 30 Series) model:

5 Vdc / 6000 mA  
12 Vdc / 2500 mA  
15 Vdc / 2000 mA  
24 Vdc / 1250 mA  
 $\pm 5$  Vdc /  $\pm 3000$  mA  
 $\pm 12$  Vdc /  $\pm 1250$  mA  
 $\pm 15$  Vdc /  $\pm 1000$  mA

**Nomenclature:** N/A