



Certificate Number: 20171023D1-D1011

Date: 2018-01-16

## UL CONDITIONS OF ACCEPTABILITY

**Company Name:** TRACO ELECTRONIC AG

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

**Product Description:** Switching Power Supply

**Models:** TIM 2-0910zzzzzzzz, TIM 2-0911zzzzzzzz, TIM 2-0919zzzzzzzz, TIM 2-0912zzzzzzzz, TIM 2-0913zzzzzzzz, TIM 2-0915zzzzzzzz, TIM 2-0922zzzzzzzz, TIM 2-0923zzzzzzzz, TIM 2-1210zzzzzzzz, TIM 2-1211zzzzzzzz, TIM 2-1219zzzzzzzz, TIM 2-1212zzzzzzzz, TIM 2-1213zzzzzzzz, TIM 2-1215zzzzzzzz, TIM 2-1222zzzzzzzz, TIM 2-1223zzzzzzzz, TIM 2-2410zzzzzzzz, TIM 2-2411zzzzzzzz, TIM 2-2419zzzzzzzz, TIM 2-2412zzzzzzzz, TIM 2-2413zzzzzzzz, TIM 2-2415zzzzzzzz, TIM 2-2422zzzzzzzz, TIM 2-2423zzzzzzzz, TIM 2-4810zzzzzzzz, TIM 2-4811zzzzzzzz, TIM 2-4819zzzzzzzz, TIM 2-4812zzzzzzzz, TIM 2-4813zzzzzzzz, TIM 2-4815zzzzzzzz, TIM 2-4822zzzzzzzz, TIM 2-4823zzzzzzzz, TIM 2-0910SMzzzzzzzz, TIM 2-0911SMzzzzzzzz, TIM 2-0919SMzzzzzzzz, TIM 2-0912SMzzzzzzzz, TIM 2-0913SMzzzzzzzz, TIM 2-0915SMzzzzzzzz, TIM 2-0922SMzzzzzzzz, TIM 2-0923SMzzzzzzzz, TIM 2-1210SMzzzzzzzz, TIM 2-1211SMzzzzzzzz, TIM 2-1219SMzzzzzzzz, TIM 2-1212SMzzzzzzzz, TIM 2-1213SMzzzzzzzz, TIM 2-1215SMzzzzzzzz, TIM 2-1222SMzzzzzzzz, TIM 2-1223SMzzzzzzzz, TIM 2-2410SMzzzzzzzz, TIM 2-2411SMzzzzzzzz, TIM 2-2419SMzzzzzzzz, TIM 2-2412SMzzzzzzzz, TIM 2-2413SMzzzzzzzz, TIM 2-2415SMzzzzzzzz, TIM 2-2422SMzzzzzzzz, TIM 2-2423SMzzzzzzzz, TIM 2-4810SMzzzzzzzz, TIM 2-4811SMzzzzzzzz, TIM 2-4819SMzzzzzzzz, TIM 2-4812SMzzzzzzzz, TIM 2-4813SMzzzzzzzz, TIM 2-4815SMzzzzzzzz, TIM 2-4822SMzzzzzzzz, TIM 2-4823SMzzzzzzzz, TIM 3.5-0911zzzzzzzz, TIM 3.5-0919zzzzzzzz, TIM 3.5-0912zzzzzzzz, TIM 3.5-0913zzzzzzzz, TIM 3.5-0915zzzzzzzz, TIM 3.5-0922zzzzzzzz, TIM 3.5-0923zzzzzzzz, TIM 3.5-1211zzzzzzzz, TIM 3.5-1219zzzzzzzz, TIM 3.5-1212zzzzzzzz, TIM 3.5-1213zzzzzzzz, TIM 3.5-1215zzzzzzzz, TIM 3.5-1222zzzzzzzz, TIM 3.5-1223zzzzzzzz, TIM 3.5-2411zzzzzzzz, TIM 3.5-2419zzzzzzzz, TIM 3.5-2412zzzzzzzz, TIM 3.5-2413zzzzzzzz, TIM 3.5-2415zzzzzzzz, TIM 3.5-2422zzzzzzzz, TIM 3.5-2423zzzzzzzz, TIM 3.5-4811zzzzzzzz, TIM 3.5-4819zzzzzzzz, TIM 3.5-4812zzzzzzzz, TIM 3.5-4813zzzzzzzz, TIM 3.5-4815zzzzzzzz, TIM 3.5-4822zzzzzzzz, TIM 3.5-4823zzzzzzzz, TIM 3.5-0911SMzzzzzzzz, TIM 3.5-0919SMzzzzzzzz, TIM 3.5-0912SMzzzzzzzz, TIM 3.5-0913SMzzzzzzzz, TIM 3.5-0915SMzzzzzzzz, TIM 3.5-0922SMzzzzzzzz, TIM 3.5-0923SMzzzzzzzz, TIM 3.5-1211SMzzzzzzzz, TIM 3.5-1219SMzzzzzzzz, TIM 3.5-1212SMzzzzzzzz, TIM 3.5-1213SMzzzzzzzz, TIM 3.5-1215SMzzzzzzzz, TIM 3.5-1222SMzzzzzzzz, TIM 3.5-1223SMzzzzzzzz, TIM 3.5-2411SMzzzzzzzz, TIM 3.5-2419SMzzzzzzzz, TIM 3.5-2412SMzzzzzzzz, TIM 3.5-2413SMzzzzzzzz, TIM 3.5-2415SMzzzzzzzz, TIM 3.5-2422SMzzzzzzzz, TIM 3.5-2423SMzzzzzzzz, TIM 3.5-4811SMzzzzzzzz, TIM 3.5-4819SMzzzzzzzz, TIM 3.5-4812SMzzzzzzzz, TIM 3.5-4813SMzzzzzzzz, TIM 3.5-4815SMzzzzzzzz, TIM 3.5-4822SMzzzzzzzz, TIM 3.5-4823SMzzzzzzzz.

## 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 and DC OUT of transformer, and 2 MOPP between Core of transformer and DC OUT. The "floating" shown in T1 spec. was per manufacturer's request for distinguishment purpose, and was considered as primary part (T1 pin 4) in construction review. 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.

Risk Management Process shall include considerations of requirements specific to the Power Supply in the end application.

These units have been evaluated with the following external fuse type under single fault conditions:

CONQUER ELECTRONICS CO LTD / UBM-A, see Enclosure "Miscellaneous - (02)" for fuse current rating description.

The potting compound is not used for isolation, therefore no cycling test is required.

## Ratings:

Input voltage

4.5-12 Vdc

9-18 Vdc

18-36 Vdc

36-75 Vdc

Output voltage / current for TIM 2 models:

- 3.3 Vdc / 600 mA

- 5 Vdc / 400 mA

- 9 Vdc / 222 mA

- 12 Vdc / 167 mA

- 15 Vdc / 134 mA

- 24 Vdc / 83 mA

-  $\pm 12$  Vdc /  $\pm 83$  mA

-  $\pm 15$  Vdc /  $\pm 67$  mA

**Ratings:**

Output voltage / current for TIM 3.5 models:

- 5 Vdc / 700 mA
- 9 Vdc / 389 mA
- 12 Vdc / 292 mA
- 15 Vdc / 234 mA
- 24 Vdc / 146 mA
- $\pm 12$  Vdc /  $\pm 146$  mA
- $\pm 15$  Vdc /  $\pm 117$  mA

**Nomenclature:** Where "z" can be any alphanumeric or dash or blank for marketing purpose only.