

Certificate Number: 071420X3-A6012

Date: 2023-06-21

## UL CONDITIONS OF ACCEPTABILITY

**Company Name:** TRACO ELECTRONIC AG

**File-CCN:** QQJQ2, QQJQ8

**Product Description:** POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT – COMPONENT

**Models:** TRV 1-0510Maaaaaa, TRV 1-0511Maaaaaa, TRV 1-0512Maaaaaa, TRV 1-0513Maaaaaa, TRV 1-0521Maaaaaa, TRV 1-0522Maaaaaa, TRV 1-0523Maaaaaa, TRV 1-1210Maaaaaa, TRV 1-1211Maaaaaa, TRV 1-1212Maaaaaa, TRV 1-1213Maaaaaa, TRV 1-1221Maaaaaa, TRV 1-1222Maaaaaa, TRV 1-1223Maaaaaa, TRV 1-1510Maaaaaa, TRV 1-1511Maaaaaa, TRV 1-1512Maaaaaa, TRV 1-1513Maaaaaa, TRV 1-1521Maaaaaa, TRV 1-1522Maaaaaa, TRV 1-1523Maaaaaa, TRV 1-2410Maaaaaa, TRV 1-2411Maaaaaa, TRV 1-2412Maaaaaa, TRV 1-2413Maaaaaa, TRV 1-2421Maaaaaa, TRV 1-2422Maaaaaa, TRV 1-2423Maaaaaa

**Conditions Of Acceptability:** For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The following product-line tests are conducted for this product : Electric Strength
- The following output circuits are at ES1 energy levels : Output
- The following output circuits are at PS3 energy levels : Output
- The terminals of the DC to DC Converter are only suitable for factory wiring only.
- The need for suitable electrical enclosure (for ES safeguard), fire enclosure (for PS safeguard), and safeguard for thermal burn injury (for TS safeguard) is to be evaluated and provided (if necessary) in the end-product.
- The DC to DC Converter was evaluated for Double/Reinforced Insulation and is intended to an isolated or non-isolated d.c. power source, the transient voltage through the d.c. power source is assuming same as 2,500 Vpk, transient voltage from the a.c. mains supply circuits, and Electric Strength Test voltage of 5000 Vac was conducted between input and output by manufacturer's request.

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- The current rating of protective device is to be evaluated in the end-product. Simulated Abnormal Operating Conditions (B.3) Test and Simulated Single Fault Conditions (B.4) Test were carried out with an External Fuse rated as follows.
  - External Slow-Blow Fuse rated 0.5A/250V for Models TRV 1-051XMaaaaaa and TRV 1-052XMaaaaaa.
  - External Slow-Blow Fuse rated 0.315A/250V for Models TRV 1-121XMaaaaaa, TRV 1-122XMaaaaaa, TRV 1-151XMaaaaaa, and TRV 1-152XMaaaaaa.
  - External Slow-Blow Fuse rated 0.16A/250V for Models TRV 1-241XMaaaaaa and TRV 1-242XMaaaaaa.
 Repeating Simulated Abnormal Operating Conditions Test and Simulated Single Fault Conditions Test in the end-product shall be considered if using different rated protective device.
- The DC to DC Converter was evaluated for transient voltage 2500 Vpk.
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Input-ES1: 250 Vrms / 420 Vpk per Manufacturer declaration.

**Ratings:** • The product covered is a DC to DC Converter for building-in audio/video, information and communication technology equipment.

Model Number	Typical Input Voltage (V dc)	Input Voltage (V dc)	Input Current Reference	Output Voltage (Vdc)	Output Current (mA )	Output Power (W)	Transformer	Layout
TRV 1-0510Maaaaaa	5	4.5 - 5.5	0.25	3.3	303	1.000	1	A
TRV 1-0511Maaaaaa	5		0.25	5	200	1.000	1	A
TRV 1-0512Maaaaaa	5		0.25	12	83	0.996	2	A
TRV 1-0513Maaaaaa	5		0.25	15	67	1.005	2	A
TRV 1-0521Maaaaaa	5		0.25	±5	±100	1.000	1	B
TRV 1-0522Maaaaaa	5		0.25	±12	±42	1.008	2	B
TRV 1-0523Maaaaaa	5		0.25	± 15	±34	1.020	2	B

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Model Number	Typical Input Voltage (V dc)	Input Voltage (V dc)	Input Current Reference	Output Voltage (Vdc)	Output Current (mA )	Output Power (W)	Transformer	Layout
TRV 1-1210Maaaaaa	12	9.6 - 14.4	0.10	3.3	303	1.000	3	C
TRV 1-1211Maaaaaa	12		0.10	5	200	1.000	5	C
TRV 1-1212Maaaaaa	12		0.10	12	83	0.996	4	C
TRV 1-1213Maaaaaa	12		0.10	15	67	1.005	4	C
TRV 1-1221Maaaaaa	12		0.10	±5	±100	1.000	5	D
TRV 1-1222Maaaaaa	12		0.10	±12	±42	1.008	4	D
TRV 1-1223Maaaaaa	12		0.10	±15	±34	1.020	4	D
TRV 1-1510Maaaaaa	15	12-18	0.10	3.3	303	1.000	3	C
TRV 1-1511Maaaaaa	15		0.10	5	200	1.000	5	C
TRV 1-1512Maaaaaa	15		0.10	12	83	0.996	6	C
TRV 1-1513Maaaaaa	15		0.10	15	67	1.005	6	C
TRV 1-1521Maaaaaa	15		0.10	±5	±100	1 000	5	D
TRV 1-1522Maaaaaa	15		0.10	±12	±42	1.008	6	D
TRV 1-1523Maaaaaa	15		0.10	±15	±34	1.020	6	D
TRV 1-2410Maaaaaa	24	102 - 28.8	0.10	3.3	303	1 000	7	C
TRV 1-2411Maaaaaa	24		0.10	5	200	1 000	7	C
TRV 1-2412Maaaaaa	24		010	12	83	0.996	8	C
TRV 1-2413Maaaaaa	24		0.10	15	67	1.005	8	C
TRV 1-2421Maaaaaa	24		0.10	±5	±100	1.000	7	D
TRV 1-2422Maaaaaa	24		0.10	±12	±42	1 008	8	D
TRV 1-2423Maaaaaa	24		0.10	±15	±34	1.020	8	D

**Nomenclature:** N/A