



Certificate Number: 20191213X3-A6005

Date: October 2023-07-14

UL CONDITIONS OF ACCEPTABILITY

Company Name: TRACO ELECTRONIC AG

File-CCN: E188913 – QQJQ2, QQJQ8

Product Description: DC to DC Converter

Models: TEP 100-3611UIRzzzzzz, TEP 100-3612UIRzzzzzz, TEP 100-3613UIRzzzzzz, TEP 100-3615UIRzzzzzz, TEP 100-3616UIRzzzzzz, TEP 100-3618UIRzzzzzz, TEP 100-36153UIRzzzzzz, TEP 100-7211UIRzzzzzz, TEP 100-7212UIRzzzzzz, TEP 100-7213UIRzzzzzz, TEP 100-7215UIRzzzzzz, TEP 100-7216UIRzzzzzz, TEP 100-7218UIRzzzzzz, TEP 100-72153UIRzzzzzz, TEP 60-3611UIRzzzzzz, TEP 60-3612UIRzzzzzz, TEP 60-3613UIRzzzzzz, TEP 60-3615UIRzzzzzz, TEP 60-3616UIRzzzzzz, TEP 60-3618UIRzzzzzz, TEP 60-36153UIRzzzzzz, TEP 60-7211UIRzzzzzz, TEP 60-7212UIRzzzzzz, TEP 60-7213UIRzzzzzz, TEP 60-7215UIRzzzzzz, TEP 60-7216UIRzzzzzz, TEP 60-7218UIRzzzzzz, TEP 60-72153UIRzzzzzz, TEP 40-3611UIRzzzzzz, TEP 40-3612UIRzzzzzz, TEP 40-3613UIRzzzzzz, TEP 40-3615UIRzzzzzz, TEP 40-3616UIRzzzzzz, TEP 40-3618UIRzzzzzz, TEP 40-36153UIRzzzzzz, TEP 40-7211UIRzzzzzz, TEP 40-7212UIRzzzzzz, TEP 40-7213UIRzzzzzz, TEP 40-7215UIRzzzzzz, TEP 40-7216UIRzzzzzz, TEP 40-7218UIRzzzzzz, TEP 40-72153UIRzzzzzz

Conditions Of Acceptability:

Engineering 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 end-product Electric Strength Test is to be based upon a maximum working voltage of :
Primary-Secondary: 220 Vrms / 608 Vpk
- The following output circuits are at ES1 energy levels : Outputs
- The following output circuits are at PS3 energy levels : Outputs
- The terminals of the DC to DC Converter are only suitable for factory wiring only.
- The DC to DC Converter was evaluated for Reinforced Insulation and is intended to be installed in an ES3 circuit which is separated from a.c. mains ES3 circuit by Double or Reinforce Insulation.
- 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 current rating of protective device is to be evaluated in the end-product. Simulated Abnormal Operating Conditions Test and Simulated Single Fault Conditions Test were carried out with an External Fuse rated as follows.

- External Fuse rated 8.0A/250Vdc for Models, TEP 40-3611UIRzzzzzz, TEP 40-3612UIRzzzzzz, TEP 40-3613UIRzzzzzz, TEP 40-3615UIRzzzzzz, TEP 40-3616UIRzzzzzz, TEP 40-3618UIRzzzzzz, TEP 40-36153UIRzzzzzz, , TEP 60-7211UIRzzzzzz, TEP 60-7212UIRzzzzzz, TEP 60-7213UIRzzzzzz, TEP 60-7215UIRzzzzzz, TEP 60-7216UIRzzzzzz, TEP 60-7218UIRzzzzzz, TEP 60-72153UIRzzzzzz .

- External Fuse rated 5.0A/250Vdc for Models TEP 40-7211UIRzzzzzz, TEP 40-7212UIRzzzzzz, TEP 40-7213UIRzzzzzz, TEP 40-7215UIRzzzzzz, TEP 40-7216UIRzzzzzz, TEP 40-7218UIRzzzzzz, TEP 40-72153UIRzzzzzz.

- External Fuse rated 12.0A/250Vdc for Models TEP 60-3611UIRzzzzzz, TEP 60-3612UIRzzzzzz, TEP 60-3613UIRzzzzzz, TEP 60-3615UIRzzzzzz, TEP 60-3616UIRzzzzzz, TEP 60-3618UIRzzzzzz, TEP 60-36153UIRzzzzzz.

- External Fuse rated 20.0A/250Vdc for Models TEP 100-3611UIRzzzzzz, TEP 100-3612UIRzzzzzz, TEP 100-3613UIRzzzzzz, TEP 100-3615UIRzzzzzz, TEP 100-3616UIRzzzzzz, TEP 100-3618UIRzzzzzz, TEP 100-36153UIRzzzzzz.

- External Fuse rated 13.0A/250Vdc for Models TEP 100-7211UIRzzzzzz, TEP 100-7212UIRzzzzzz, TEP 100-7213UIRzzzzzz, TEP 100-7215UIRzzzzzz, TEP 100-7216UIRzzzzzz, TEP 100-7218UIRzzzzzz, TEP 100-72153UIRzzzzzz.

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.

- Class of equipment shall be evaluated in end-product.
- Maximum Normal Load used for the Temperature Tests was provided with a DC Fan 300 LFM located 10 cm from the DC to DC Converter Optocouplers side.
- The following components require special consideration in the end-product Temperature Tests due to the indicated maximum temperature measurements during component-level testing: Plastic Case (79.8°C) worst result for Model TEP 100-7211UIRzzzzzz.
- DC to DC Converter provided with internal Plastic Frame of Input and Output for internal support parts. See Enclosure Id. 03-12 for details. Transformer (TX01) of Output PWB Shape changes. See Enclosure Id. 04-23 for details.

**Ratings:**

No.	Model	External Fuse Rated	Input Voltage Range (Vdc)	Input Current (A)	Output Voltage (Vdc)	Output Current (A)	Type of Main Board	Part Number of TX01	Construction of TX01
1	TEP 40-3611UIRzzzzzz	8.0A 250Vdc	9-75	4.99	5	8	A	9T-2554	A
2	TEP 40-3612UIRzzzzzz	8.0A 250Vdc	9-75	4.99	12	3.33	A	9T-2555	A
3	TEP 40-3613UIRzzzzzz	8.0A 250Vdc	9-75	4.99	15	2.67	A	9T-2556	A
4	TEP 40-3615UIRzzzzzz	8.0A 250Vdc	9-75	4.99	24	1.67	B	9T-2557	A
5	TEP 40-3616UIRzzzzzz	8.0A 250Vdc	9-75	4.99	28	1.43	B	9T-2558	A
6	TEP 40-3618UIRzzzzzz	8.0A 250Vdc	9-75	4.99	48	0.83	B	9T-2559	A
7	TEP 40-36153UIRzzzzzz	8.0A 250Vdc	9-75	4.99	53	0.75	B	9T-2560	A
8	TEP 40-7211UIRzzzzzz	5.0A 250Vdc	14-160	3.21	5	8	A	9T-2561	A
9	TEP 40-7212UIRzzzzzz	5.0A 250Vdc	14-160	3.21	12	3.33	A	9T-2562	A
10	TEP 40-7213UIRzzzzzz	5.0A 250Vdc	14-160	3.21	15	2.67	A	9T-2563	A
11	TEP 40-7215UIRzzzzzz	5.0A 250Vdc	14-160	3.21	24	1.67	B	9T-2564	A
12	TEP 40-7216UIRzzzzzz	5.0A 250Vdc	14-160	3.21	28	1.43	B	9T-2565	A



13	TEP 40-7218UIRzzzzzz	5.0A 250Vdc	14-160	3.21	48	0.83	B	9T-2566	A
14	TEP 40-72153UIRzzzzzz	5.0A 250Vdc	14-160	3.21	53	0.75	B	9T-2567	A

No.	Model	External Fuse Rated	Input Voltage Range (Vdc)	Input Current (A)	Output Voltage (Vdc)	Output Current (A)	Type of Main Board	Part Number of TX01	Construction of TX01
1	TEP 60-3611UIRzzzzzz	12.0A 250Vdc	9-75	7.49	5	12	A	9T-2540	A
2	TEP 60-3612UIRzzzzzz	12.0A 250Vdc	9-75	7.49	12	5	A	9T-2541	A
3	TEP 60-3613UIRzzzzzz	12.0A 250Vdc	9-75	7.49	15	4	A	9T-2542	A
4	TEP 60-3615UIRzzzzzz	12.0A 250Vdc	9-75	7.49	24	2.5	B	9T-2543	A
5	TEP 60-3616UIRzzzzzz	12.0A 250Vdc	9-75	7.49	28	2.15	B	9T-2544	A
6	TEP 60-3618UIRzzzzzz	12.0A 250Vdc	9-75	7.49	48	1.25	B	9T-2545	A
7	TEP 60-36153UIRzzzzzz	12.0A 250Vdc	9-75	7.49	53	1.14	B	9T-2546	A
8	TEP 60-7211UIRzzzzzz	8.0A 250Vdc	14-160	4.82	5	12	A	9T-2547	A
9	TEP 60-7212UIRzzzzzz	8.0A 250Vdc	14-160	4.82	12	5	A	9T-2548	A
10	TEP 60-7213UIRzzzzzz	8.0A 250Vdc	14-160	4.82	15	4	A	9T-2549	A



11	TEP 60-7215UIRzzzzzz	8.0A 250Vdc	14-160	4.82	24	2.5	B	9T-2550	A
12	TEP 60-7216UIRzzzzzz	8.0A 250Vdc	14-160	4.82	28	2.15	B	9T-2551	A
13	TEP 60-7218UIRzzzzzz	8.0A 250Vdc	14-160	4.82	48	1.25	B	9T-2552	A
14	TEP 60-72153UIRzzzzzz	8.0A 250Vdc	14-160	4.82	53	1.14	B	9T-2553	A

No.	M o d e l	External Fuse Rated	Input Voltage Range (Vdc)	Input Current (A)	Output Voltage (Vdc)	Output Current (A)	Type of Main Board	Part Number of TX01	Construction of TX01
1	TEP 100-3611UIRzzzzzz	20.0A 250Vdc	9-75	12.63	5	20	A	9T-2568	A
2	TEP 100-3612UIRzzzzzz	20.0A 250Vdc	9-75	12.63	12	8.35	A	9T-2569	A
3	TEP 100-3613UIRzzzzzz	20.0A 250Vdc	9-75	12.63	15	6.7	A	9T-2570	A
4	TEP 100-3615UIRzzzzzz	20.0A 250Vdc	9-75	12.63	24	4.2	B	9T-2571	A
5	TEP 100-3616UIRzzzzzz	20.0A 250Vdc	9-75	12.63	28	3.6	B	9T-2572	A
6	TEP 100-3618UIRzzzzzz	20.0A 250Vdc	9-75	12.63	48	2.1	B	9T-2573	A
7	TEP 100-36153UIRzzzzzz	20.0A 250Vdc	9-75	12.63	53	1.92	B	9T-2574	A
8	TEP 100-7211UIRzzzzzz	13.0A 250Vdc	14-160	8.12	5	20	A	9T-2575	A
9	TEP 100-7212UIRzzzzzz	13.0A 250Vdc	14-160	8.12	12	8.35	A	9T-2576	A



10	TEP 100-7213UIRzzzzzz	13.0A 250Vdc	14-160	8.12	15	6.7	A	9T-2577	A
11	TEP 100-7215UIRzzzzzz	13.0A 250Vdc	14-160	8.12	24	4.2	B	9T-2578	A
12	TEP 100-7216UIRzzzzzz	13.0A 250Vdc	14-160	8.12	28	3.6	B	9T-2579	A
13	TEP 100-7218UIRzzzzzz	13.0A 250Vdc	14-160	8.12	48	2.1	B	9T-2580	A
14	TEP 100-72153UIRzzzzzz	13.0A 250Vdc	14-160	8.12	53	1.92	B	9T-2581	A

Nomenclature: z = alphanumeric, "-", "/" or blank for marketing purposes.