

Certificate Number: 121319X3-A6021

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: TEN 40-2410WIR zzzzzz (a), TEN 40-2411WIR zzzzzz (a), TEN 40-2412WIR zzzzzz (a), TEN 40-2413WIR zzzzzz (a), TEN 40-2415WIR zzzzzz (a), TEN 40-2422WIR zzzzzz (a), TEN 40-2423WIR zzzzzz (a), TEN 40-2425WIR zzzzzz (a), TEN 40-4810WIR zzzzzz (a), TEN 40-4811WIR zzzzzz (a), TEN 40-4812WIR zzzzzz (a), TEN 40-4813WIR zzzzzz (a), TEN 40-4815WIR zzzzzz (a), TEN 40-4822WIR zzzzzz (a), TEN 40-4823WIR zzzzzz (a), TEN 40-4825WIR zzzzzz (a), TEN 40-7210WIR zzzzzz (a), TEN 40-7211WIR zzzzzz (a), TEN 40-7212WIR zzzzzz (a), TEN 40-7213WIR zzzzzz (a), TEN 40-7215WIR zzzzzz (a), TEN 40-7222WIR zzzzzz (a), TEN 40-7223WIR zzzzzz (a), TEN 40-7225WIR zzzzzz (a), TEN 60-1210N zzzzzz (a), TEN 60-1211N zzzzzz (a), TEN 60-1212N zzzzzz (a), TEN 60-1213N zzzzzz (a), TEN 60-1215N zzzzzz (a), TEN 60-1222N zzzzzz (a), TEN 60-1223N zzzzzz (a), TEN 60-1225N zzzzzz (a), TEN 60-2410N zzzzzz (a), TEN 60-2411N zzzzzz (a), TEN 60-2412N zzzzzz (a), TEN 60-2413N zzzzzz (a), TEN 60-2415N zzzzzz (a), TEN 60-2422N zzzzzz (a), TEN 60-2423N zzzzzz (a), TEN 60-2425N zzzzzz (a), TEN 60-4810N zzzzzz (a), TEN 60-4811N zzzzzz (a), TEN 60-4812N zzzzzz (a), TEN 60-4813N zzzzzz (a), TEN 60-4815N zzzzzz (a), TEN 60-4822N zzzzzz (a), TEN 60-4823N zzzzzz (a), TEN 60-4825N zzzzzz (a), TEN 60-2410WIN zzzzzz (a), TEN 60-2411WIN zzzzzz (a), TEN 60-2412WIN zzzzzz (a), TEN 60-2413WIN zzzzzz (a), TEN 60-2415WIN zzzzzz (a), TEN 60-2422WIN zzzzzz (a), TEN 60-2423WIN zzzzzz (a), TEN 60-2425WIN zzzzzz (a), TEN 60-4810WIN zzzzzz (a), TEN 60-4811WIN zzzzzz (a), TEN 60-4812WIN zzzzzz (a), TEN 60-4813WIN zzzzzz (a), TEN 60-4815WIN zzzzzz (a), TEN 60-4822WIN zzzzzz (a), TEN 60-4823WIN zzzzzz (a), TEN 60-4825WIN zzzzzz (a)

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 output circuits are at ES1 energy levels : Output for all Models
- The investigated Pollution Degree is : 2

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- The terminals of the DC-DC Converter are only suitable for factory wiring only.
- Electric Strength test voltage 3000 Vdc on input to output; 1600Vdc on input to enclosure for TEN 40-721XWIR zzzzzz, TEN 40-722XWIR zzzzzz;
Electric Strength test voltage 1600Vdc on input to output and input to enclosure for models TEN 40-XX1XWIR zzzzzz, TEN 40-XX2XWIR zzzzzz and TEN 60-XX1XN zzzzzz, TEN 60-XX2XN zzzzzz ,
x= 12, 24, 48 denote for Input voltage; when models without a W, XX = 12 (9-18V), 24 (18-36V), 48 (36-75V); when models with a W, XX = 24 (9-36V), 48 (18-75V) per manufacturer's specification.
- The Unit is considered as functional insulation and intended to be installed in isolated non-mains ES3 circuit which is separated from a.c. mains ES3 circuit by Reinforce or Double insulation.
- Electrical enclosure (for ES safeguard), fire enclosure (for PS safeguard), mechanical enclosure (for MS safeguard), and safeguard for thermal burn injury (for TS safeguard) shall be provided and evaluated in end product investigation.
- Class of equipment and Power Systems shall be evaluated in end product investigation.
- Current rating of protective device as part of the building installation is to be determined by the end use.
- The DC-DC converter Model FED60 series shall be provided with external cooling fan (minimum 200 LFM). For external cooling and power supply location. See enclosure Miscellaneous ID 7-02.
- Abnormal/Component Failure Tests were conducted with an external fuse Slow Blow or Fast-Acting Fuse:
The Max. Rating of 10.0 A (Fast-Acting) for Models TEN 60-XX1XN zzzzzz (a), TEN 60-XX2XN zzzzzz (a);
The Max. Rating of 8.0 A (Fast-Acting) for Modes TEN 40-XX1XWIR zzzzzz, TEN 40-XX2XWIR zzzzzz (XX= 12, 24);
The Max. Rating of 4.0 A (Slow Blow) for Modes TEN 40-XX1XWIR zzzzzz, TEN 40-XX2XWIR zzzzzz (XX= 48);
The Max. Rating of 3.15 A (Slow Blow) for Modes TEN 40-XX1XWIR zzzzzz, TEN 40-XX2XWIR zzzzzz (XX= 110).
Repeated tests in the end-use application shall be considered while installing different rated protective devices.
- Mechanical, Fire and Electrical enclosure should be considered at the end use.
- The output pins of the DC to DC convertor has been evaluated for ES1; ES classification of ordinary person accessible parts should be re-considered at the end use.
- Unit is intended to be installed in isolated secondary circuit (Consider transient voltages 1500 Vpk) which is separated from primary circuit by Reinforce or Double insulation.
- The Metal Enclosure is considered as floating conductive.

Ratings: • Models TEN 40-XX1XWIR zzzzzz, TEN 60-XX1XN zzzzzz, TEN 60-XX1XWIN zzzzzz for single output. Models TEN 40-XX2XWIR zzzzzz,, TEN 60-XX2XN zzzzzz, TEN 60-XX2XWIN zzzzzz for dual output.

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Series are similar to each other except for output power, output voltage, input voltage, input current, transformer, schematic, PWB layout and model designation.

Number	Input Voltage Range	Input Current	Output Voltage	Output Current
TEN 40-2410WIR zzzzzz (a)	9 ~ 36 VDC	4.074A	3.3 VDC	10000mA
TEN 40-2411WIR zzzzzz (a)	9 ~ 36 VDC	4.884A	5.0 VDC	8000mA
TEN 40-2412WIR zzzzzz (a)	9 ~ 36 VDC	4.830A	12 VDC	3333mA
TEN 40-2413WIR zzzzzz (a)	9 ~ 36 VDC	4.829A	15 VDC	2666mA
TEN 40-2415WIR zzzzzz (a)	9 ~ 36 VDC	4.882A	24 VDC	1666mA
TEN 40-2422WIR zzzzzz (a)	9 ~ 36 VDC	4.936A	±12VDC	±1666mA
TEN 40-2423WIR zzzzzz (a)	9 ~ 36 VDC	4.937A	±15VDC	±1333mA
TEN 40-2425WIR zzzzzz (a)	9 ~ 36 VDC	4.882A	±24VDC	±833mA
TEN 40-4810WIR zzzzzz (a)	18 ~ 75 VDC	2.037A	3.3 VDC	10000mA
TEN 40-4811WIR zzzzzz (a)	18 ~ 75 VDC	2.442A	5.0 VDC	8000mA
TEN 40-4812WIR zzzzzz (a)	18 ~ 75 VDC	2.415A	12 VDC	3333mA
TEN 40-4813WIR zzzzzz (a)	18 ~ 75 VDC	2.414A	15 VDC	2666mA
TEN 40-4815WIR zzzzzz (a)	18 ~ 75 VDC	2.441A	24 VDC	1666mA
TEN 40-4822WIR zzzzzz (a)	18 ~ 75 VDC	2.468A	±12VDC	±1666mA
TEN 40-4823WIR zzzzzz (a)	18 ~ 75 VDC	2.468A	±15VDC	±1333mA
TEN 40-4825WIR zzzzzz (a)	18 ~ 75 VDC	2.441A	±24VDC	±833mA
TEN 40-7210WIR zzzzzz (a)	43~160 VDC	0.872A	3.3 VDC	10000mA
TEN 40-7211WIR zzzzzz (a)	43~160 VDC	1.045A	5.0 VDC	8000mA
TEN 40-7212WIR zzzzzz (a)	43~160 VDC	1.027A	12 VDC	3333mA
TEN 40-7213WIR zzzzzz (a)	43~160 VDC	1.033A	15 VDC	2666mA
TEN 40-7215WIR zzzzzz (a)	43~160 VDC	1.033A	24 VDC	1666mA
TEN 40-7222WIR zzzzzz (a)	43~160 VDC	1.044A	±12VDC	±1666mA
TEN 40-7223WIR zzzzzz (a)	43~160 VDC	1.044A	±15VDC	±1333mA
TEN 40-7225WIR zzzzzz (a)	43~160 VDC	1.021A	±24VDC	±833mA
TEN 60-1210N zzzzzz (a)	9 ~ 18 VDC	4.943A	3.3 VDC	12000
TEN 60-1211N zzzzzz (a)	9 ~ 18 VDC	7.407A	5.0 VDC	12000
TEN 60-1212N zzzzzz (a)	9 ~ 18 VDC	7.407A	12 VDC	5000
TEN 60-1213N zzzzzz (a)	9 ~ 18 VDC	7.326A	15 VDC	4000
TEN 60-1215N zzzzzz (a)	9 ~ 18 VDC	7.246A	24VDC	2500

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Number	Input Voltage Range	Input Current	Output Voltage	Output Current
TEN 60-1222N zzzzzz (a)	9 ~ 18 VDC	7.407A	±12VDC	±2500mA
TEN 60-1223N zzzzzz (a)	9 ~ 18 VDC	7.407A	±15VDC	±2000mA
TEN 60-1225N zzzzzz (a)	9 ~ 18 VDC	7.326A	±24VDC	±1250mA
TEN 60-2410N zzzzzz (a)	18 ~ 36 VDC	2.444A	3.3 VDC	12000
TEN 60-2411N zzzzzz (a)	18 ~ 36 VDC	3.623A	5.0 VDC	12000
TEN 60-2412N zzzzzz (a)	18 ~ 36 VDC	3.663A	12 VDC	5000
TEN 60-2413N zzzzzz (a)	18 ~ 36 VDC	3.623A	15 VDC	4000
TEN 60-2415N zzzzzz (a)	18 ~ 36 VDC	3.6637A	24VDC	2500
TEN 60-2422N zzzzzz (a)	18 ~ 36 VDC	3.703A	±12VDC	±2500mA
TEN 60-2423N zzzzzz (a)	18 ~ 36 VDC	3.703A	±15VDC	±2000mA
TEN 60-2425N zzzzzz (a)	18 ~ 36 VDC	3.663A	±24VDC	±1250mA
TEN 60-4810N zzzzzz (a)	36 ~ 75 VDC	1.222A	3.3 VDC	12000
TEN 60-4811N zzzzzz (a)	36 ~ 75 VDC	1.811A	5.0 VDC	12000
TEN 60-4812N zzzzzz (a)	36 ~ 75 VDC	1.811A	12 VDC	5000
TEN 60-4813N zzzzzz (a)	36 ~ 75 VDC	1.811A	15 VDC	4000
TEN 60-4815N zzzzzz (a)	36 ~ 75 VDC	1.811A	24VDC	2500
TEN 60-4822N zzzzzz (a)	36 ~ 75 VDC	1.831A	±12VDC	±2500mA
TEN 60-4823N zzzzzz (a)	36 ~ 75 VDC	1.831A	±15VDC	±2000mA
TEN 60-4825N zzzzzz (a)	36 ~ 75 VDC	1.831A	±24VDC	±1250mA
TEN 60-2410WIN zzzzzz (a)	9~36VDC	4.888A	3.3VDC	12000
TEN 60-2411WIN zzzzzz (a)	9~36VDC	7.246A	5.0VDC	12000
TEN 60-2412WIN zzzzzz (a)	9~36VDC	7.246A	12VDC	5000
TEN 60-2413WIN zzzzzz (a)	9~36VDC	7.246A	15VDC	4000
TEN 60-2415WIN zzzzzz (a)	9~36VDC	7.246A	24VDC	2500
TEN 60-2422WIN zzzzzz (a)	9~36VDC	7.326A	±12VDC	±2500mA
TEN 60-2423WIN zzzzzz (a)	9~36VDC	7.326A	±15VDC	±2000mA
TEN 60-2425WIN zzzzzz (a)	9~36VDC	7.326A	±24VDC	±1250mA
TEN 60-4810WIN zzzzzz (a)	18~75VDC	2.444A	3.3VDC	12000
TEN 60-4811WIN zzzzzz (a)	18~75VDC	3.623A	5.0VDC	12000
TEN 60-4812WIN zzzzzz (a)	18~75VDC	3.623A	12VDC	5000
TEN 60-4813WIN zzzzzz (a)	18~75VDC	3.623A	15VDC	4000
TEN 60-4815WIN zzzzzz (a)	18~75VDC	3.663A	24VDC	2500

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Number	Input Voltage Range	Input Current	Output Voltage	Output Current
TEN 60-4822WIN zzzzzz (a)	18~75VDC	3.663A	±12VDC	±2500mA
TEN 60-4823WIN zzzzzz (a)	18~75VDC	3.663A	±15VDC	±2000mA
TEN 60-4825WIN zzzzzz (a)	18~75VDC	3.663A	±24VDC	±1250mA

Nomenclature: (a)- Where z= alphanumeric, "-", "/" or blank for marketing purposes.