Certificate Number: 071420X3-A6025 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: THN 20-2410WIRaaaaaa, THN 20-2411BWIRaaaaaa, THN 20-2411WIRaaaaaa, THN 20-2412WIRaaaaaa, THN 20-2413WIRaaaaaa, THN 20-2415WIRaaaaaa, THN 20-2422WIRaaaaaa, THN 20-2423WIRaaaaaa, THN 20-2425WIRaaaaaa, THN 20-4810WIRaaaaaa, THN 20-4811BWIRaaaaaa, THN 20-4811WIRaaaaaa, THN 20-4812WIRaaaaaa, THN 20-4813WIRaaaaaa, THN 20-4815WIRaaaaaa, THN 20-4822WIRaaaaaa, THN 20-4823WIRaaaaaa, THN 20-4825WIRaaaaaa, THN 20-7210WIRaaaaaa, THN 20-7211BWIRaaaaaa, THN 20-7211WIRaaaaaa, THN 20-7212WIRaaaaaa, THN 20-7213WIRaaaaaa, THN 20-7215WIRaaaaaa, THN 20-7222WIRaaaaaa, THN 20-7223WIRaaaaaa, THN 20-7225WIRaaaaaa, THN 30-2410WIRaaaaaa, THN 30-2411WIRaaaaaa, THN 30-2412WIRaaaaaa, THN 30-2413WIRaaaaaa, THN 30-2415WIRaaaaaa, THN 30-2422WIRaaaaaa, THN 30-2423WIRaaaaaa, THN 30-2425WIRaaaaaa, THN 30-4810WIRaaaaaa, THN 30-4811WIRaaaaaa, THN 30-4812WIRaaaaaa, THN 30-4813WIRaaaaaa, THN 30-4815WIRaaaaaa, THN 30-4822WIRaaaaaa, THN 30-4823WIRaaaaaa, THN 30-4825WIRaaaaaa,

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
- The following output circuits are at PS3 energy levels : Output
- The terminals of the DC-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/DC Converter was evaluated for Functional Insulation and is intended to be installed in an isolated (non-mains) ES3 or ES2 circuit which is separated from a.c. mains circuit by Double or Reinforced Insulation.
- The DC/DC Converters were tested with an external Slow Blow Fuse. If used on a protection circuit greater than this, addition testing maybe necessary. Maximum of 6 A for Models THN 20-24XXWIRaaaaaa, THN 30-24XXWIRaaaaaa / Maximum of 6.3 A for Models
- THN 20-2422WIRaaaaaa, THN 20-2423WIRaaaaaa, THN 20-2412WIRaaaaaa, THN 20-2413WIRaaaaaa, THN 20-4822WIRaaaaaa, THN 20-4823WIRaaaaaa/ Maximum 3 A for Models THN 30-48XXWIRaaaaaa / Maximum 2 A for Models THN 20-482xWIRaaaaaa and THN 20-481xWIRaaaaaa

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- The DC/DC Converters were tested for an input voltage of 9 to 160 V d.c. with no tolerance.
- All circuits were evaluated as secondary hazardous voltage level with Functional Insulation, and it is necessary that Basic Insulation shall be considered in the end-product. Electric Strength Test voltage of 2250 V d.c. was conducted between input and output for PCB Layout Types A, B, C, D, E, and K by manufacturer's request. Type A using for all single output Models THN 20-xy1Waaaaaa and THN 30-xy1WIRaaaaaa (x = 24 or 48 and y1 = 3P3, 05, 5P1, 12, 15 or 24). Type B using for all dual output Models THN 20-x24WISaaaaaa (x = 24 or 48) and THN 30-xy2WISaaaaaa (x = 24 or 48 and y2 = 12, 15 or 24). Type C is alternate for single output Models THN 30-2410WIRaaaaaa, THN 30-2411WIRaaaaaa, THN 30-4810WIRaaaaaa, THN 20-2410WIRaaaaaa, THN 20-4811BWIRaaaaaa, THN 20-4811WIRaaaaaa, and THN 20-4810WIRaaaaaa. Type D using for all single output Models THN 20-xy1WISaaaaaa (x = 24 or 48 and y1 = 12 or 15). Type E using for all dual output Models THN 20-xy2WISaaaaaa (x = 24 or 48 and y2 = 12 or 15). Type K using for single output models THN 30-xy1WISaaaaaa (x = 24 or 48 and y1 = 54).
- All circuits were evaluated as secondary hazardous voltage level with Functional Insulation, and it is necessary that Basic Insulation shall be considered in the end-product. Electric Strength Test voltage of 3000 V d.c. was conducted between input and output; 1,600 V d.c. for input pin and metal chassis for PCB Layout Types F, G, H, I, J, and L by manufacturer's request. Type F for single output Models THN 20-7210WIRaaaaaa, THN 20-7211BWIRaaaaaa, THN 20-7211WIRaaaaaa, THN 20-7212WIRaaaaaa, THN 20-7213WIRaaaaaa, and THN 20-7215WIRaaaaaa. Type H for single output Models, THN 20-7210WIRaaaaaa, THN 20-7211BWIRaaaaaa, THN 20-7211WIRaaaaaa, THN 20-7212WIRaaaaaa, THN 20-7213WIRaaaaaa, and THN 20-7215WIRaaaaaa. Type G for dual output Models THN 20-7222WIRaaaaaa, THN 20-7223WIRaaaaaa, and THN 20-7225WIRaaaaaa. Type I for dual output Models, THN 20-7222WIRaaaaaa, THN 20-7223WIRaaaaaa, THN 20-7225WIRaaaaaa, THN 30-7222WIRaaaaaa, THN 30-7223WIRaaaaaa, THN 30-7225WIRaaaaaa. Type J for single output Models THN 30-7210WIRaaaaaa, THN 30-7211WIRaaaaaa, THN 30-7212WIRaaaaaa, THN 30-7213WIRaaaaaa, THN 30-7215WIRaaaaaa, Type L for single output Model THN 30-7219WIR.
- External Fan used for Models THN 30-242xWIRaaaaaa, THN 30-241xWIRaaaaaa, THN 30-721xWIRaaaaaa, and THN 30-722xWIRaaaaaa. See Enclosure Id. 07-02 for details.

Ratings: • Models are similar except for model designation, output power, output voltage, input voltage, input current, transformer, schematic, and PWB layout. See Enclosure Id. 07-01 for details.

Model	Input Voltage| (V d.c.)	Input Current (A)	Output Voltage (V d.c.)	Output Current (A)	Output Power (W)	Schematic and Layout	Transformer
THN 30-2410WIRaaaaaa	9-36	3.02	3.3	7	23.1	A or C	TX1
THN 30-2411WIRaaaaaa	9-36	3.83	5.1	6	30.6	A or C	TX2
THN 30-2412WIRaaaaaa	9-36	3.83	12	2.5	30	A	TX3
THN 30-2413WIRaaaaaa	9-36	3.83	15	2	30	A	TX4
THN 30-2419WIR (a)	9-36	3.79	24	1.25	30	A	TX5
THN 30-2415WIRaaaaaa	9-36	3.666	54	0.556	30	K	TX16
THN 30-2422WIRaaaaaa	9-36	3.83	±12	±1.25	30	B	TX11

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Model	Input Voltage| (V d.c.)	Input Current (A)	Output Voltage (V d.c.)	Output Current (A)	Output Power (W)	Schematic and Layout	Transformer
THN 30-2423WIRaaaaaa	9-36	3.74	±15	±1	30	B	TX12
THN 30-2425WIRaaaaaa	9-36	3.74	±24	±0.625	30	B	TX16
THN 30-4810WIRaaaaaa	18-75	1.51	3.3	7	23.1	A or C	TX6
THN 30-4811WIRaaaaaa	18-75	1.89	5.1	6	30.6	A or C	TX7
THN 30-4812WIRaaaaaa	18-75	1.89	12	2.5	30	A	TX8
THN 30-4813WIRaaaaaa	18-75	1.89	15	2	30	A	TX9
THN 30-4815WIRaaaaaa	18-75	1.89	24	1.25	30	A	TX10
THN 30-4819WIR (a)	18-75	1.853	54	0.556	30	K	TX15
THN 30-4822WIRaaaaaa	18-75	1.87	±12	±1.25	30	B	TX13
THN 30-4823WIRaaaaaa	18-75	1.85	±15	±1	30	B	TX14
THN 30-4825WIRaaaaaa	18-75	1.85	±24	±0.625	30	B	TX15
THN 20-2410WIRaaaaaa	9-36	2.5	3.3	5.5	18.15	C	TX1
THN 20-2411BWIRaaaaaa	9-36	2.5	5	4	20	C	TX2
THN 20-2411WIRaaaaaa	9-36	2.5	5.1	4	20.4	C	TX2
THN 20-2412WIRaaaaaa	9-36	2.501	12	1.670	20.04	D	TX17
THN 20-2413WIRaaaaaa	9-36	2.49	15	1.330	19.95	D	TX18
THN 20-2415WIRaaaaaa	9-36	2.44	24	0.833	19.992	A	TX5
THN 20-2422WIRaaaaaa	9-36	2.495	±12	±0.833	19.992	E	TX19
THN 20-2423WIRaaaaaa	9-36	2.47	±15	±0.667	20.01	E	TX20
THN 20-2425WIRaaaaaa	9-36	2.44	±24	±0.417	20.016	B	TX16
THN 20-4810WIRaaaaaa	18-75	1.23	3.3	5.5	18.15	C	TX6
THN 20-4811BWIRaaaaaa	18-75	1.23	5	4	20	C	TX7
THN 20-4811WIRaaaaaa	18-75	1.23	5.1	4	20.4	C	TX7
THN 20-4812WIRaaaaaa	18-75	1.25	12	1.670	20.04	D	TX21
THN 20-4813WIRaaaaaa	18-75	1.231	15	1.330	19.95	D	TX22
THN 20-4815WIRaaaaaa	18-75	1.22	24	0.833	19.992	A	TX10
THN 20-4822WIRaaaaaa	18-75	1.247	±12	±0.833	19.992	E	TX23
THN 20-4823WIRaaaaaa	18-75	1.235	±15	±0.667	20.01	E	TX24
THN 20-4825WIRaaaaaa	18-75	1.22	±24	±0.417	20.016	B	TX15
THN 20-7210WIRaaaaaa	36-160	0.573	3.3	5.5	18.15	F or H	TX25
THN 20-7211BWIRaaaaaa	36-160	0.617	5	4	20	F or H	TX26
THN 20-7211WIRaaaaaa	36-160	0.63	5.1	4	20.4	F or H	TX26
THN 20-7212WIRaaaaaa	36-160	0.619	12	1.67	20.04	F or H	TX27

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Model	Input Voltage| (V d.c.)	Input Current (A)	Output Voltage (V d.c.)	Output Current (A)	Output Power (W)	Schematic and Layout	Transformer
THN 20-7213WIRaaaaaa	36-160	0.616	15	1.33	19.95	F or H	TX28
THN 20-7215WIRaaaaaa	36-160	0.61	24	0.833	19.992	F or H	TX29
THN 20-7222WIRaaaaaa	36-160	0.617	±12	±0.833	19.992	G or I	TX30
THN 20-7223WIRaaaaaa	36-160	0.618	±15	±0.667	20.01	G or I	TX31
THN 20-7225WIRaaaaaa	36-160	0.611	±24	±0.417	20.016	G or I	TX32
THN 30-7210WIRaaaaaa	36-160	0.729	3.3	7.0	23.1	J	TX33
THN 30-7211WIRaaaaaa	36-160	0.944	5.1	6.0	30.6	J	TX34
THN 30-7212WIRaaaaaa	36-160	0.926	12	2.5	30	J	TX35
THN 30-7213WIRaaaaaa	36-160	0.926	15	2.0	30	J	TX36
THN 30-7215WIRaaaaaa	36-160	0.916	24	1.250	30	J	TX37
THN 30-7219WIR (a)	36-160	0.937	54	0.556	30	L	TX40
THN 30-7222WIRaaaaaa	36-160	0.926	±12	±1.250	30	I	TX38
THN 30-7223WIRaaaaaa	36-160	0.926	±15	±1.000	30	I	TX39
THN 30-7225WIRaaaaaa	36-160	0.916	±24	±0.625	30	I	TX40

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

Nomenclature: N/A