



Certificate Number: A28-UL

Date: 2023-07-06

## UL CONDITIONS OF ACCEPTABILITY

**Company Name:** TRACO ELECTRONIC AG

**File-CCN:** E188913 – QGGQ2, QGGQ8, QQJQ2, QQJQ8

**Product Description:** DC/DC Converter

**Models:** TEP 160-2418zzzzzzzz, TEP 160-4818zzzzzzzz, TEP 160-48153zzzzzzzz,  
TEP 160-2418WIRzzzzzzzz, TEP 160-4818WIRzzzzzzzz, TEP 160-7218WIRzzzzzzzz,  
TEP 200-2418WIRzzzzzzzz, TEP 200-4818WIRzzzzzzzz, TEP 200-7218WIRzzzzzzzz

### 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-SELV: 185 Vrms / 264 Vpk
- The following secondary output circuits are SELV : Output
- The following secondary output circuits are at hazardous energy levels : Output for all models except Models TEP 160-2418zzzzzzzz, TEP 160-2418WIRzzzzzzzz, TEP 200-2418WIRzzzzzzzz, TEP 160-4818WIRzzzzzzzz and TEP 160-7218WIRzzzzzzzz.
- The following secondary output circuits are at non-hazardous energy levels : Output of Models TEP 160-2418zzzzzzzz, TEP 160-2418WIRzzzzzzzz, TEP 200-2418WIRzzzzzzzz, TEP 160-4818WIRzzzzzzzz and TEP 160-7218WIRzzzzzzzz.
- The power supply terminals and/or connectors are: Suitable for factory wiring only.
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is : Required. Metal Chassis is required to be bonded to PE.
- An investigation of the protective bonding terminals has : Not Been Conducted.
- The following end-product enclosures are required : Fire / Electrical
- The maximum continuous power supply output (Watts) relied on forced air cooling from : See Enclosure Id. 07-02 for details.
- The current rating of protective device is to be evaluated in end-product. Abnormal Operation Test, Component Failure Test, Simulated Abnormal Operating Conditions Test, and Simulated Single Fault

Conditions Test were carried out with an external Fuse rated 25 A. Tests should be repeated in end-product if a differently rated overcurrent protective device used.

- The DC/DC Converter has Double/Reinforced Insulation between Input and Output.
- The DC/DC Converter were tested for rated input voltage with no tolerance, if used outside this voltage range, additional testing maybe required.
- The distances were investigated for transient rating for secondary circuit is up to 1500 V, any other consideration for transient rating greater than 1500 V shall be evaluated in end-product.
- All tests were conducted with an external overcurrent protective device Fuse (Littelfuse Inc., Type 324, rated 25A/250Vac and 125Vdc/25A).
- External Circuit (ES3) - not Mains connected
- The output of DC/DC Converter were evaluated for PS3 and ES2.
- The DC/DC Converter input to output were evaluated to Reinforced Insulation. Input / Output circuits and Baseplate were evaluated to Basic Insulation transient voltage 1500 V peak and maximum working voltage of 185 V rms / 264 V peak (Declared by manufacturer).
- The need for suitable electrical enclosure (for ES safeguard), fire enclosure (for PS safeguard), mechanical enclosure (for MS safeguard), and safeguard for thermal burn injury (for TS safeguard) is to be evaluated and provided (if necessary) in the end-product.
- Classification of use by to be evaluated in end-product.
- The current rating of protective device is to be evaluated in end-product. Abnormal Operation Test, Component Failure Test, Simulated Abnormal Operating Conditions Test, and Simulated Single Fault Conditions Test were carried out with an external Fuse rated 25 A. Tests should be repeated in end-product if a differently rated overcurrent protective device used.

#### **Nomenclature:**

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