

# INSTALLATION INSTRUCTION

## T Series

### 500 W AC-DC Converters

#### OPERATION RANGE

Refer to product rating label for input and output ratings.

#### INSTALLATION

Connection to the system shall be made via the female connector H15; see Accessories datasheet: *Cassette Style Mating Connectors (BCD20022)*. Other installation methods may not meet the safety requirements.

The input pin 4 (L-) is internally fused. This fuse is designed to protect the converter in case of overcurrent and may not be able to satisfy all customer requirements. External fuses in the wiring to one or both inputs (pin 4 and/or pin 6) may therefore be necessary to ensure compliance with local requirements. A second fuse in the wiring to the neutral line N~ is needed, if:

- Local requirements demand an individual fuse in each source line
- Phase and neutral of the AC mains are not defined or cannot be assigned to the corresponding terminals.
- Neutral to earth impedance is high or undefined

**Important:** Do not open the converters, or warranty will be invalidated.

**Caution:** Prior to handling, the converter must be disconnected from mains and from other sources (such as batteries). Hazardous energy levels may be present at the output 3 minutes, even after the input voltage has been disconnected or switched off. This is indicated by red error LED. To prevent an unwanted short-circuit across the output of a disconnected converter, pins 16 and 18 are leading pins. In case of short-circuit across the output of a T unit, all LEDs will be off even though the mains may be present.

Due to high output current value, the T converters provide for each the positive and the negative output path two internally parallel connected contacts (pins 12/14 and pins 20/22). It is recommended to connect the load to both female connector pins of each path, in order to keep voltage drop and power loss across the connector as small as possible. If a T converter is used for battery charging, check whether the position of the cell voltage selector switch corresponds to the required battery cell voltage.

**Caution:** Lead-acid batteries can generate H<sub>2</sub> and O<sub>2</sub> gas, which can form explosive mixtures. Sufficient ventilation must be provided in battery cabinets and installation rooms. Further information about designing battery systems is contained in VDE 0510, part 2.

If T converters are connected in parallel, it is recommended to connect the two hot-plug pins of each female connector, HC+ (pin 16) and HC- (pin 18) to their respective output pins Vo+ and Vo-.

For more details see the T Series Datasheet at [belfuse.com/power-solutions](http://belfuse.com/power-solutions).

#### PROTECTION DEGREE AND CLEANING LIQUIDS

If the female connector is fitted to the converter, the protection degree is IP30.

In order to avoid damage, any penetration of cleaning fluids has to be prevented, since the power supplies are not hermetically sealed.

#### AUDIBLE NOISE

Under certain operating conditions, a T Series converter may generate a slight audible noise due to magnetostriction in the transformer. This noise does neither affect the function of the converter, nor is it detrimental to its performance over time.

#### CAUTIONS

All T converters are components, intended exclusively for inclusion within other equipment by an industrial assembly operation or by professional installers. Installation must strictly follow the national safety regulations in compliance with the enclosure, mounting, creepage, clearance, casualty, markings, and segregation requirements of the end-use application.

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

#### SAFETY OF OPERATOR-ACCESSIBLE OUTPUT CIRCUITS

If the output circuit of converter is operator accessible, it shall be an ES1 circuit according to the standard IEC 62368-1.

It is the sole responsibility of the installer to assure the compliance with the applicable safety regulations. For more information see T Series datasheet at [belfuse.com/power-solutions](http://belfuse.com/power-solutions).

## ISOLATION AND PROTECTIVE EARTHING

Protective earth pins no. 8 and 10 (⊕) are connected with the case. For safety reasons it is essential to connect at least one of these pins reliably to the protective earth of the supply system.

The electric strength test is performed in the factory as routine test in accordance with EN 62911 and IEC/EN 62368-1. The company will not honor any warranty claims resulting from incorrectly executed electric strength field tests. The resistance between earth pins 8 and 10 and case (<0.1 Ω) is tested as well. For more information see T Series datasheet at [belfuse.com/power-solutions](http://belfuse.com/power-solutions).

## FUSING

A fuse mounted inside the converter in input line L- protects against internal fault, see also Safety and Installation Instruction section in the T Series datasheet at [belfuse.com/power-solutions](http://belfuse.com/power-solutions).

### Fuse Specification

MODEL	FUSE TYPE	REFERENCE	RATING
LT1xxx	fast-blow	Schurter SPF	6.3 A, 250 V
UT1xxx	slow-blow	Schurter SPT	10 A, 250 V

Fuse size 5 × 20 mm

## SERVICING

The product(s) must be returned to the Authorized Bel Service Center for repair with a pre-assigned RMA number

## LIMITED WARRANTY

The company warrants each power supply of its manufacture for a period of two years from the date of original shipment. This warranty applies to defects in materials and workmanship that result in non-performance to published specifications. The product(s) must be returned to the Authorized Service Center for repair with a pre-assigned RMA number.

The company assumes no liabilities for consequential damages of any kind through the use or misuse of its products by any user. No other obligations are expressed or implied.

Please note that the specifications, terms, and conditions stated are subject to change without notice.

## INPUT AND OUTPUT CONNECTOR DETAILS

Refer to the T Series datasheet at [belfuse.com/power-solutions](http://belfuse.com/power-solutions).

## MECHANICAL DIMENSIONS AND MOUNTING REQUIREMENTS

Refer to the T Series datasheet at [belfuse.com/power-solutions](http://belfuse.com/power-solutions).

## ALLOWED MOUNTING POSITION

Make sure that there is sufficient airflow available for cooling and verify it by measuring the case temperature  $T_c$ , when the converter is installed and operated in the end-use application. The maximum specified case temperature  $T_{Cmax}$  must not be exceeded. See also Thermal Considerations in the T Series datasheet at [belfuse.com/power-solutions](http://belfuse.com/power-solutions).

## NUCLEAR AND MEDICAL APPLICATIONS

These products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

## TECHNICAL REVISIONS

The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.