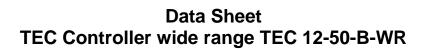
## **MESSTEC Power Converter GmbH**





## **Features**

Drives Peltier elements with high efficiency - low noise design

Extremely precise digital temperature controller

Standard temperature sensors with preset configuration

Arbitrary temperature sensors configurable by customer

Digital PID controller, tunable by customer

LEDs for status notification

Serial interface for configuration, controlling and monitoring

Analog output for actual temperature



Output ripple

Supply voltage 15.0 V ... 48.0 V, max. 50 V

Output voltage max 45 V
Output current max +/- 12 A

Temperature range TEC -100 °C ... +200 °C

Accuracy +/- 0.1 °C (with sensor PT100, PT1000)

< 1%

Internal resolution < 0.0001°C Peltier efficiency (d $\theta$ /d $\theta$ <sub>max</sub>) > 99.9%

Inputs

Sensor 4-wire / 2-wire connection

Enable TTL - impedance:  $10 \text{ k}\Omega$  - (default configuration: low active) Reset TTL - impedance:  $10 \text{ k}\Omega$  - (default configuration: low active) Temperature setpoint  $0 \text{ V} \dots 5 \text{ V} \text{ (-100 °C } \dots +200 \text{ °C)} \text{ - impedance: } 10 \text{ k}\Omega$ 

**Outputs** 

Ready TTL - (high or low active; Totem pole or open collector)
Status TTL - (high or low active; Totem pole or open collector)

Peltier element Terminal+, Terminal-

Actual Temperature 0 V ... 5 V (-100°C ... +200°C) – impedance: 100Ω

General specifications

Ambient temperature  $0 \dots +45 \,^{\circ}\text{C}$ Dimensions  $121 \times 87 \times 27 \,\text{mm}$ 

Weight 250 g

## Description

The TEC Controller TEC 12-50-B-WR is a controller and driver for Peltier elements. It is a temperature control system with extreme accuracy. The output ripple is very low due to extensive multistage filters. The output is short circuit proof. The supply voltage can be a standard industrial voltage with 24V or 48V or any other input voltage. The configuration for standard temperature sensors such as Pt100, PT1000 is already integrated. Other temperature sensors characteristic can be defined by the customer. The coefficients of the PID controller can be adjusted by the customer. The user can enter a temperature set-point as well as limits for the temperature, for the Peltier voltage and current. It can be operated via hardware inputs / outputs and / or via software control.

Туре	Description	Ordering code
TEC 12-50-B-U-WR	TEC 12A with USB interface	10100175
TEC 12-50-B-R-WR	TEC 12A with RS232 interface	10100176
USB cable adapter	USB Mini-B to SubD9F adapter	10385263
USB cable	USB 2.0: A to Mini-B cable	10385120
TEC Software	Control-Software for PC	31000055

Technical subjects to change without notice.

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