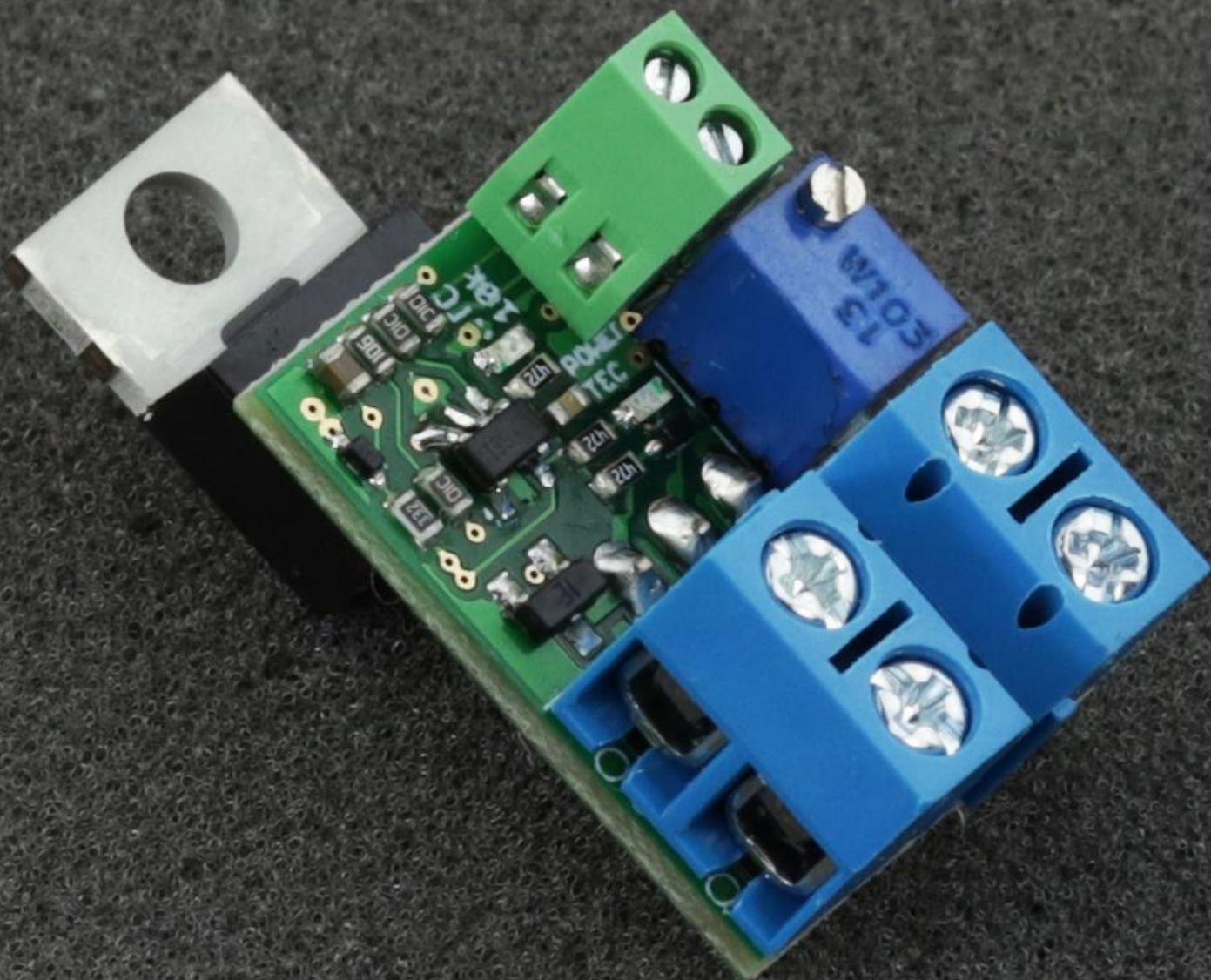


TEC-20A-30V

Operating Manual



Contact and Shipping:
Tomorrow's System Sp. Z o.o.

Okulickiego 7/9 hala G39
05-500 Piaseczno
Poland
tel.: +48 515 180 752

Company Information:
Tomorrow's System Sp. Z o.o.

Pułaskiego 125/35
15-337 Białystok
Poland
NIP: PL5423238556

Table of Content

Product Description.....	2
Technical Data.....	3
How to connect the TEC controller.....	3
Setting the temperature.....	4
Recommendations and requirements.....	5

Product Description



Tiny size and big operating currents make it possible to use this driver in almost any project. Temperature stabilization reaches ± 0.4 degrees Celsius accuracy. High current, wide voltage range and high accuracy in a device of only 16.5 x 25.5mm in size! The driver works in a cooling mode and uses voltage feedback from a 10k NTC thermistor.

Thanks to a two-layer board and wide paths it is possible to use TECs with up to 20A. Connectors allow to use maximum current of 13A so if there is a need to supply bigger Peltier cells, wires should be soldered directly into the driver's PCB.

It is possible to join TECs parallel or in series. Please remember that high current needs proper wiring with bigger cross section cables.

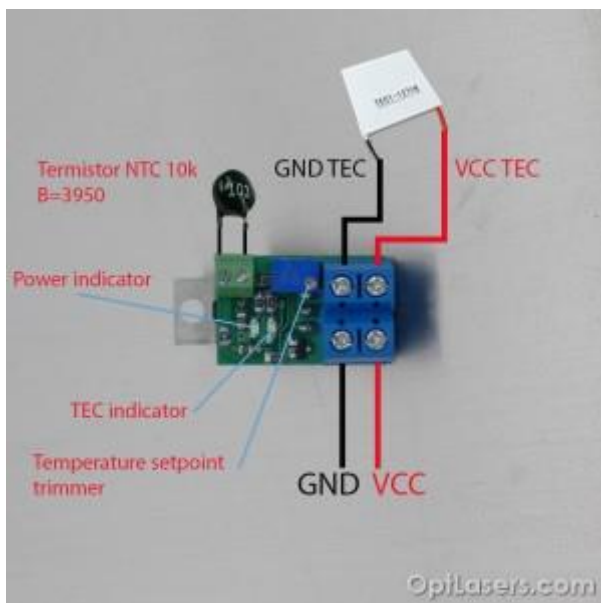
Maximum current flowing through the device depends on TEC used. Voltage dropout on a driver is very small so current can be predicted by reading labels on the TEC unit. For example, 12704 means 12V and 4A, whereas 12715 means 12V and 15A.



Technical Data

Supply voltage (V)	5 - 30
Dimensions (LxW mm)	16,5 x 25,5
Temperature sensor	10k NTC B3950
Temperature stabilization accuracy	$\pm 0,4^{\circ}\text{C}$
TEC indicator	YES - blue LED diode
Maximum current (A)	20
Power indicator	YES - green LED diode
Temperature range	10 - 40°C

How to connect the TEC controller



TECs can be connected parallel or in series. Please remember that high current needs proper wiring with bigger cross section of the cables.

Correct connection of power supply and other components is very important. Supply voltage must be kept within the limits of 5-30V. Incorrect connection can damage the driver.



The driver has a temperature sensor connector. It is recommended to use a NTC 10k sensor.

Setting the temperature

Before setting the temperature, the temperature sensor with a display (or pyrometer) and a screwdriver should be prepared.

1. Turn on the power (5-30V input).
2. If the blue LED state is high, rotate the potentiometer counterclockwise until the LED goes off.



3. Next, slowly rotate the potentiometer clockwise until the blue LED lights up, which means that TEC is running and temperature is decreasing. After reaching the desired temperature turn the potentiometer a little counterclockwise in order to make the blue LED off. By doing so, you can achieve a state of temperature balance. Exact temperature can be read thanks to a temperature sensor with a display or a pyrometer.
4. If the temperature is too high then rotate the potentiometer clockwise and wait until the LED starts blinking.

Check the temperature.



Recommendations and requirements

We recommend the use of power cables with a minimum cross-section of 1mm².

The MOSFET must be isolated from the heatsink/plate with a silicon pad as well as a plastic sleeve (included). Short circuit between MOSFET and heatsink/plate can damage the driver and can be dangerous for the device. MOSFET temperature should be monitored and cannot exceed 70 degrees Celsius.

