LASER LAB SOURCE
marketplace for **Scientists & Engineers**

manufactured for Laser Lab Source by OSTECH

10 Amp Thermoelectric Cooler Controller
180 Watts Output Power

10 Amp, 18 Volt Laser Diode Thermoelectric Cooler Controller

- Bipolar Output up to 10 Amps and 18 Volts
- Safety Features Protect the Thermoelectric Cooler from Over-Current and Over-Temperature Conditions
- Fast Acting Closed-Loop Feedback
- User-Programmable PID Parameters
- Highly Versatile Temperature Sensor Inputs

LASER DIODE TEC CONTROLLERS

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TEC-020 Laser Diode Thermoelectric Cooler Controller Overview

The TEC-20 model 180 Watt TEC controller provides fast and accurate temperature stabilization of Peltier devices used for cooling high power laser diodes. The controller drives up to 10 amps and 18 volts of bipolar power to the Peltier element being used to cool your laser or other temperature-critical device.

The full PID loop provides millidegree temperature stability, and can quickly stabilize high heat loads to the temperature set-point to reduce the risk of damage to your laser.

Simple GUI Interface and Powerful Programming Tools

Controller setup is fast and intuitive via the front panel LCD display and alphanumeric interface, with a simple to use menu structure and key pad. These systems come with standard an RS-232 interface. The included LabView driver GUI makes set-up and control of the system fast and simple. The controller can be ordered with a USB interface; contact us for more information.

TEC-020
REAR PANEL CONNECTIONS

Peltier Connector

SubD-15, female

IN.No	Abbr.	Function
1	PTS+	3. Temp PT100x Supply + 4-wire option [1]
2	PTI+	3. Temp PT100x Input + 4-wire option [1]
3	TEMP2	2. Universal Temp. Sensor Input vs. GND
4	AOUT	Analog Output 0..10V (Actual Temperature)
5	AIN	Analog Input 0..10V (Temperature Target)
6	LUFCND	Ground for Fan Supply
7;8	PEL+	Peltier element (+)
9	PTS-	3. Temp PT100x Supply - 4-wire option [1]
10	PTI-	3. Temp PT100x Input - 4-wire option [1]
11	TEMP1	1. Universal Temp. Sensor Input vs. GND
12	GND	Common Ground - N.C. To Screen
13	LUF	1..24V Supply, max. 500mA supports Fan and Other Loads
14;15	PEL-	Peltier element (-)
	SCR	Common Screen

[1] If you use PT100 with 3 wires than connect PTI- and PTS- together and in case you use PT100 with 2 wires than connect also PTI+ and PTS+.

RS232 Connector

SubD-9 female

Standard RS232-Connector
(No Null-Modem Cable !)
9600-Baud-8N1

PIN.No	Abbr.
2	RXD
3	TXD
5	GND

TEC-020
REAR PANEL LAYOUT

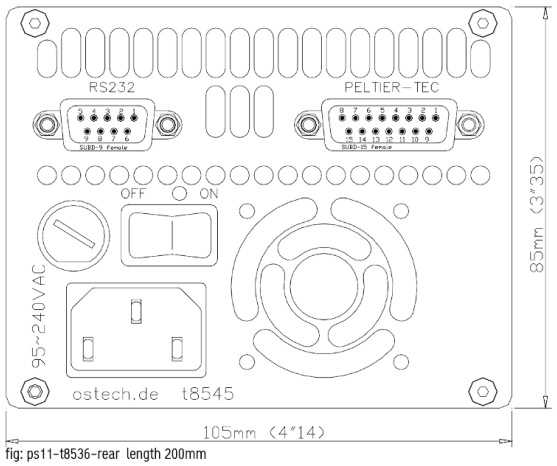


fig: ps11-t8536-rear length 200mm

Versatile Controller Features and Built-In Device Protection

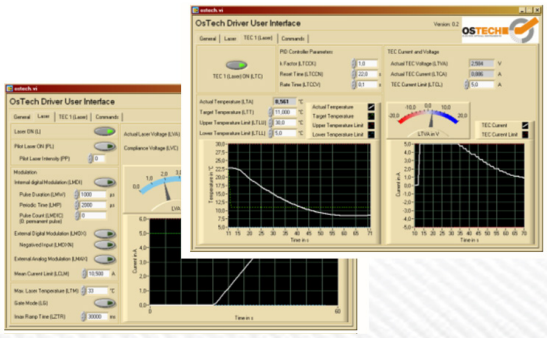
The TEC-020 includes thoughtfully designed safety features to protect your laser investment.

- Output to drive an external cooling fan, capable of supplying up to 500 mA at 24 V.
- Programmable temperature and current limts.

The TEC controller is equipped with two universal temperature sensor inputs, suitable for use with 10k Ohm NTC thermistors, and an additional 4-wire sensor input is available for use with a PT100 RTD temperature sensor.

These additional sensor inputs are used to control an auxiliary device, such as a heat-sink fan, or an external electro-optical device in laboratory or manufacturing testing applications. The auxiliary control is capable of 24 V and 500 mA output.

LABVIEW DRIVERS



TEC-020 Laser Diode Thermoelectric Cooler Controller Specifications

TEC CONTROLLER OUTPUT

- TEC Output Power Total: 180 Watts
- TEC Output Current Range (bipolar): ± 10.00 Amps
- TEC Output Voltage Range (bipolar) : ± 18.00 Volts
- TEC Control Loop Algorithm: Full P.I.D.
- P.I.D. Variables: User Adjustable (ships with factory pre-set variables)
- Temperature Accuracy: 0.01°C
- Temperature Control Stability (1 hour @ 25°C): 0.005°C
- TEC Setpoint Resolution: 0.01°C
- Temperature Range: -25°C to 150°C
- Hardware Design Topology: H-Bridge, Bipolar Peltier Controller

TEC PROTECTION FEATURES

- Peltier Element Protection: User Set Current Limit
- User Set Upper & Lower Temperature Limits

TEMPERATURE SENSOR

- 4-Wire RTD Capability (PT100, PT1000)
- Dual Universal Temperature Sensor Inputs
- Thermistors: All 2 Wire NTC Types: 10 kΩ, 100 kΩ

AUXILIARY FUNCTIONS

- External Fan Control Circuit, 1 - 24V, 500mA (max)
- Actual Temperature Monitor, Analog Output (0 - 10 V)
- Temperature Setpoint, Analog Input (0 - 10 V)

USER INTERFACE AND CONNECTORS

- Front Panel LCD, Full Alphanumeric Display with Key Pad
- RS232 Standard, LabView Drivers Included
- USB Optional: $95.00 (Option SVC-USB)
- Peltier Connector: SubD-15, Female
- RS232 Connector: SubD-9, Female

DIMENSIONS AND POWER

- 85 mm (Height) x 105 mm (Width) x 200 mm (Depth)
- 95 ~ 240 VAC, 50/60 Hz Universal Power Input

RECOMMENDED ACCESSORIES

- kab-39 Unterminated Connecting Cable -or- kab-231 Terminated Connecting Cable
- acc-417 USB-RS232 Converter

Product Sales and Service

Orders for this product are fulfilled by LaserDiodeControl.com, part of the Laser Lab Source group. It is manufactured for Laser Lab Source by OsTech, GmbH.

Product Warranty

This product is sold with a full one-year warranty. It is warrantied to be free from defects in material and/or workmanship for a period of one year from the date of shipment.

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