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

manufactured for Laser Lab Source by OSTECH

8 Amp Dual Thermoelectric Cooler Controller
128 Watts Power Per Channel

8 Amp, 16 Volt Dual Thermoelectric Cooler Controller for Laser Diode plus Non-Linear Crystal

- o Dual Channel Independent Controls
- o Current up to 12 A, Voltage up to 20 V
- o Simultaneous Temperature Control of Laser Diode and Non-Linear Crystals
- o Fast Acting Closed-Loop Feedback
- o User-Programmable PID Parameters
- o Highly Versatile Temperature Sensor Inputs

LASER
DIODE TEC
CONTROLLERS

Laser Lab Source
a division of Research Lab Source Corporation

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TEC-590 Dual Channel Thermoelectric Cooler Controller Overview

The TEC-590 dual output high power laser diode TEC controllers provide precise, simultaneous control of two Peltier coolers with independent fully programmable PID control loops. The controllerdelivers milli-degree temperature control stability from two separate 8 amp, 16 volt bipolar DC current outputs. One output and temperature sensor is typically used for the laser diode cooler and the second output is used to control the temperature of a crystal. Each controller has it's own feedback from a temperature sensor input.

Simple GUI Interface and Powerful Programming Tools

All TEC control parameters and all monitoring functions are accessible through the RS-232 or the optional USB interface. The graphical user interface offers a simple dashboard for laboratory and R&D environments, while the terminal software tools suite provide fast integration of the TEC-590 into laser systems or manufacturing applications.

TEC-590
REAR PANEL CONNECTIONS

Peltier Connector

SubD-15, female

IN.No	Abbr.	Function
1;2	CPEL+	2. Peltier element (+)
3	T2	2. Universal Temp. Sensor Input vs. GND
6	LUFCND	Ground for Fan Supply
7;8	LPEL+	1. Peltier element (+)
9;10	CPEL-	2. Peltier element (-)
11	T1	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	LPEL-	1. Peltier element (-)
	SCR	Common Screen

Power and Support Connector for o44 devices

SubD-9 male

PIN.No	Abbr.	Function
2	ILOCK-	Laser runs only on closed interlock
4;5	SUP+	Power Supply typ. +24V DC
7	ILOCK+	ca. 5mA over 2V, vs. ILOCK-
8;9	SUP0	Power Supply typ. 0V DC

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-590
REAR PANEL LAYOUT

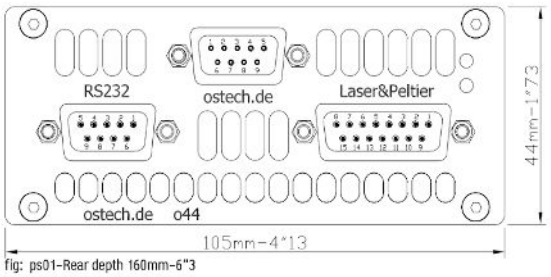


fig: ps01-Rear depth 160mm-6"3

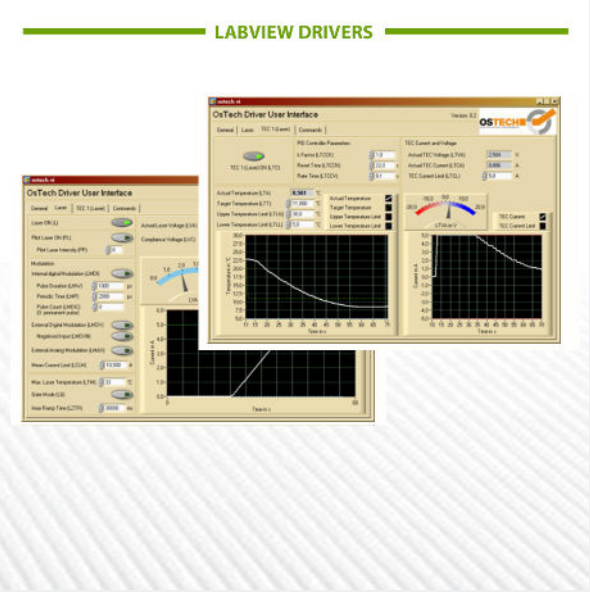
Versatile Controller Features and Built-In Device Protection

The TEC-590 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.
- Leads for the laser interlock to ensure the laser driver is switched on only when it is safe to do so.
- Programmable temperature and current limts.

High Speed Precision PID TEC Control Loop for Fast Temperature Settling

The TEC-590 Peltier element controllers come with preprogrammed PID control loop settings, set for optimal control of typical laser diode thermal loads. The proportional variable (gain) can be set using a simple linear scale of gain constants. In order to simplify setup and programming, the commands are prefixed with L for laser and C for crystal, respectively.



TEC-590 Dual Channel Thermoelectric Cooler Controller Specifications

2 X TEC CONTROLLER (PELTIER) OUTPUTS

- 2 x TEC Output Current Range (bipolar): ± 8.00 Amps (each)
- 2 x TEC Output Voltage Range (bipolar) : ± 16.00 Volts (each)
- TEC Control Loop Algorithm: Full P.I.D.
- P.I.D. Variables: User Adjustable (ships with factory pre-set variables)
- Temperature Control Stability (8 hours @ 25°C) : 0.005°C
- Temperature Range: -25°C to 150°C
- TEC Setpoint Resolution: 0.01°C
- Hardware Design Topology: H-Bridge, Bipolar

TEC PROTECTION FEATURES

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

TEMPERATURE SENSOR

- Dual Temperature Sensor Inputs
- Thermistors: All 2 Wire NTC Types: 10 kΩ, 100 kΩ

AUXILIARY FUNCTIONS

- External Fan Control Circuit, 1 - 24V, 500mA (max)
- Electronic Safety Interlock

USER INTERFACE AND CONNECTORS

- RS232 Standard, LabView Drivers Included
- USB Optional: $95.00 (Option SVC-USB)
- Peltier Connector: SubD-15, Female
- Power and Support Connector: SubD-9, Male
- RS232 Connector: SubD-9, Female

DIMENSIONS AND POWER

- 44 mm (Height) x 105 mm (Width) x 160 mm (Depth)
- 24V DC Power Input

RECOMMENDED ACCESSORIES

- kab-39 Unterminated Connecting Cable -or- kab-231 Terminated Connecting Cable
- nt-82 24 VDC / 90 W Power Supply
- 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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