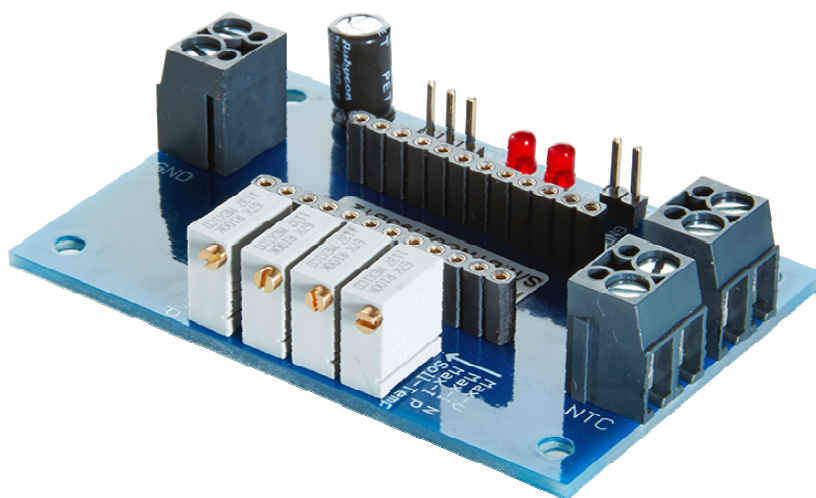# User Manual

PL-TEC BOB

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FOCUSSING POWER TO THE POINT

PL-TEC BOB

Experimental Board for PL-TEC 1-0305

- Compatible with PL-TEC 1-0305
- Parameters adjustable with on-board potentiometer
- Connectors for monitoring temperature and current
- Over- and undertemperature LEDs
- Shutdown function

Product Description

The PL-TEC BOB provides an easy access to all control signals of the PL-TEC temperature controller. It is designed for experimental use of the PL-TEC controller.

With four potentiometers the maximum positive and negative TEC current, the maximum TEC voltage and NTC temperature are adjustable.

To connect the TEC and the NTC two screw terminals are provided.

The pinheads can be used to monitor the temperature and the current. Two LEDs indicate an over- and an undertemperature.

A further pinhead is intended to connect a shutdown signal.

The BOB must be connected to a 5 V power supply to supply the BOB and the PL-TEC with power.

Technical Data*

|	
Supply voltage	+5 V, 3 A DC
Shutdown input	0 .. 5 V TTL **
Current monitor	0 .. 3 V **
Temperature monitor	0 .. 3 V **
Dimensions in mm	45 x 67 x 17
Weigth	22 g
Operating temperature	-20 to +55 °C

* Technical data is subject to change without further notice.
** See manual of PL-TEC 1-0305 for details.

Compatible Products: PL-TEC 1-0305

Elements of the Breakout Board (BOB)

The BOB implements the typical operating environment of the PL-TEC 1-0305 as explained in the user manual. The following graphic gives an overview of all connectors and elements of the BOB.
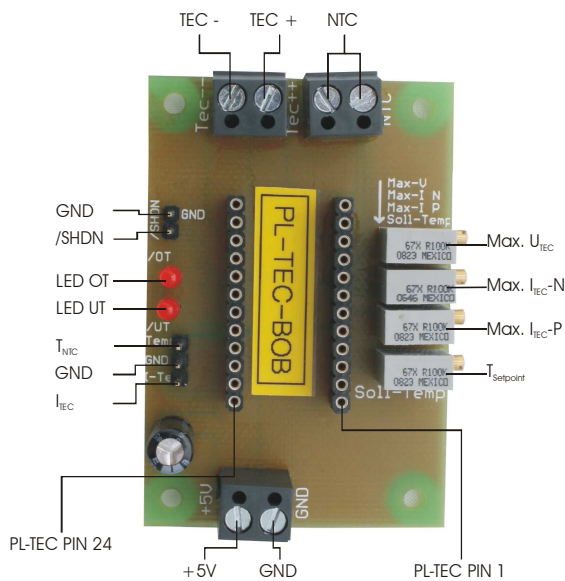
Power supply connector:	+5 V / GND
NTC connector:	Connect to the NTC
TEC connector:	Connect to TEC module. Pay attention to correct polarity!
Poti $T_{Setpoint}$:	Adjusts NTC temperature setpoint
Poti Max. I_{TEC}-P:	Adjusts maximum positive TEC current limit
Poti Max. I_{TEC}-N:	Adjusts maximum negative TEC current limit
Poti Max. U_{TEC}:	Adjusts maximum TEC voltage limit
LED OT:	Indicates overtemperature
LED UT:	Indicates undertemperature
Pin header /SHDN:	Shutdown input
Pin header I_{TEC}:	TEC current monitor output
Pin header T_{NTC}:	NTC temperature monitor output

How to get started

What to do	How to do it
Adjust TEC voltage and current limit potis according to the used TEC module	- See PL-TEC manual for the required resistor values. - Connect an ohmmeter between ground and pin 6, 7 and 17 of the PL-TEC connector respectively. - Adjust potis to the desired values with help of the ohmmeter. - Disconnect ohmmeter.
Mount PL-TEC	Pay attention to the correct alignment (pin 1).
Connect power supply and apply power	Connect +5 V / 3 A power supply to power connector. Pay attention to correct polarity!
Adjust $T_{Setpoint}$ poti	- Connect voltmeter between ground and pin 3 of the PL-TEC connector. - Adjust $T_{Setpoint}$ poti to the desired setpoint voltage. See PL-TEC user manual for detailed information. - Disconnect voltmeter.
Disconnect power supply	
Connect TEC	Pay attention to correct polarity.
Connect NTC	No polarity required.
Connect power supply and apply power	
Watch I_{TEC} and T_{NTC} outputs	Connect Voltmeter to the according pin header. For detailed information about the scale of the monitor outputs see PL-TEC user manual.