

## PL-TEC 2-1024

### Fully digital controlled Driver for TEC Modules

Rev. 1905



### Product Description

The PL-TEC 2-1024 is a very small, safe, and most accurate temperature controller for Peltier thermoelectric cooler (TEC) modules.

An ultra low-drift chopper amplifier maintains  $\pm 0.001$  K temperature stability. Output current, rather than voltage, is directly controlled to eliminate current surges. Individual heating and cooling current limits and voltage limits provide the highest level of TEC protection.

The PL-TEC 2-1024 operates from a single supply and provides a single bipolar  $\pm 10$  A output or two independent  $\pm 5$  A outputs (user selectable with a switch). The bipolarity of the TEC is realized through the outputs of four synchronous buck regulators. Therefore, it is possible to keep the temperature constant even by low load currents without "dead zones" or other nonlinearities.

An analog control signal precisely sets the TEC temperature. The actual TEC temperature and current can be monitored over the control interface. In addition, separate over- and under-temperature information can be monitored over the digital interface. An on-chip voltage reference provides bias for a thermistor bridge.

Through the new efficient design, just the baseplate of the PL-TEC 2-1024 needs to be cooled. Additional forced air cooling is not necessary.

- Bipolar  $\pm 10$  A or dual  $\pm 5$  A output
- Temperature stability up to 0.001 K
- Adjustable TEC current and voltage limiting to protect TEC module
- Direct TEC temperature control
- Low ripple and low noise design
- Multiple monitoring outputs

### Technical Data\*

<u>Single output mode</u>	
Output current	Bipolar 10 A
Output current limiting	Heating 0 .. 10 A
Range	Cooling 0 .. 10 A
	User settable via interface
<u>Dual output mode</u>	
Output current	Bipolar 5 A, each
Output current limiting	Heating/cooling each
Range	channel independent:
	0 .. 5 A
Max. output voltage	-24 .. +24 V
Output voltage limiting	Heating/cooling independent
Range	0 .. 24 V user settable
<u>Both operation modes:</u>	
Supply voltage	+12 .. +50 V, min. 2 V above TEC voltage
Temperature stability	0.001 K
Thermistor inputs	A) NTC 10k/NTC100k B) PT100 C) NTC 10k/NTC100k D) PT100
Temperature set point	0 .. 5V (each channel) or via digital interface Via digital interface
Monitor outputs	
Power dissipation	< 45 W
Dimensions in mm	60,9 x 57,8 x 29
Weight	194 g
Operating temperature	0 to + 55 °C

\* Technical data is subject to change without further notice.

Optional Accessories: PLB-21