

Laser Diode Driver & Dual TEC Controller

LPS1-2T Series

Microprocessor-
Controlled

The LPS1-2T is a very compact microprocessor-controlled laser diode driver with dual temperature controller. It offers many advanced and unique features at a very competitive price.

The device can drive up to three infrared laser diodes in series or one blue laser diode. Different models of the LPS1-2T are available, depending on the maximum laser diode current. All devices feature constant current as well as constant power modes. Current limits, voltage limits and a soft-start delay can be set. A safety interlock is also implemented.

The LPS1-2T is very easy to use. All parameters can be programmed through the symbolic self-explanatory controls. The two-line matrix display shows set values and actual values at the same time.

ALPHALAS has implemented a novel switch-mode topology to achieve high efficiency, low thermal dissipation and a very compact design. A unique combination of analog and digital control guarantees very low current noise and high reliability.



Features

- Microprocessor-Controlled with Fully Programmable Parameters and Two-Line Matrix Display
- Easy to Use with Self-Explanatory Operational Controls
- Current Limits, Voltage Limits, Soft-Start, Safety Interlock
- Very Low Current Noise
- High Reliability
- Const. Current & Const. Power Modes
- Drives Multiple Laser Diodes in Series
- Very Compact Design

Display Data

- Laser Diode Current
- Laser Diode Current Limit
- TEC Current 1 & 2
- TEC Current Limit 1 & 2
- Laser Diode Temperature 1 & 2
- Laser Diode Voltage
- Laser Diode Voltage Limit
- Operating Mode (Const. Current/ Const. Power)
- Optical Power (Relative Units)
- Soft-Start Delay (Relative Units)

LPS1-2T Series: Electrical Specifications

| | | | |
|---|--|------------------|-------------------|
| Voltage and Current Requirements | LPS1-2T: 12 V DC, 5 - 8 A Optional AC/DC Adapter: Universal Input, 100 - 240 V AC (may differ, model dependent) | | |
| Power Consumption | Depends on the Laser, 50 - 100 W | | |
| Conversion Accuracy | D/A: 12 bit, A/D: 12 bit | | |
| Laser Diode Current (model dependent, other hardware current limit may be factory preset) | LPS1-2T-L | LPS1-2T-E | LPS1-2T-HP |
| | 0 - 2.5 A | 0 - 4.0 A | 0 - 8.0 A |
| Laser Diode Voltage (model dependent, programmable) | max. 7 V | max. 6.5 V | max. 6 V |
| Current Noise, rms | 60 μ A | | |
| TEC Controllers | Two Controllers, 4 A, 8 V each, cooling mode only | | |
| TEC Temperature Range (programmable) | TEC 1: 0°C - 99.9°C (hardware high temperature limit can be factory preset, default is 38°C) TEC 2: 0°C - 99.9°C (no hardware high temperature limit) | | |
| Temperature Stability | 0.1°C | | |
| Remote Control | Proprietary PC Serial Interface | | |

LPS1-2T Series: Mechanical Specifications

| | |
|--|--|
| LPS1-2T Dimensions | 105 x 70 x 200 mm ³ (WxHxL) |
| Optional AC/DC Adapter Dimensions | 100 x 67 x 32 mm ³ (WxHxL) (may differ, model dependent) |
| Ambient Temperature | 5°C .. 35°C (41°F .. 95°F) |

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