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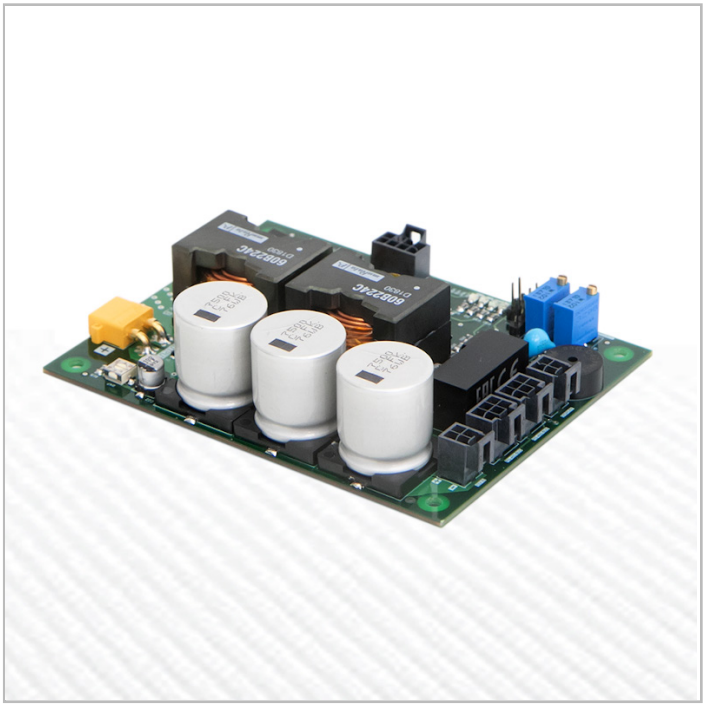
LASER ELECTRONICS

Pulsed OEM Laser Diode Controller
Pulsed 50A Laser Output, 50W TEC Controller



Part Number SDC-50A
Pulsed Laser Diode Controller

- o High Stability, High Accuracy Output
- o User-Adjustable 25 µs to 500 µs Pulse Width
- o 50 Amp Maximum Output, Adjustable
- o RS-485 or Stand-Alone Modes of Operation
- o 50 Watt TEC Controller, with10 kΩ NTC Thermistor Feedback
- o Compact and Space-Efficient Design

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SDC-50A PULSED OEM LASER DIODE CONTROLLER

The SDC-50A is a compact pulsed laser diode driver: it is a fast-switching, accurate, efficient, and low-noise current source. It was developed specifically to drive pump laser diodes for microchip Nd:YAG lasers and other diode-pumped lasers. This is a QCW pulsed-mode only driver.

VERSATILE CONTROL MODES FOR APPLICATION FLEXIBILITY

The controller is easily configured via RS-485 interface. The user sets the pulse width and frequency, output current, temperature set point, and temperature stabilization mode. The operational control mode is set either to RS-485 mode or Stand-Alone mode:

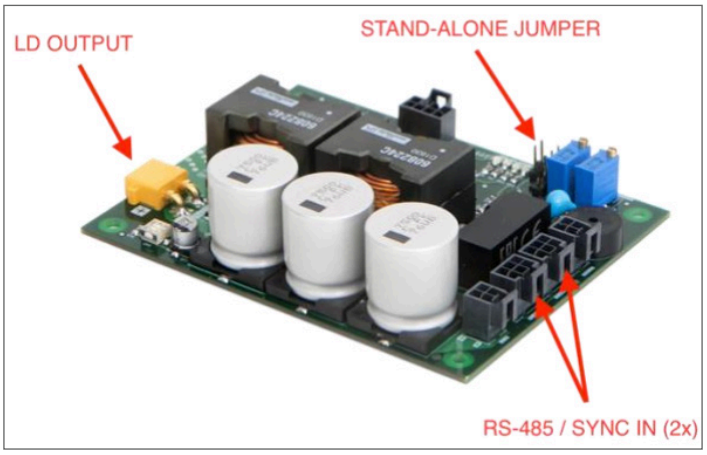
- RS-485 mode – requires active RS-485 connection, and all the controls are performed by commands sent via RS-485 interface. The command list is short and intuitive, and provides full control of the SDC-50A.
- Stand-Alone mode – doesn't require the active RS-485 connection; the SDC-50A begins operating immediately after the power is applied to the board, and operates per the parameters set in the device memory. An RS-485 connection is required to program the controller for stand-alone mode.

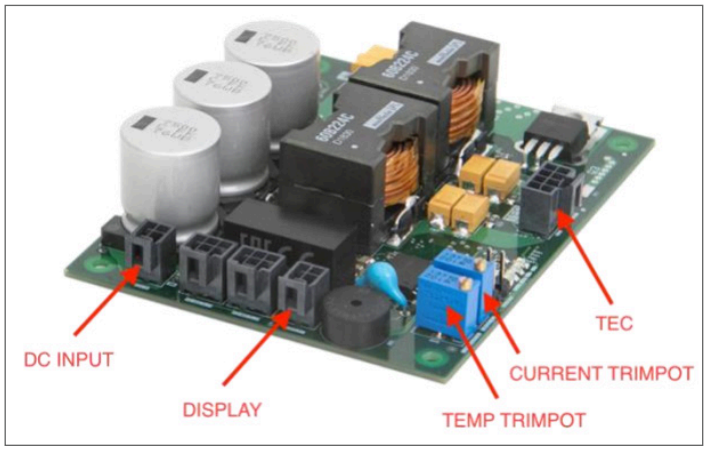
THREE MODES TO SYNCHRONIZE PULSE FREQUENCY AND DURATION

The pulse output can be synchronized in three ways: from the internal clock; the pulse is triggered by an external signal and the pulse width is equal to external synchronization signal duration; the pulse is triggered externally, and with the pulse width is set by the value programmed in device memory.

BUILT-IN HIGH POWER TEMPERATURE CONTROLLER

An integrated 5 Amp / 10 Volt Peltier controller allows control of high power thermoelectric coolers for laser diode temperature stabilization laser during operation. The feedback temperature sensor input is for 10 kΩ NTC thermistors (Negative Temperature Coefficient). The set point temperature is factory set at 25ºC.





LASER DIODE OUTPUT SPECIFICATIONS

- Maximum Output Current: 50 Amps
- Maximum Output Voltage: 4 to 6 Volts (with 12 VDC to 15 VDC Input Respectively)
- Output Mode: Pulsed / QCW
- Pulse Width: 50 µs to 500 µs *
- Pulse Repetition Rate: Up to 50 Hz *
- Rise / Fall Time: < 25 µs / < 15 µs
- Output Accuracy: 1%
- Output Stability: 1%
- * Can Be Factory Modified; Inquire for Details

TEC OUTPUT SPECIFICATIONS

- Maximum TEC Current: 5 Amps
- Maximum TEC Voltage: 10 Volts
- TEC Temperature Control Range: 10°C to 40°C
- TEC Temperature Control Accuracy / Stability: 0.1°C
- TEC Temperature Sensor Input: 10 kΩ NTC Thermistor

CONTROL MODES

- RS-485 Mode: Real-time control of the SDC-50A by RS-485 interface.
- Stand-Alone Mode: Control settings saved in on-board memory.
- On-Board Control: Current and temperature set with trimpots.

THREE PULSE SYNCHRONIZATION MODES

- Fully Internal: Pulses triggered by internal clock.
- Fully External: Pulses width is set and triggered by external signal.
- External Trigger: Pulse is triggered externally, pulse width set by the value programmed in device memory.

GENERAL SPECIFICATIONS

- Input Voltage: 12 VDC to 15 VDC
- Operating Temperature: 10°C to 40°C
- Storage Temperature Range: -20°C to 60°C
- Humidity: 0 to 90%, Non-Condensing
- Size: 95 mm x 75 mm x 30 mm
- Weight: 0.1 kg

PRODUCT SALES AND SERVICE:

Orders for this product are fulfilled by Laser Lab Source in North America and select international regions. It is manufactured by OEM Tech, Belarus.

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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