



## Precision Pulse Control

The Mini-200 is a compact and lightweight pulsed current source designed to drive laser diodes, bars, arrays, or any low-impedance load. The key specifications are output current from 25 A to 200 A, rise and fall times below 10  $\mu\text{s}$  at 200 A, pulse widths from 25  $\mu\text{s}$  to 250  $\mu\text{s}$ , forward voltage from 0 V to 48 V, and pulse repetition rate from single shot to 200 Hz.

## System Operation

The Mini-200 output current may be set with an internal potentiometer or an analog voltage. The pulse width is controlled with the input trigger signal.

The system requires two DC voltages for operation, 12 V and compliance voltage equal to 12 V above the laser diode's forward voltage.

## Output Cable

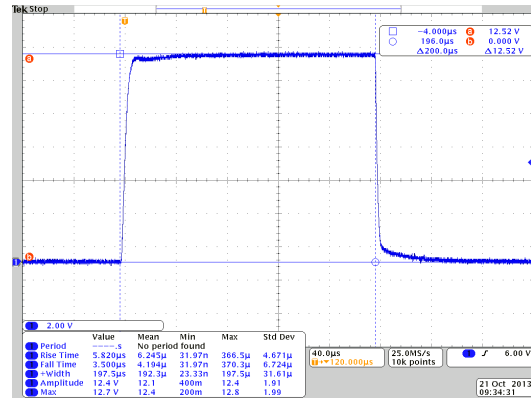
The laser or load is connected to the Mini-200 with 22 AWG twisted pair cable (included) with a length of 15 cm (6 inches) or less.

## What is included?

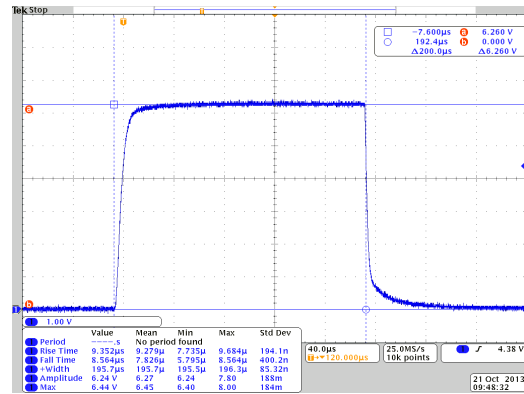
- Mini-200** Mini-200 Pulser
- DC Input Cable
- Output Cable
- Control Signal Cable

## Ordering Information

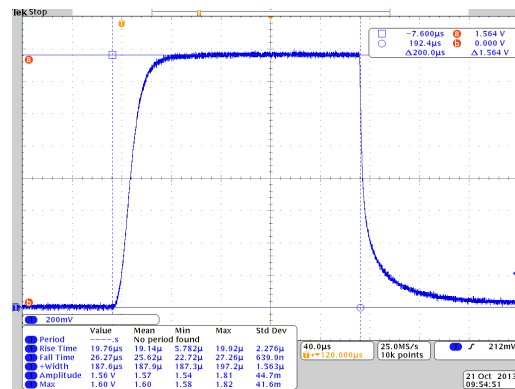
Mini-200



200 A, 25 V compliance, 20 Hz, 200  $\mu\text{s}$  pulse width



100 A, 19 V compliance, 20 Hz, 200  $\mu\text{s}$  pulse width



25 A, 14 V compliance, 20 Hz, 200  $\mu\text{s}$  pulse width

## Pulse Amplitude

|                        |  |
|------------------------|--|
| Output Current Range   | 25 A to 200 A  |
| Setpoint Accuracy      | ±1 % of full scale current   |
| Current Overshoot      | < 0.1 %  |
| Current Rise/Fall Time | $\leq 300 \mu\text{s}$ : 2 A $\leq$ current setpoint $\leq$ 5 A<br>$\leq 100 \mu\text{s}$ : 5 A $\leq$ current setpoint $\leq$ 10 A<br>$\leq 55 \mu\text{s}$ : 10 A $\leq$ current setpoint $\leq$ 15 A<br>$\leq 45 \mu\text{s}$ : 15 A $\leq$ current setpoint $\leq$ 20 A<br>$\leq 40 \mu\text{s}$ : 20 A $\leq$ current setpoint $\leq$ 40 A<br>$\leq 30 \mu\text{s}$ : 40 A $\leq$ current setpoint $\leq$ 60 A<br>$\leq 20 \mu\text{s}$ : 60 A $\leq$ current setpoint $\leq$ 80 A<br>$\leq 16 \mu\text{s}$ : 80 A $\leq$ current setpoint $\leq$ 140 A<br>$\leq 10 \mu\text{s}$ : current setpoint > 140 A |
| Polarity               | Positive   |
| Forward Voltage        | 0 V to 48 V  |

## Trigger (J1-Pin 6)

|                            |   |
|----------------------------|---|
| Frequency Range            | $\leq 200 \text{ Hz}$ * See SOA graphs on next page |
| Input Voltage Levels       | 0 V, output off<br>5 V, output on                   |
| Termination impedance      | 50 $\Omega$   |
| Trigger pulse width        | 25 $\mu\text{s}$ to 250 $\mu\text{s}$               |
| Delay (external to output) | $\leq 1 \mu\text{s}$ (typical)                      |

## Current Setpoint Control (J1-Pin 4)

|                         |  |
|-------------------------|--|
| Input Voltage Levels    | 5 V or open : internal potentiometer control<br>0 V : external control |
| Termination impedance   | 9,000 $\Omega$   |
| Response time on change | $\leq 0.5 \mu\text{s}$   |

## Analog Current Setpoint (J1-Pin 5)

|                         |  |
|-------------------------|--|
| Input Voltage Levels    | 0 V to 2.048 V<br>0.000 V = 0 A output<br>2.000 V = 200 A output |
| Termination impedance   | 90,000 $\Omega$  |
| Response time on change | $\leq 0.5 \mu\text{s}$   |

## Current Monitor

|                             |  |
|-----------------------------|--|
| Current monitor             | 0 V to 0.500 V<br>200 A output current = 0.500 V (typical) |
| Current monitor termination | 50 $\Omega$  |
| Current monitor connector   | SMB  |

## Control Signal Connector (J1)

|           |                          |
|-----------|--------------------------|
| Connector | Molex # 70553-0110       |
| Pin 1:    | 12 V DC                  |
| Pin 2:    | 12 V return              |
| Pin 3:    | 12 V return              |
| Pin 4:    | Current setpoint control |
| Pin 5:    | Analog current setpoint  |
| Pin 6:    | Trigger                  |

## Output Connector (J6)

|           |                    |
|-----------|--------------------|
| Connector | Molex # 22-12-2024 |
| Pin 1:    | Out +              |
| Pin 2:    | Out -              |

## 12 V Power Specifications (J1-Pin 1)

|                      |                  |
|----------------------|------------------|
| Voltage requirements | 12 V DC $\pm$ 5% |
| Current requirements | 0.100 A          |

## DC Input Connector (J2)

|           |                    |
|-----------|--------------------|
| Connector | Molex # 22-12-2024 |
| Pin 1:    | DC +               |
| Pin 2:    | DC -               |

## DC Input Power Specifications

|                      |  |
|----------------------|--|
| Voltage requirements | forward voltage + 12 V DC $\pm$ 5% <sup>*1</sup> |
| Voltage Range        | 12 V DC to 60 V DC                               |
| Current requirements | 5.0 A  |

<sup>\*1</sup> Operation of instrument outside of this voltage can cause permanent damage to the instrument and/or load.

## General

|                         |   |
|-------------------------|---|
| Size (HxWxD)            | 11.3 cm x 12.65 cm x 5.4 cm<br>(4.425" x 4.975" x 2.125") |
| Weight                  | 0.5 kg<br>(16 oz)   |
| Mounting hole diameter  | 4.5 mm<br>(0.180")  |
| Mounting hole placement | 3.49 cm x 11.6 cm<br>(1.375" x 4.575")                    |
| Operating Temperature   | 10°C to 40°C  |
| Cooling                 | Convection air cooled                                     |

## Notes

Warranty—One year parts and labor on defects in materials and workmanship.

The Mini-200 current source meets or exceeds these specifications.

All specifications are measured with 10 cm of 22 AWG twisted pair wire connecting the Mini-200 to a low impedance/inductance load (HPL-2400-1.00 and HPL-2400-0.063).

Specifications subject to change without notice.

