

PIM-Mini-200 Pulsed Current Source — Datasheet



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 μ s at 200 A, pulse widths from 25 μ s to 250 μ 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

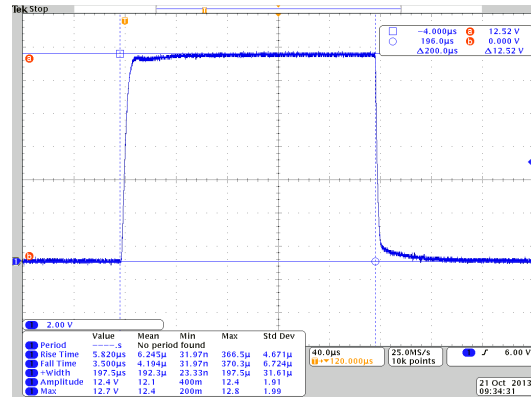
The laser or load is connected to the Mini-200 with 22 AWG twisted pair cable (included) with a length of 15 cm (6 inches) or less.

What is included?

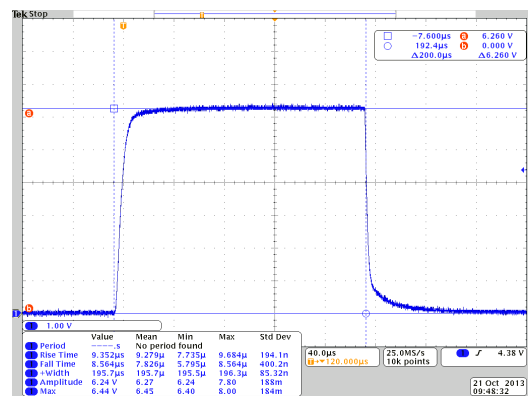
- Mini-200
- Mini-200 Pulser
- DC Input Cable
- Output Cable
- Control Signal Cable

Ordering Information

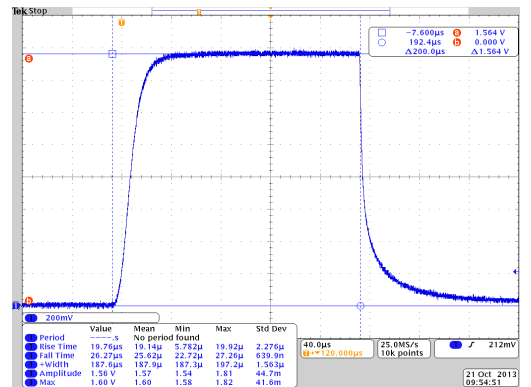
Mini-200



200 A, 25 V compliance, 20 Hz, 200 μ s pulse width



100 A, 19 V compliance, 20 Hz, 200 μ s pulse width



25 A, 14 V compliance, 20 Hz, 200 μ 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 $\leq 100 \mu\text{s}$: 5 A \leq current setpoint \leq 10 A $\leq 55 \mu\text{s}$: 10 A \leq current setpoint \leq 15 A $\leq 45 \mu\text{s}$: 15 A \leq current setpoint \leq 20 A $\leq 40 \mu\text{s}$: 20 A \leq current setpoint \leq 40 A $\leq 30 \mu\text{s}$: 40 A \leq current setpoint \leq 60 A $\leq 20 \mu\text{s}$: 60 A \leq current setpoint \leq 80 A $\leq 16 \mu\text{s}$: 80 A \leq current setpoint \leq 140 A $\leq 10 \mu\text{s}$: 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 5 V, output on
Termination impedance	50 Ω
Trigger pulse width	25 μs to 250 μs
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 0 V : external control
Termination impedance	9,000 Ω
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 0.000 V = 0 A output 2.000 V = 200 A output
Termination impedance	90,000 Ω
Response time on change	$\leq 0.5 \mu\text{s}$

Current Monitor

Current monitor	0 V to 0.500 V 200 A output current = 0.500 V (typical)
Current monitor termination	50 Ω
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% ^{*1}
Voltage Range	12 V DC to 60 V DC
Current requirements	5.0 A

^{*1} 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 (4.425" x 4.975" x 2.125")
Weight	0.5 kg (16 oz)
Mounting hole diameter	4.5 mm (0.180")
Mounting hole placement	3.49 cm x 11.6 cm (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.

