PCX-7500-LIV

Pulsed Current Source - Datasheet

Precision Pulse Control

The PCX-7500-LIV is an air-cooled, high power current source designed to drive laser diodes, bars, and arrays. The output current can be set from 10 A to 450 A, compliance voltage dependant on the model of system. The pulse width is adjustable between 4 µs to 5,000 µs, with a frequency of 8 Hz to 10,000 Hz.

Ease of Setup and Operation

The PCX-7500-LIV may be operated through its intuitive front panel controls. The color QVGA LCD provides immediate visual confirmation of all operating parameters, including pulsed current set points, internal trigger pulse width, internal trigger frequency, and error/fault messages.

Complete System Integration

For automated applications, complete control of the instrument is provided through RS-232, USB and Ethernet computer interfaces. Up to four system configurations may be stored in internal non-volatile memory, providing instant recall of frequently-used configurations.

Low Inductance Output Cable

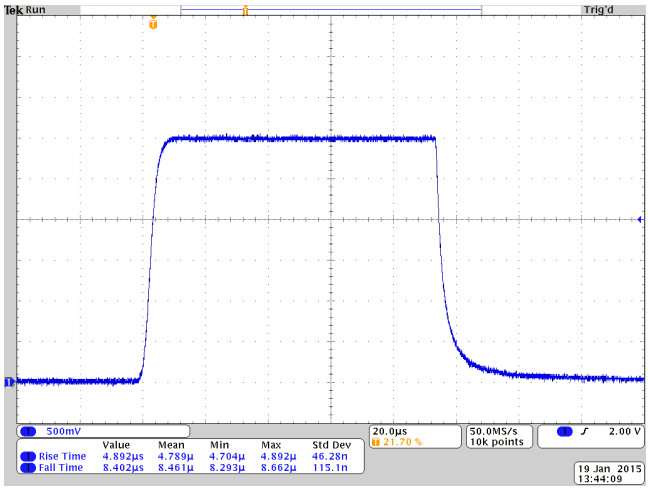
The laser diode is connected to the PCX-7500-LIV through a low impedance strip line cable, designed to preserve the fidelity of high-speed current pulses. The output connector is interlocked, so that the PCX-7500-LIV is disabled when the connector is removed.

Internal or External Triggering

Conveniently located front panel BNC connectors allow the PCX-7500-LIV to be externally triggered and synchronized for specialized interconnected equipment applications. The input impedance of the trigger is selectable to either 50 Ω or 10,000 Ω. The synchronization output pulse is synchronized to the leading edge of the output current pulse and is active with internal or external trigger.

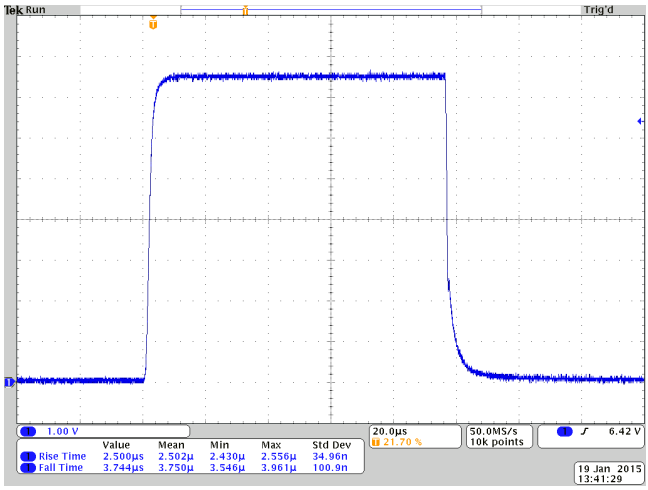
Ordering Information

PCX-7500-LIV-xxxx	See models on next page
6045-0070	Output Stripline Cable



PCX-7500-LIV-5

1 A, 3 V compliance, 8 Hz, 96 µs pulsewidth



PCX-7500-LIV-12

60 A, 7.5 V compliance, 8 Hz, 96 µs pulsewidth

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Pulse Amplitude

Output Current Range	0 A to 60 A
Setpoint Resolution	0.025 A
Setpoint Accuracy	± 0.1 % of full scale current
Current Overshoot	< 0.1 % of full scale current
Current Rise/Fall Time	≤ 100 µs for 0 A ≤ current setpoint ≤ 1 A ≤ 15 µs for 1 A < current setpoint ≤ 10 A ≤ 10 µs for current setpoint > 10 A
Polarity	Positive
Compliance Voltage	Depends on model
Maximum Output Power	Up to 1000 W, depends on model

Internal Trigger

Frequency Range	8 Hz to 10,000 Hz
Frequency Resolution	1 Hz from 8 Hz to 299 Hz 100 Hz from 300 Hz to 10,000 Hz
Frequency Accuracy	± 1 %
Tjit(cc) (cycle to cycle jitter)	≤ 0.025 µs
Pulse Width Range	4 µs to 5,000 µs
Pulse Width Resolution	32 µs from 8 Hz to 30 Hz 8.0 µs from 31 Hz to 122 Hz 2.0 µs from 123 Hz to 500 Hz 0.5 µs from 501 Hz to 10,000 Hz
Pulse Width Accuracy	± 0.5 µs

External Trigger

Frequency Range	≤ 10,000 Hz
Input Voltage Levels	0 V, output off 5 V, output on
Trigger Pulse Width	5 µs to 5,000 µs
Delay (external to output)	≤ 1 µs (typical)
Termination Impedance	50 Ω or 10,000 Ω
Connector	BNC

Output Connector

Output Connector	DB37 pin Female Pin 1 to 16 = Out + Pin 20 to 35 = Out – Pin 18 and 19 cable present loopback All other pins not connected

Control Signals

Sync Termination	50 Ω
Sync Connector	BNC
Current Monitor	0 V to 0.500 V 60 A output current = 0.472 V (typical)
Current Monitor Termination	50 Ω
Current Monitor Connector	BNC
Voltage Monitor	0 V to 0.920 V 50 V to output = 0.375 V (typical)
Voltage Monitor Termination	1 MΩ
Voltage Monitor Connector	BNC

Computer Interfaces

Supported Interfaces	RS232, Ethernet, USB
USB Driver Support	Windows 8, Windows 7, Windows XP, Linux, and Mac OS X

Power Specifications

Voltage requirements	100 VAC to 120 VAC ± 10% 220 VAC to 240 VAC ± 10%
Line frequency	50 Hz to 60 Hz
Power requirements	1800 W
Connector Type	NEMA L5-20 to IEC 320-C19

General

Size (HxWxD)	15 cm x 44 cm x 54 cm
Weight	20 kg
Operating Temperature	15 °C to 35 °C
Cooling	Air cooled

Available Models

Model #	Compliance Voltage[*1]	Max Output Power[*1]
PCX-7500-LIV-5	0 V to 5 V	100 W
PCX-7500-LIV-12	5 V to 12 V	225 W
PCX-7500-LIV-17	12 V to 17 V	400 W
PCX-7500-LIV-24	17 V to 24 V	450 W
PCX-7500-LIV-30	24 V to 30 V	600 W
PCX-7500-LIV-38	30 V to 38 V	700 W
PCX-7500-LIV-48	38 V to 48 V	700 W
PCX-7500-LIV-54	48 V to 54 V	700 W
PCX-7500-LIV-62	54 V to 62 V	700 W
PCX-7500-LIV-66	62 V to 66 V	700 W
PCX-7500-LIV-73	66 V to 73 V	700 W
PCX-7500-LIV-78	73 V to 78 V	750 W
PCX-7500-LIV-86	78 V to 86 V	800 W
PCX-7500-LIV-94	86 V to 94 V	900 W
PCX-7500-LIV-102	94 V to 102 V	950 W
PCX-7500-LIV-110	102 V to 110 V	1000 W

[*1] Operation of an instrument outside of the listed compliance voltage and maximum power limits can cause permanent damage to the instrument and/or load. Please see SOA graphs in manual for more information.

Notes

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

The PCX-7500-LIV current source meets or exceeds these specifications.

All specifications are measured with a low inductance strip line interconnect cable connected to a HPL-2400 (low inductance high power resistive load).

Specifications subject to change without notice.

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