



Optical Finesse μ LC200-12

Two-Channel USB Liquid-Crystal Controller

The μ LC200-12 is a versatile, low-cost, dual-channel liquid-crystal controller, designed to run continuously-variable LC devices such as variable retarders, polarization switches, shutters, attenuators, and tunable color filters.

The μ LC200-12 is a USB bus-powered device with two independent LC channels, each with 12 V_{RMS} of range. The channels are capable of operating either AC (carrier) or DC (carrier-less), and can drive cells up to 600 nF of capacitance.



The controller is operated by our **LCDriver2** application via a full-speed, USB 2.0 compliant interface. The application permits dynamic editing of AC or DC programs up to 96 lines in length. A separate tab of **LCDriver2** permits simple amplitude control of the LC channels in AC mode. A device-driver DLL toolkit is provided to permit user programming of the μ LC200-12.

Three trigger modes (internal, line, program) determine how program lines are executed. An opto-isolated External Trigger line is provided on the mini-DIN6 receptacle. The LC outputs are isolated from the USB bus, which means that the μ LC200-12 can be used as a high-performance, two-channel, USB-powered arbitrary function generator. Custom product configurations are available—OEM inquiries welcome.

Features

- Two independent channels with 12 V_{RMS} of range
- Ultra-small USB-powered design
- Runs AC (carrier) or DC (carrier-less) programs up to 96 lines long
- Mini-DIN6 LC output connector, with External Trigger input
- **LCDriver2** host application for Windows 7, Vista or Windows XP
- Device-driver toolkit for programming in *LabVIEW*, *Visual Basic*, or *Visual C++*
- Can be used as two-channel USB arbitrary function generator
- RoHS compliant



www.opticalfinesse.com

LC CHANNELS	
Number of channels	• Two, independently programmable
Maximum voltage stroke	• 12.10 V _{RMS}
Voltage output	• AC (carrier + envelope) • DC (carrier-suppressed, sign reversal after each iteration) • Arbitrary function generator (up to 96 points, more upon special arrangement)
AC waveforms	• Square-wave carrier, 50.00% duty cycle • Frequencies from 1 Hz to 2 kHz, software-selectable
DC waveforms	• Bipolar, 0.10 ms minimum time interval, 0.01 ms interval resolution
Amplitude resolution	• 14-bit; 1 mV voltage resolution
Amplitude accuracy	• Better than $\pm 0.3\%$ typical, $\pm 0.5\%$ maximum, measured at full range
Residual DC	• < 3 mV at any amplitude level
Drive capability	• Each channel can drive cells up to 600 nF capacitance
Short circuit	• Full-recovery short-circuit protection on LC outputs • Interior "Fault" LED will illuminate when an output is shorted
LC programs	• Internal storage of up to nine downloaded LC programs • Program 0 automatically saved when changes made

INTERFACE	
Host computer interface	• Full-speed USB 2.0 compliant, bus-powered device, 180 mA typical bus current draw
Software	• <i>LCDriver2</i> application software with host USB drivers for Windows 7, Vista, Windows XP, and Windows 2000 (executable only; 64-bit Windows XP not supported) • Permits dynamic creation and editing of LC programs • Separate dialog box for static LC channel amplitude control in AC mode
Device drivers	• DLL toolkit for programming in <i>LabVIEW</i> , <i>Visual Basic</i> or <i>Visual C++</i>
Digital input & output	• Opto-isolated Trigger Input, rising-edge triggered, TTL-compatible fan-in • Optional trigger output capability upon special arrangement

PHYSICAL	
Dimensions	• 4.4 in L x 2.5 in W x 1.1 in H (11.2 cm L x 6.4 cm W x 2.8 cm H)
Weight	• 0.3 lbs (.1 kg)
Chassis material	• Blue translucent ABS plastic, white silkscreened nomenclature
Chassis features	• Internal "USB Power", "Fault", and "Status" LEDs (visible through translucent chassis plastic) • Series B USB receptacle • Mini-DIN6 connector for LC outputs and External Trigger input
RoHS compliance	• 100% compliant
CE compliance	• Certification to FCC Class A emissions level upon special arrangement
Operating temperature	• 5 to 45° C
Warranty	• One year

In keeping with our commitment to continuous product improvement, these specifications are subject to change without notice.



3133 Indian Road
(303) 442-1549

Boulder CO 80301
info@opticalfinesse.com



REV 033114