



Optical Finesse LCC2-33

Liquid-Crystal Controller



The **LCC2-33** is a versatile dual-channel liquid-crystal controller, designed to run continuously-variable liquid crystal (LC) devices such as variable retarders, polarization switches, shutters, attenuators, and tunable color filters. LC voltages up to 33 V_{RMS} are controlled by two amplitude knobs.

The rugged output stages of the **LCC2-33** can drive cells up to 900 nF capacitance, and will withstand continuous shorts while recovering automatically when the short is removed. Outputs can be toggled between two preset amplitudes by either external or internal trigger.



Features

- 2 kHz balanced AC waveform generation up to 33 V_{RMS}
- Drives large-area cells up to 900 nF of capacitance
- Two 10-turn front-panel knobs for amplitude control
- Dual BNC and SMA connectors for LC outputs
- Automatic full-recovery short-circuit protection on LC outputs
- Switch-selectable External or Internal Modulation; Internal Modulation rates from 0.5 to 50 Hz
- RoHS compliant

LC OUTPUT & INTERFACE

Number of LC channels	• Two, with dual-connector outputs
Output waveform	• Bipolar DC-balanced square wave
Carrier frequency	• 2.00 ± 0.02 kHz
Amplitude range	• 0.0 to 32.0 V _{RMS} guaranteed
Amplitude control	• Two 10-turn preset amplitude knobs, assignable to either LC output • Toggling between amplitude configurations determined by operating mode
Residual DC	• < 5 mV at any amplitude level
Operating modes	• Manual • Internal Modulation (rate controlled by Internal Frequency knob) • External Modulation (with external TTL logic-level source)
Internal Modulation rate	• 0.5 to 50 Hz, 50% duty cycle
External Modulation	• TTL logic-level controlled (arbitrary duty cycle), asynchronously to 500 Hz. Logic HI = “straight-thru” configuration, logic LO = “crossed” configuration.
External Modulation latency & jitter	• Configuration switching latency less than 200 ns after External Modulation logic-level change, jitter less than 20 ns
Drive capability	• Outputs can drive cells up to 900 nF capacitance
Short circuit	• Full-recovery short-circuit protection on LC outputs • Front-panel “Fault” LED will illuminate when output is shorted

PHYSICAL

Dimensions	• 5.5 in W x 6.1 in L x 1.6 in H (14.0 cm W x 15.5 cm L x 4.1 cm H)
Weight	• 2.0 lbs (0.9 kg), controller + power supply
Chassis material	• Black anodized aluminum, rubber bottom feet • Machined aluminum front & back panels, black-anodized and laser etched
Front panel	• Power and Fault LEDs • Two 10-turn amplitude knobs • Two-position amplitude crossover switch (selects amplitude configuration in manual mode) • Internal Frequency knob (three-quarters turn, controls toggle rate in Internal Modulation mode)
Back panel	• Two 50-ohm BNC female bulkheads for LC voltage outputs (primary) • Two 50-ohm SMA female bulkheads for LC voltage outputs (secondary) • Two-position Internal/External Modulation toggle switch • 50-ohm BNC female bulkhead for External Modulation source • 2.1 mm power jack receptacle • 12VDC power ON/OFF switch
RoHS compliance	• 100% compliant (no exemptions used)
CE compliance	• Certification to FCC Class A emissions level upon special arrangement
Operating temperature	• 5 to 45° C
Power supply	• Separate, supplied with controller • International +12V, 18W, 100-240VAC 50-60Hz input, UL/CE listed • 2.1 x 5.5 mm center-positive plug
Warranty	• One year

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



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