KENTON

LD-2 mkII

Level display unit

Operating manual

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FCC Statement for LD-2

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Information on Disposal for Users of WEEE
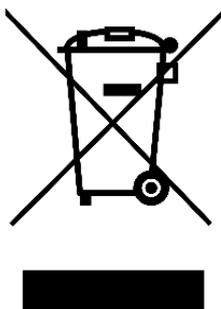
This symbol on the product and / or accompanying documents means that used electrical and electronic equipment (WEEE) should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.
Alternatively, in some countries, you may be able to return your products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For disposal in countries outside of the European Union
This symbol is only valid in the European Union (EU). If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

CONNECTIONS

MIDI In

Plug your MIDI pedal, controller or sequencer's MIDI Out into here. The **LD-2 mkII** has no MIDI thru, so it will need to be at the end of your MIDI chain, or fed from a thru box. Note that if you are using several MIDI devices "daisy chained" together, data may get corrupted to the devices at the end of the line. Best practise is to use a "Thru Box" if there are more than 3 devices chained together.

DC IN 9-12V

Plug the supplied power adapter into here. The unit will take an adapter with an output in the range of 9-12V either regulated or unregulated. The socket is a 2.1mm type with centre positive. Do not use an adaptor with an output voltage higher than 12V, also the **LD-2 mkII** must not share an adaptor with any other device. Failure to observe this will invalidate your warranty, and will probably damage the other device, the **LD-2 mkII** and/or the power supply.

DISPLAY

The display has two types of readout. Firstly numbers are displayed in numeric format. This can be either 0-127 as used by MIDI or alternatively 0-20. Secondly, there is a 20 segment bar readout where a value of zero will show no bars, and a value of 127 will show all bars, with intermediate values showing a proportionate number of bars.

USING THE *LD-2*

First connect the supplied power supply to the DC input socket on the left side of the unit, then connect your MIDI signal cable to the MIDI In socket.

When power is applied to the **LD-2 mkII** the words **KENTON LD-2** will scroll across the display, then three horizontal bars will show, indicating that no valid message has been received yet.

The factory default is to display the value of any message sent by controller #7 on MIDI channel #1.

CHANGING THE CONTROLLER & MIDI CHANNEL

To change the MIDI message being displayed, use a small screwdriver or matchstick (or similar) to press (then release) the learn button. The display will then show the letters "L r n" for learn. The learn button is deliberately recessed to prevent accidental re-assignment.

The next valid MIDI message received on any MIDI channel will be stored, so that any subsequent message received from that controller / program / note number / aftertouch value / pitchbend value on that MIDI channel will be displayed both on the 7 segment display, and on the bargraph.

The learned message and channel information is saved in non-volatile memory, so the unit will "remember" its assignments for the next time it is used.

Because MIDI program changes are often displayed either 0 to 127 or 1 to 128, it is possible to select either mode for display.

1) press the recessed button to put the unit into learn mode
2) press the program change button on your synth with the number "2" on it. This will either be the 2nd or 3rd button depending which scheme your keyboard uses.

- if your synth goes 0-127 then the display will show 0 (zero) when you do this to indicate 0-127 mode
- if your synth goes 1-128 then the display will show 1 (one) when you do this to indicate 1-128 mode
- if the display is not the mode you want, just use the next button up to program

The unit will then be ready to display program numbers on the MIDI channel you used to program it with. LD-2s with firmware earlier than #1126 cannot display program changes.

CHANGING THE NUMERIC DISPLAY MODE

To change the display mode to 0-20 or back to 0-127, hold the learn button in for a few seconds. At first it will display L r n (learn), but after several seconds it will show 20 for 0-20 mode or 127 for 0-127 mode. If you continue to hold the button in, it will continue to toggle between the two modes. When the mode you want to use is displayed, release the button and the unit will be ready to use again. This setting is also stored in the non-volatile memory. If you learn program change, then display mode will be reset to 0-127.

LIST OF CONTROLLER NUMBERS

Controller Number	Control Function
0	Bank select MSB
1	Modulation wheel or lever
2	Breath controller
3	Undefined
4	Foot controller
5	Portamento time
6	Data entry MSB
7	Main volume
8	Balance
9	Undefined
10	Pan
11	Expression controller
12	Effect control 1
13	Effect control 2
14-15	Undefined
16-19	General purpose controllers (1-4)
20-31	Undefined
32-63	LSB for controllers 0-31
64	Damper pedal (sustain) (Hold 1)
65	Portamento on/off
66	Sostenuto
67	Soft pedal
68	Legato footswitch (val 0-63=normal 64-127=legato)
69	Hold 2
70	Sound controller 1 (default=sound variation)
71	Sound controller 2 (default=timbre/harmonic content)
72	Sound controller 3 (default=release time)
73	Sound controller 4 (default=attack time)
74	Sound controller 5 (default=brightness)
75-79	Sound controllers 6-10 (no defaults)
80-83	General purpose controllers (5-8)
84	Portamento control
85-90	Undefined
91	Effects 1 depth (formerly external effects depth)
92	Effects 2 depth (formerly tremolo depth)
93	Effects 3 depth (formerly chorus depth)
94	Effects 4 depth (formerly celeste (detune) depth)
95	Effects 5 depth (formerly phaser depth)
96	Data increment
97	Data decrement
98	Non-registered parameter number LSB
99	Non-registered parameter number MSB
100	Registered parameter number LSB
101	Registered parameter number MSB
102-119	Undefined
121-127	Reserved for channel mode messages

SYSEX MESSAGES

You can control every segment of both the numeric and bargraph displays using SysEx messages if required using the format: F0 00 20 13 07 HB L1 L2 L3 L4 L5 F7.
For HB (high bits) bit 7 of L1 data goes in b0 of HB, bit 7 of L2 data goes in b1 of HB, etc. Bits 5,6,7 of HB must always be zero.
L1 to L5 are the displays from left to right, e.g. L1 is the leftmost digit and L5 is the rightmost bargraph.
Example to light all segments of the bargraphs you would send F0 00 20 13 07 18 00 00 00 7F 7F F7.
Example to put 888 in all 3 digits & blank bargraph you would send F0 00 20 13 07 00 7F 7F 7F 00 00 F7.

FACTORY DEFAULTS

If you want to reset your *LD-2 mkll* to its factory default settings, you can do so by applying power to the unit whilst holding the learn button pressed.

Fd (factory defaults) will momentarily be displayed when this has been done.

The factory default settings are:
MIDI channel #1
Controller #7 (MIDI volume)
Numeric display in 0-127 mode

SPECIFICATIONS

Power Input	9-12V DC – mains adaptor supplied (or phantom power from LD-3 or 4)
Power	110mA, 2.1mm plug (centre positive)
MIDI	In only. 5 pin 180 deg DIN socket. Valid learned messages are: Controllers (CCs), Program changes, Note numbers, Aftertouch & Pitchbend.
Display	3 x 7 segment display and 2 x 10 segment bargraph
Weight	285 gms
Dimensions	119 x 54 x 40 mm
Non-volatile memory	EEPROM (no back-up battery required)

WARRANTY

The *LD-2 mkll* comes with a 12 month (from purchase date) back to base warranty, (i.e. customer must arrange and pay for carriage to and from Kenton Electronics).

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