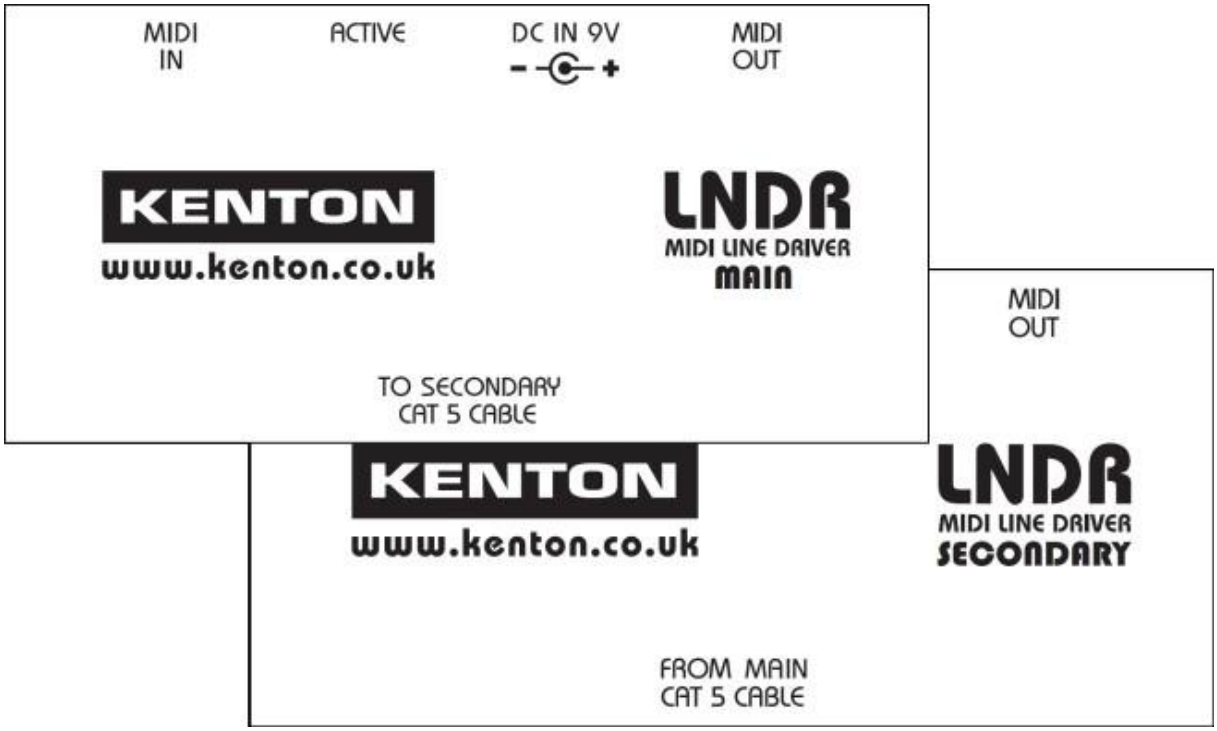
KENTON

LNDR

MIDI line Driver - main & secondary pair



Operating manual

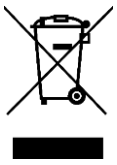
FCC STATEMENT FOR LNDX MIDI Line Driver:

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.

WEEE DIRECTIVE

(applies to the European Union & other European countries with separate collection systems)



The crossed-out wheelie bin symbol affixed to this product indicates that it should not be disposed of with other household wastes at the end of its working life. To prevent possible harm to the environment or to human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable re-use of material resources.

Household users should contact either the retailer where they purchased the product, or their local government office for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

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.

Introduction

The LNDR MIDI Line Driver is supplied as a pair of units with a MIDI Input and a MIDI Output at both ends to enable you to connect MIDI devices to each other over much greater distances than is usually possible using standard MIDI cables.

A MIDI signal applied to the MIDI IN of the main unit will appear at the MIDI out of the secondary unit. Similarly, a MIDI signal applied to the MIDI IN of the secondary unit will appear at the MIDI out of the main unit. You can send signals in both directions at the same time.

The main and secondary units are very similar, however the main unit supplies power for both units – the secondary unit does not have a power input socket.

The LNDR system is powered by a mains adaptor (supplied), so it doesn't need periodic battery changes to keep it working, enabling you to "fit and forget".

Connecting

Ensure that the power adaptor is plugged in to the main unit, and the ACTIVE LEDs on the LNDR main & secondary units are both on. Ensure you have a CAT5 cable connecting the main unit to the secondary unit. Connect the MIDI out of your keyboard or computer to the MIDI IN of the LNDR main unit and connect the MIDI OUT of the LNDR secondary unit to the MIDI input of the device you want to control. Alternatively connect the MIDI out of your keyboard or computer to the MIDI IN of the LNDR secondary unit and connect the MIDI OUT of the LNDR main unit to the MIDI input of the device you want to control.

If possible, use MIDI cables no greater than 5 metres in length for the MIDI INs of the LNDR. The MIDI INs should ideally be driven direct from the signal source, not at the end of a daisy chain of THRUs. If necessary, use a thru box such as the THRU-5.

Please note that LNDR is **not** an Ethernet device. The CAT5 or CAT5e cable from an LNDR main unit should **only** be connected to an LNDX or LNDR secondary unit, not to another main unit, and **neither the main nor secondary units should EVER be connected to any other device** (except LNDR or LNDX), even if it has a similar connector. (e.g. Ethernet router, switch or hub).

LEDs

There is a green LED on each of the main and secondary units. The LED will be lit if there is power to the unit. When MIDI data is presented to each unit, its LED will flash.

CAT5 cable info

You should use good quality CAT5 cable. For distances greater than 100 metres you should use CAT5e cable. Ideally use ready-made CAT5 cables which are available in many lengths, however if you wish to make you own, it is vital that the cable pairs are connected to the correct pins. It is not sufficient that pin 1 connects to pin 1 (2-2, 3-3 etc.), it is also essential that pin 1 is paired with 2, 3 with 6, 4 with 5, and 7 with 8. You will find that the twisted pairs have complementary colours, white/orange with orange/white etc. Cables should be wired to the EIA-568B standard at both ends. Don't use crossover cables. You can find out more about CAT5 wiring on the internet. Search for "straight through RJ45".

For distances up to 100 metres, either stranded or solid copper core cables can be used.
For distances over 100 metres, 24 AWG solid copper core CAT5e cable should be used.

Copper Clad Aluminium (CCA) cable can be used up to 100 metres, but is not recommended.

Although we recommend wiring to the EIA-568B standard, the CAT5 cable can alternatively be wired to the EIA-568A standard. Whichever you choose, both ends must be wired to the same standard.

Troubleshooting

Check that you are using a properly wired CAT5 cable – see above.
Check that you are using a "straight through" cable, **not** a "crossover" cable.
Check that the "active" LEDs are lit.

If you encounter problems at very long distances, it could be the result of volt-drop in the CAT5 cable, in which case substituting the power supply for a 12v regulated unit will help. Note that we have tested the LNDR system to over 1100 metres using the supplied 9V PSU without problems.

Specification

Power Input	9V to 12V DC (regulated or unregulated)
Power	85mA, 2.1mm plug (centre positive)
MIDI	1 x In, 1 x Out on each unit (standard 5 pin DIN connectors)
Interconnect	CAT5 cable required with RJ45 connectors
Protocols	MIDI and RS485 full duplex
Range	1000 metres between main & secondary units over 24AWG solid copper core CAT5e cable (500 metres for serial numbers below 2876)
Weight	110g (each unit, excluding power supply)
Dimensions	100 x 46 x 32 mm (each unit)
Power supply	supplied with a 9v regulated multi-region power supply which is suitable for use in the UK, EU, US/Canada, Japan and AUS/NZ.

Warranty

The LNDR MIDI Line Driver 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 Ltd). In the unlikely event of a problem, contact us by email through our website or by telephone.

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