Luminex
Lighting Control Equipment

DMX512-A 2.10 HUB

User Guide

DMX512-A 2.10 HUB User Guide
Document hub2.10_web_man_uk

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Warranty information

Limited warranty

Unless otherwise stated, your product is covered by a one (1) year parts and labor limited warranty. It is the owner's responsibility to furnish receipts or invoices for verification of purchase, date, and dealer or distributor. If purchase date cannot be provided, date of manufacture will be used to determine warranty period.

Returning under warranty

Any Product unit or parts returned to Luminex LCE must be packaged in a suitable manner to ensure the protection of such Product unit or parts, and such package shall be clearly and prominently marked to indicate that the package contains returned Product units or parts. Accompany all returned Product units or parts with a written explanation of the alleged problem or malfunction.

Freight

All shipping will be paid by the purchaser. Items under warranty shall have return shipping paid by the manufacturer only in the European Union. Under no circumstances will freight collect shipments be accepted. Prepaid shipping does not include rush expediting such as air freight. Air freight can be sent customer collect in the European Union.

Warranty is void if the product is misused, damaged, modified in any way, or for unauthorized repairs or parts.

General

Packaging

- 1 x DMX 512-A 2.10 HUB

- 1 x Instruction manual

Description

The DMX512-A 2.10 HUB is a full bidirectional isolated DMX splitter or booster with 2 dedicated input connectors and 10 configurable output connectors. All in- and outputs conform to the DMX512-A standard. This allows half-duplex data transport, such as RDM, on a normal single pair DMX connection. The hub is also compatible with DMX512 and DMX512 (1990).

The hub has 2 separate DMX zones (input zone A and input zone B). On every output you can select to which zone it has to be connected. This allows you to distribute 2 separate DMX lines (1024 channels) in any possible output configuration.

All outputs can receive data as well and retransmit it on its selected zone. In this way RDM data (and other bidirectional data) will be send on all outputs and input of the same zone.

Specification

Model: DMX512-A 2.10 HUB
Manufacturer: LUMINEX Lighting Control Equipment

- **Dimensions**

    482 x 172 x 44 (mm)
    19" x 6,8" x 1,75"
    Package: 520 x 235 x 50 (mm)

- **Weight**

    2,2 kg

- **Electrical**

    Voltages: 90 – 260 VAC
    Frequency: 47 – 63 Hz
    Rated power: 20 W
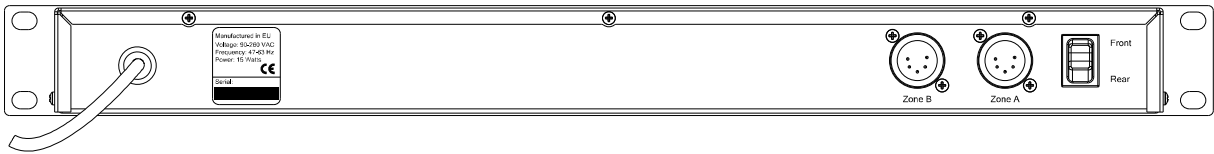   Fuses: 125V, 500mA, Slow blow only (5mm x 20mm)
               250V, 315mA, Slow blow only (5mm x 20mm)

- **Environmental**

   Operating temperature: 0 ~ 60°C (32 ~ 140°F)

Rear panel

- **Mains**

The device operates with an AC voltage between 90V and 260V within a frequency range of 47Hz and 63Hz.

A fixed power lead with lose cable end is directly connected to the device (no plug/connector). Please use an authorized plug and connect the cores in the mains lead in accordance with the following scheme:

Green / Yellow: Earth

Blue: Neutral

Brown: Live

!!! This equipment must be earthed !!!

Front panel
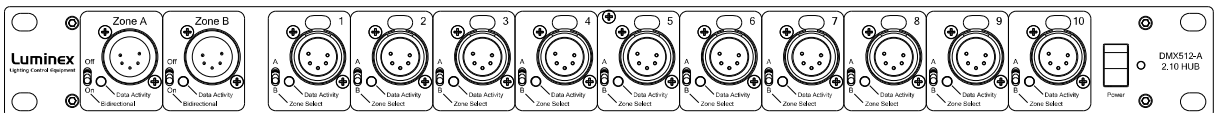
- **DMX input**

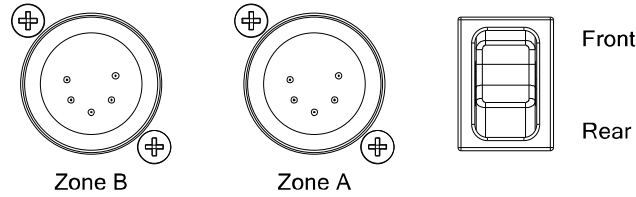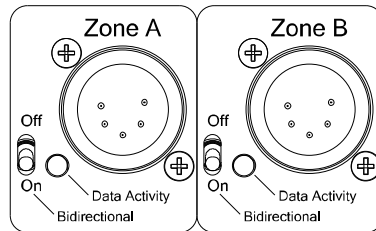Two Neutrik 5 pin gold plated male connectors are provided as zone A and zone B input.

Connector	Function
Pin 1	Signal common (0 volt)
Pin 2	Data complement (-)
Pin 3	Data true (+)
Pin 4	Not used
Pin 5	Not used

Both inputs are compliant with the DMX512-A specification and are terminated. The 2 inputs are separately optical and galvanic isolated from

the outputs and from each other.

Zone B   Zone A

Zone A and Zone B input connectors are also provided at the rear of the device. A small switch at the rear is provided to choose between the front or rear panel connections. These inputs allow cabling at the back or inside a rack.


On the front panel, a small switch at each input is provided to disable the bidirectional functionality of each zone independently.

• **DMX output**

Ten Neutrik 5 pin gold plated female connectors are provided as output.

Connector	*Function*
Pin 1	Signal common (0 volt)
Pin 2	Data complement (-)
Pin 3	Data true (+)
Pin 4	Not used
Pin 5	Not used

All outputs are compliant with the DMX512-A specification and are terminated. The outputs are separately optical and galvanic isolated from the inputs and from each other.
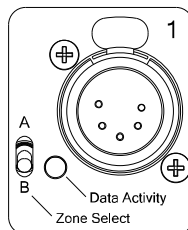
A tiny switch is provided with every output to choose between Zone A and Zone B. In this way you can make any combination of splitter, configuring as many outputs you need to transmit DMX from Zone A and the rest from zone B.

When the bidirectional functionality of the selected zone is active, all received data on these outputs will be retransmitted on all the outputs of

this zone and on the input connector of this zone.

Features

Isolation

- **Individual outlet protection**

All ten outputs feature individual isolation and protection. This means that if a fault occurs on a piece of equipment connected to one output, fixtures on the other outputs are totally protected. In addition the input connectors have their own protection, this gives a double barrier between fixtures and the console and protects the console against a fault on the mains supply to the buffer itself (i.e. if the buffer unit was inadvertently connected across two phases).

- **1000 Volts optical isolation barrier**

Each outlet has an optical isolator that is capable of withstanding voltages of up to 1000V. Each isolator has its own power supply eliminating any direct electrical connection between outputs.

Self-healing technology makes sure that the outlets can resist up to 530V over its data pairs. This means that after such a fault the outlet works fine again with normal DMX signals.

- **Short circuit protection**

Each outlet is protected against short circuits, or incorrectly wired connectors.

- **Modular isolation**

All the components that provide the opto-isolation are built into a single plug-in module for each channel making servicing ultra-simple. In addition each module is completely interchangeable with other channels including the input module.

- **Line voltage protection**

Not only does the Hub protect your various pieces of equipment from inadvertent DMX-to-mains connection it also protects itself. Each individual output is protected so that no damage will occur to the buffer even if they are connected directly to 230V by mistake.

Even a built-in rechargeable battery backups the complete isolation functionality when a mains failure occurs (see "Power fail management").

Bidirectional and RDM

Bidirectional means that the splitter can work in Half-duplex over data pin 2 and 3.

All outlets are able to receive data. When an outlet receives data, then this data will be retransmitted on all remaining outlets configured to the same zone. So all output and input connectors of the same zone will get all data send on that zone.

This allows bidirectional manufacturer dependent data to be transmitted between fixtures and controllers. The Hub is protocol independent and supports in this way communication from different manufacturers such as High End Systems, Martin Professional, Coemar,...

RDM or Remote Device Management is also supported this way. The change over time in data direction is conform to the RDM and DMX512-A specification. The Hub is a non proxy RDM device with no built in RDM management controlling logic. This allows us to assure a maximum data delay between incoming data and outgoing data of 1 micro second.

Power fail management

An integrated power management circuit assure optimal power conditions and fail prove operation.

• **Backup battery**

A built-in rechargeable backup battery assures the complete operation (included isolation) of the unit during power failure. When the unit is connected to mains and switched on, the battery get automatically loaded. This allows complete functionality for 20 minutes with a full loaded battery.

The Hub will detect a mains failure and automatically switch over to internal battery backup.

!!! Make sure to switch off the unit after use. When the unit is not switched off it will continue to work until that battery is dead. The next time it will take a few hours to have the battery completely recharged. !!!

Note: We recommend to change the battery pack every 3 years. The battery can easily be replaced. No soldering is needed. The battery pack can be ordered separately at Luminex LCE.

- **Power status**

The status of the mains and battery are shown on a tri-coloured LED on the front panel next to the power switch.

LED status	*Power status*
Green	Working on external mains supply.
Orange	No external mains supply. Working on battery power. Battery status ok.
Red	No external mains supply. Working on battery power. Battery status bad.
OUT	No external mains supply. Battery dead (empty). Or unit is switched off.