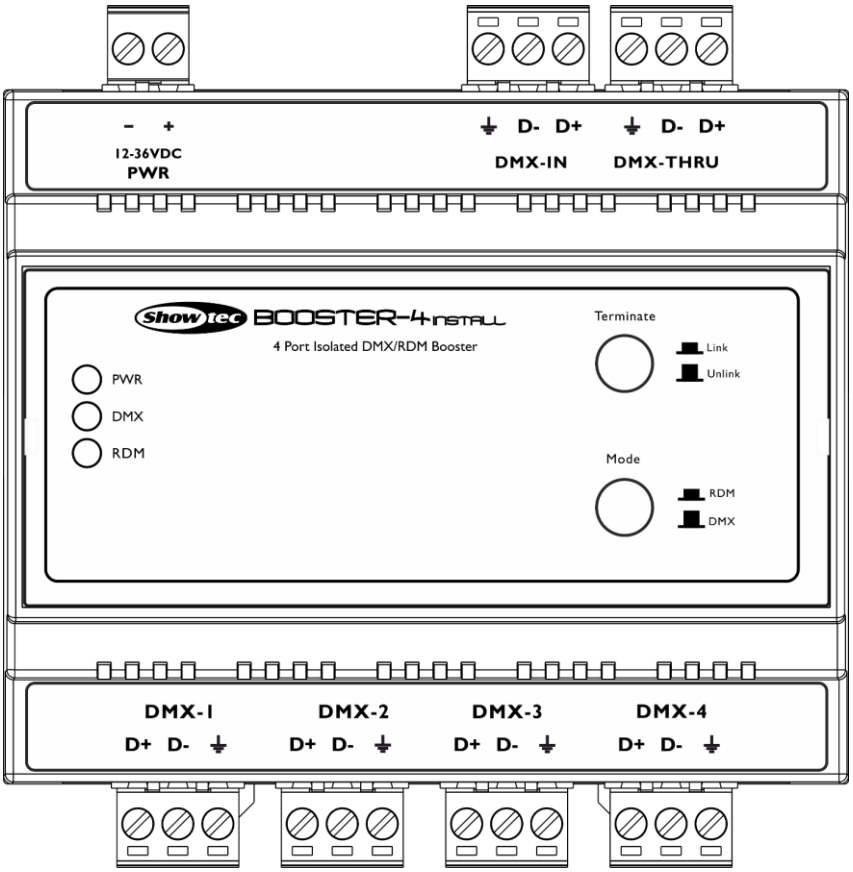
USER MANUAL



ENGLISH

Booster-4 Install V1

Product code: 50795

Preface

Thank you for purchasing this Showtec product.

The purpose of this user manual is to provide instructions for the correct and safe use of this product.

Keep the user manual for future reference as it is an integral part of the product. The user manual shall be stored at an easily accessible location.

This user manual contains information concerning:

- Safety instructions
- Intended and non-intended use of the device
- Installation and operation of the device
- Maintenance procedures
- Troubleshooting
- Transport, storage and disposal of the device

Non-observance of the instructions in this user manual may result in serious injuries and damage of property.

Design and product specifications are subject to change without prior notice.

For the latest version of this document, please visit our website www.highlite.com or contact us at service@highlite.com.

Highlite International and its authorized service providers are not liable for any injury, damage, direct or indirect loss, consequential or economic loss or any other loss arising from the use of, or inability to use or reliance on the information contained in this document.

Table of contents

1. Introduction

1.1. Before Using the Product

Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

After unpacking, check the contents of the box. If any parts are missing or damaged, contact your Highlite International dealer.

Your shipment includes:

- Showtec Booster-4 Install
- User manual

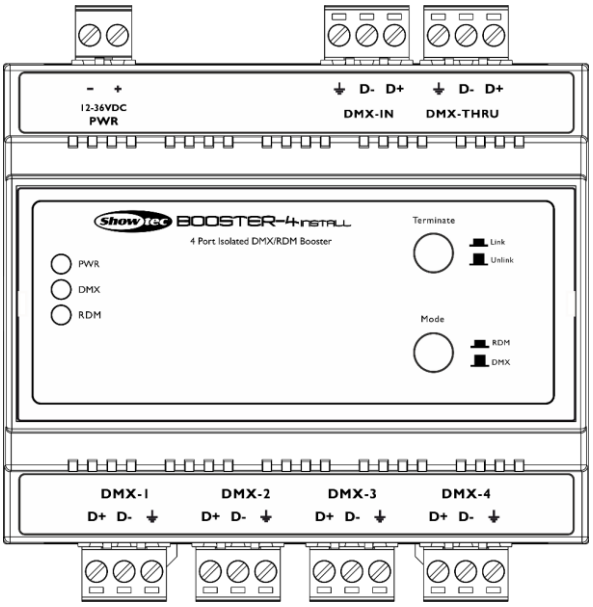


Fig. 01

1.2. Intended Use

This device is designed to be used as a DMX/RDM booster. It is suitable for indoor installation in an electrical enclosure.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

1.3. Text Conventions

Throughout the user manual the following text conventions are used:

- Buttons: All buttons are in bold lettering, for example "Press the **UP/DOWN** buttons"
- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "press the **power switch (03)**"
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

1.4. Symbols and Signal Words

Safety notes and warnings are indicated throughout the user manual by safety signs.

Always follow the instructions provided in this user manual.

	**DANGER**	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	**WARNING**	Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.
	**CAUTION**	Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
	**Attention**	Indicates important information for the correct operation and use of the product.
	**Important**	Read and observe the instructions in this document.
		Provides important information about the disposal of this product.

1.5. Symbols on the Information Label

This product is provided with an information label. The information label is located on the bottom plate of the device.

The information label contains the following symbols:

	This device is designed for indoor use.
	This device is IEC protection class III.
	This device shall not be treated as household waste.
	Read and observe the instructions in this document.

2. Safety

Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

2.1. Warnings and Safety Instructions

Attention
Power supply

This device falls under IEC protection class III. This device shall be connected to an external power supply.

- Before connecting the device to the external power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.
- Make sure that the cross-sectional area of the power cable is sufficient for the required power consumption of the device.

Attention
General safety

- Do not block the ventilation openings. Without proper heat dissipation and air circulation, the internal components may overheat. This can result in product damage.
- Do not shake the device. Avoid brute force when installing or operating the device.

Attention
For professional use only
This device shall be used only for the purposes it is designed for.

This device is designed to be used as a DMX/RDM booster. It is suitable for indoor installation in an electrical enclosure. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households.
- This device does not contain user-serviceable parts. Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Attention
Do not expose the device to conditions that exceed the rated IP class conditions.

This device is IP20 rated. IP (Ingress Protection) 20 class provides protection against solid objects greater than 12 mm, such as fingers, and no protection against harmful ingress of water.

2.2. Requirements for the User

This product may be used by ordinary persons. Maintenance, installation and service shall be carried out only by instructed or skilled persons. Contact your Highlite International dealer for more information.

Instructed persons have been instructed and trained by a skilled person, or are supervised by a skilled person, for specific tasks and work activities associated with the service of this product, so that they can identify risks and take precautions to avoid them.

Skilled persons have training or experience, which enables them to recognize risks and to avoid hazards associated with the service of this product.

Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

3. Description of the Device

The Showtec Booster-4 Install is the ideal compact fixed-installation booster for you. You can connect devices using the Phoenix terminal connectors. All inputs and outputs are optically isolated to prevent interference. This device distributes both DMX and RDM and is ideal for network system integration projects.

3.1. Front View

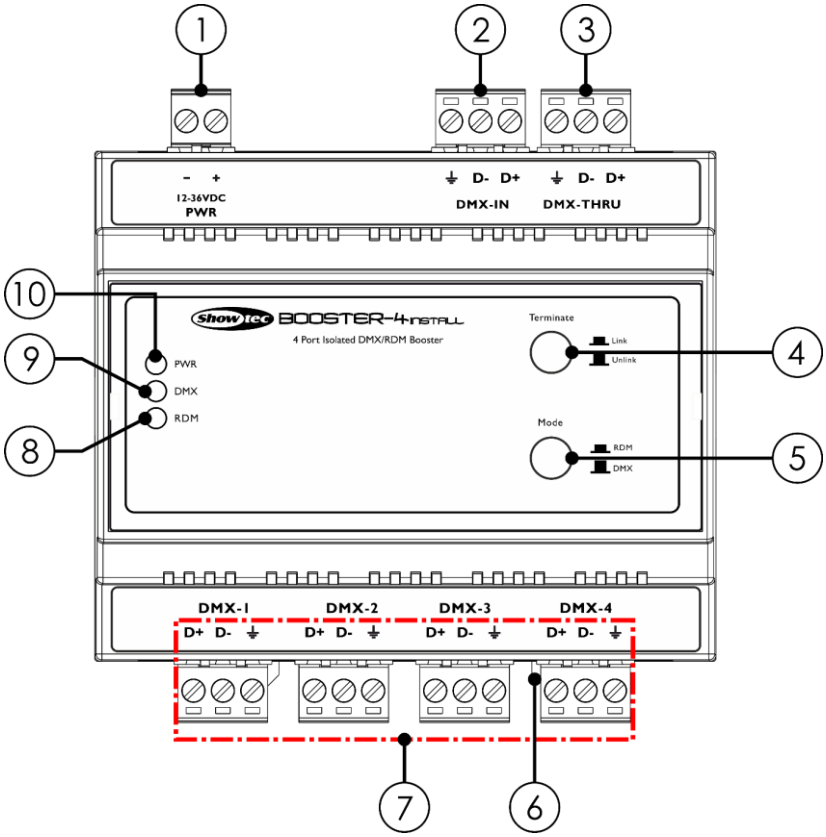


Fig. 02

01) 12 V DC 2-pin Phoenix terminal power connector IN
02) 3-pin Phoenix terminal connector DMX IN
03) 3-pin Phoenix terminal connector DMX THRU
04) Terminate button
05) Mode button
06) DIN rail lock
07) 3-pin Phoenix terminal fixture connector DMX OUT (1–4)
08) RDM LED indicator
09) DMX LED indicator
10) Power LED indicator

3.2. Product Specifications

Model:	Booster-4 Install

Electrical:	
Power supply (external):	12–36 V DC
Power consumption:	9 W

Physical:	
Dimensions:	105 x 110 x 58 mm (LxWxH)
Weight:	0,18 kg

Operation and control:	
Control protocols:	DMX-512, RDM
Control modes:	DMX-512, DMX-512+RDM
Universes:	1

Connections:	
Power connections:	• 12 V DC 2-pin Phoenix terminal power connector IN (maximum cable gauge: 1,5 mm^2 / AWG: 12)
Input connections:	• 3-pin Phoenix terminal DMX connector IN (maximum cable gauge: 1,5 mm^2 / AWG: 12)
Output connections:	• 3-pin Phoenix terminal DMX connector THRU (maximum cable gauge: 1,5 mm^2 / AWG: 12) • 4 x 3-pin Phoenix terminal DMX connector OUT (maximum cable gauge: 1,5 mm^2 / AWG: 12)

Construction:	
Housing:	UL94-V0 flame retardant polycarbonate
Color:	Gray
Mounting:	35-mm DIN rail system (DIN EN43880 form factor; DIN EN60715 rail system)
Mounting size:	6 TE
IP rating:	IP20

Thermal:	
Maximum ambient temperature t_a:	40 °C

3.3. Dimensions

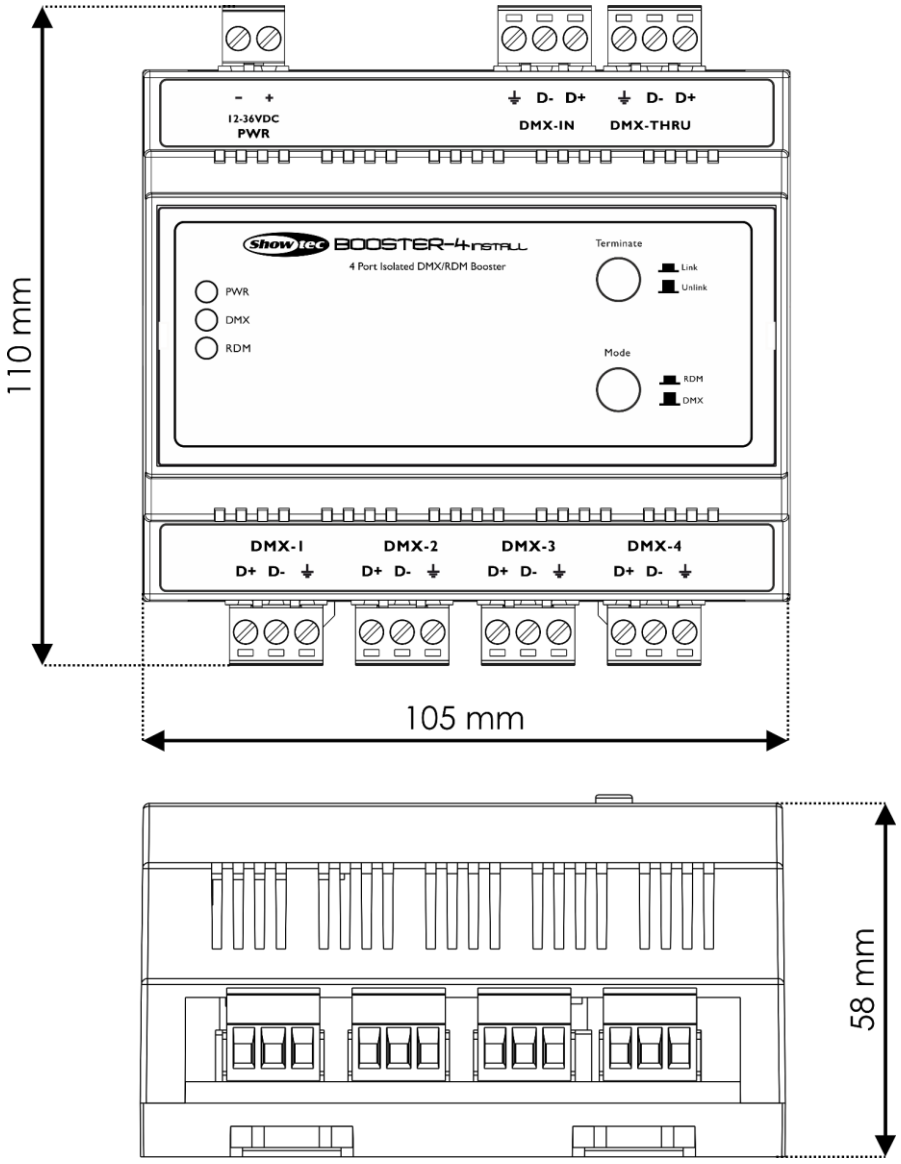


Fig. 03

4. Installation

4.1. Safety Instructions for Installation

WARNING
Incorrect installation can cause serious injuries and damage of property.

The installation of this device shall be carried out only by instructed or skilled persons.

Before installing the device, make sure that the electrical enclosure, where the device will be mounted, is disconnected from power supply.

4.2. Installation Site Requirements

- The device must be installed only indoors.
- The device can be mounted on a 35-mm DIN rail.
- The maximum ambient temperature t_a = 40 °C must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 50 °C.

4.3. DIN Rail Mounting

The device can be mounted on a 35-mm DIN rail.

Make sure that the DIN rail is sufficiently secured to prevent it from becoming unstable or falling off.

To mount the device on a 35-mm DIN rail, follow the steps below:

01) Position the device on the DIN rail.
02) Push the **DIN rail locks (06)** to mount the device firmly on the DIN rail (see Fig. 04).

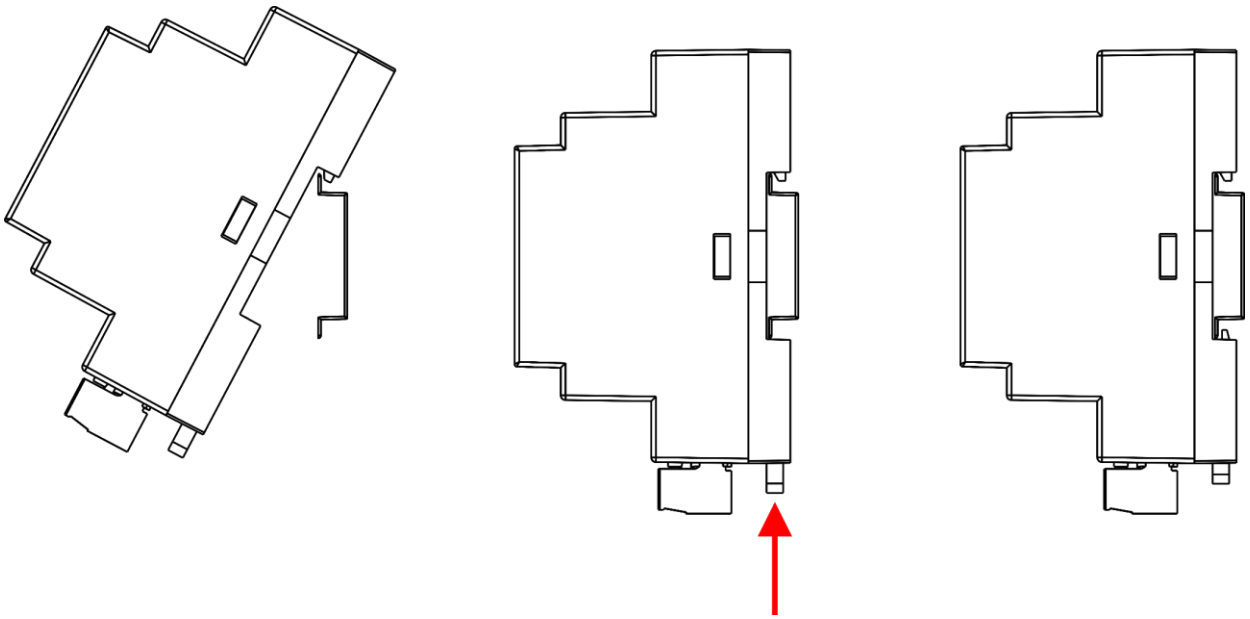


Fig. 04

4.4. Connecting to Power Supply

Attention
Power supply

This device falls under IEC protection class III. This device shall be connected to an external power supply.

- Before connecting the device to the external power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.
- Make sure that the cross-sectional area of the power cable is sufficient for the required power consumption of the device.

01) Remove the **2-pin Phoenix terminal power connector IN (01)**.

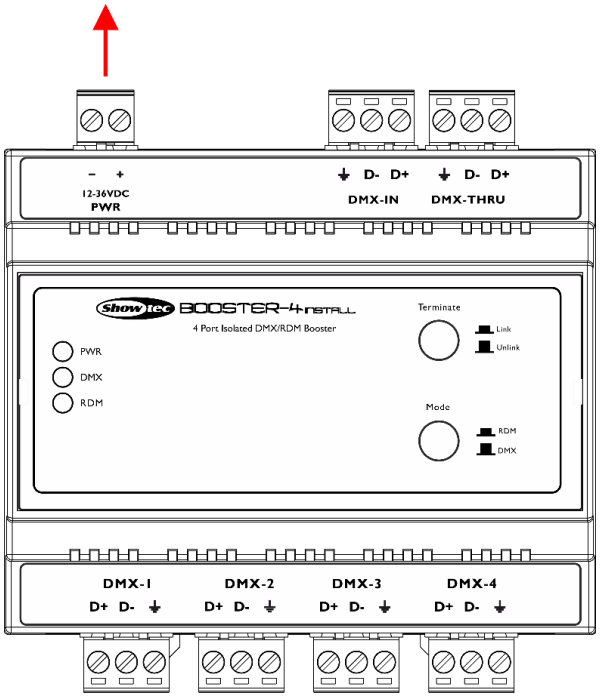


Fig. 05

02) Connect the external power supply to the Phoenix connector. Insert the cables correctly.

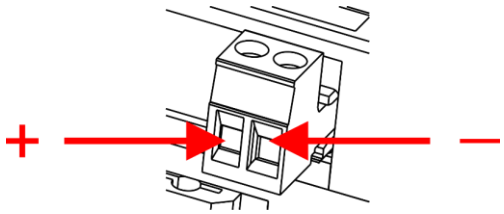


Fig. 06

03) Put the Phoenix connector back in the Booster-4 Install.
04) Install the Booster-4 Install on a DIN rail. See **4.3. DIN Rail Mounting** on page 10 for more information.
05) Connect the external power supply to the socket-outlet with its power plug.

5. Setup

5.1. Warnings and Precautions

Attention
Connect all data cables before supplying power.
Disconnect power supply before connecting or disconnecting data cables.

5.2. Fixture Connection

01) Remove all 4 **3-pin Phoenix terminal fixture connectors OUT (07)**.

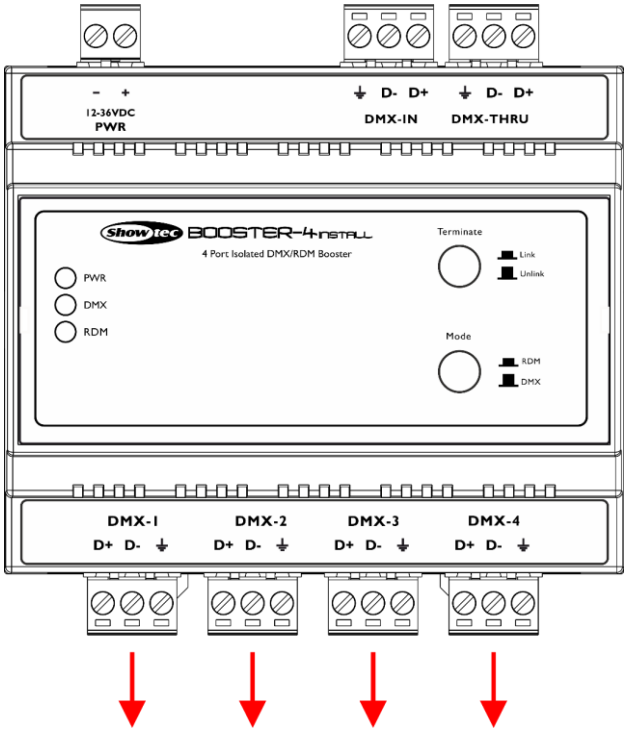


Fig. 07

02) Connect the device's **3-pin Phoenix terminal fixture connectors OUT (07)** to the fixtures' DMX IN connectors. Insert the cables correctly.

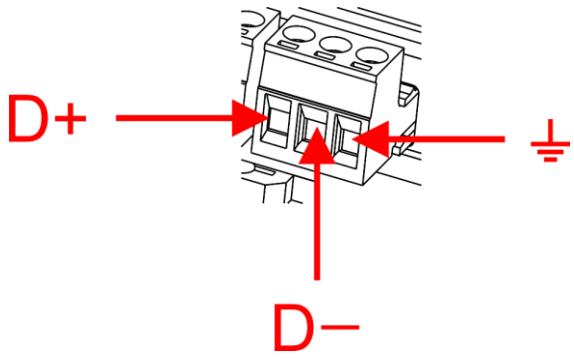


Fig. 08

03) Put the Phoenix connectors back in the device.

5.3. DMX Connection

5.3.1. DMX-512 Protocol

You need a DMX serial data link to run light shows of one or more devices using a DMX-512 controller.

The Booster-4 Install has 3-pin DMX signal IN and THRU connectors.

The pin assignment is as follows: pin 1 (ground), pin 2 (-), pin 3 (+).

Devices on a serial data link must be daisy-chained in a single line. The number of devices that you can control on one data link is limited by the combined number of the DMX channels of the connected devices and the 512 channels available in one DMX universe.

To comply with the TIA-485 standard, no more than 32 devices should be connected on one data link. In order to connect more than 32 devices on one data link, you must use a DMX optically isolated splitter/booster, otherwise this may result in deterioration of the DMX signal.

Note:
- Maximum recommended DMX data link distance: 300 m
- Maximum recommended number of devices on a DMX data link: 32 devices

5.3.2. DMX Cables

Shielded twisted-pair cables must be used for reliable DMX connection. You can purchase DMX cables directly from your Highlite International dealer or make your own cables.

If you use XLR audio cables for DMX data transmission, this may lead to signal degradation and unreliable operation of the DMX network.

When you make your own DMX cables, make sure that you connect the pins and wires correctly as shown in Fig. 09 on page 13.

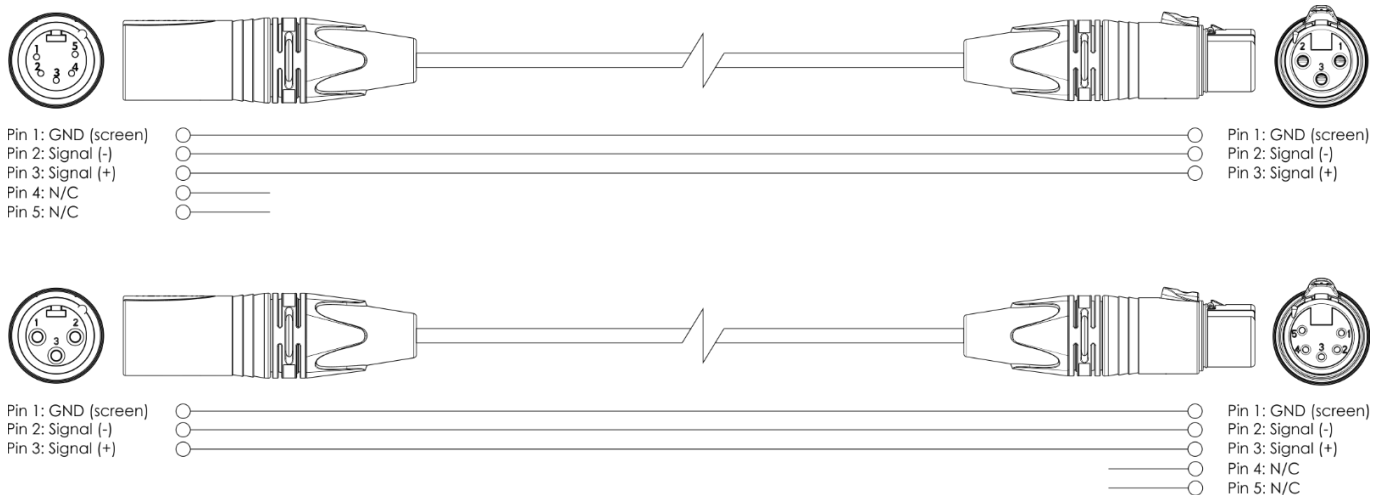


Fig. 09

5.3.3. DMX Linking

To connect multiple devices on one DMX data link, follow the steps below:

01) Remove the **3-pin Phoenix terminal DMX connector IN (02)** and the **3-pin Phoenix terminal DMX connector THRU (03)**.

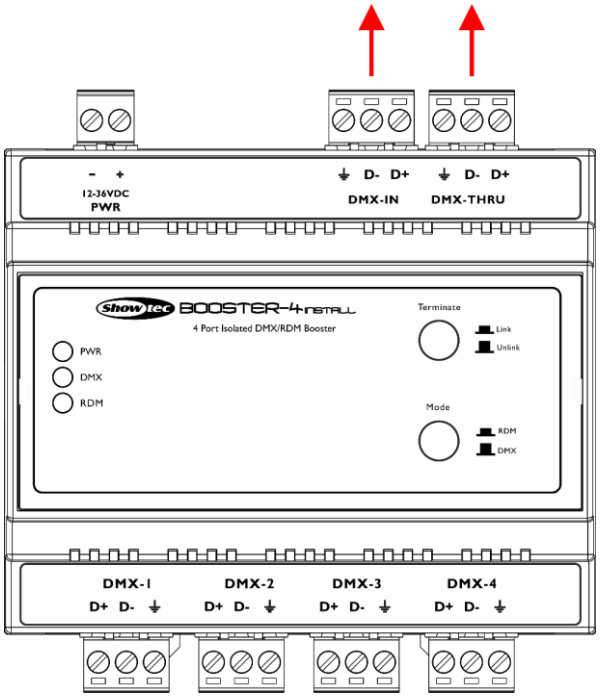


Fig. 10

02) Use a DMX cable to connect the DMX OUT connector of the lighting controller to the DMX IN connector of the first device. Insert the cables correctly. See Fig. 11.
03) Connect the first device's DMX THRU connector to the second device's DMX IN connector with a DMX cable. Insert the cables correctly. See Fig. 11.

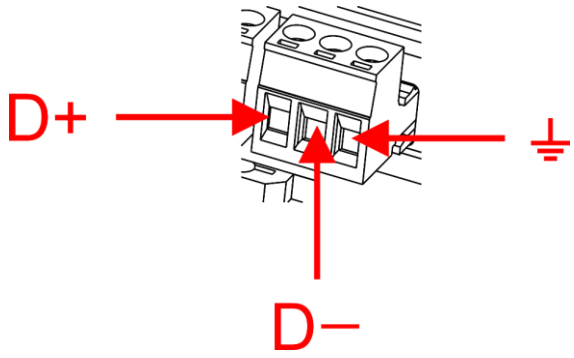


Fig. 11

04) Put the Phoenix connectors back in the device.
05) Repeat steps 3–4 to connect all devices in a daisy-chain as shown in Fig. 12 on page 15.

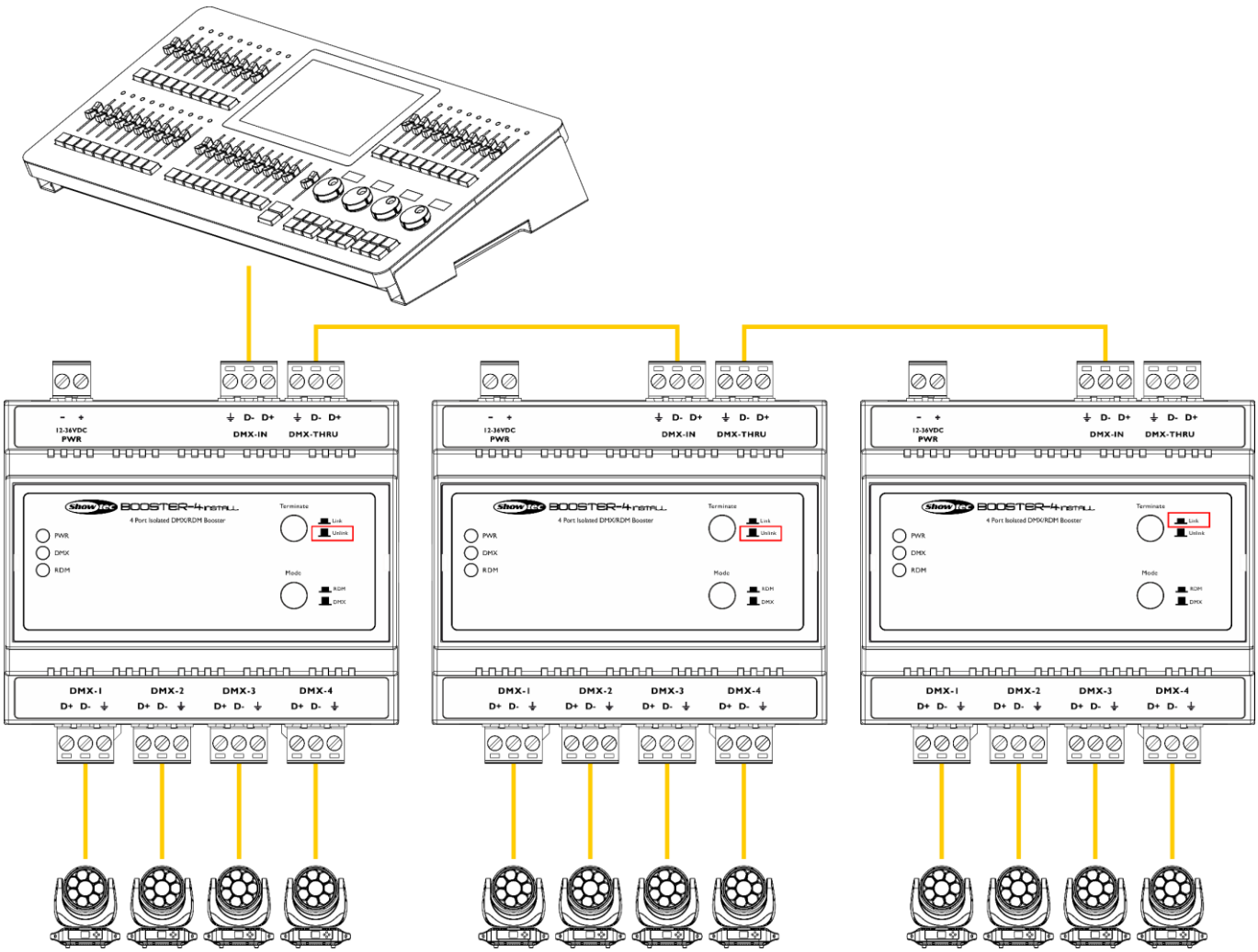

12-36VDC
PWR
DMX-IN
DMX-THRU
BOOSTER-4 INSTALL
4 Port Isolated DMX/RDM Booster
PWR
DMX
RDM
Terminate
Link
Unlink
Mode
DMX-1
DMX-2
DMX-3
DMX-4
D+ D-

Fig. 12

6. Operation

6.1. Safety Instructions for Operation

Attention
This device must be used only for the purposes it is designed for.

This device is designed to be used as a DMX/RDM booster. It is suitable for indoor installation in an electrical enclosure. It is not suitable for households.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

Attention
Power supply

Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.

6.2. Start-up

01) Connect a DMX-512 lighting controller and light fixtures to the device. For more information, see **5.2. Fixture Connection** on page 12 and **5.3.3. DMX Linking** on page 14.
02) Make sure that the **Terminate (04)** button on all daisy-chained devices but the last one is in UNLINK position. See Fig. 12 on page 15 for more information.
03) Make sure that the **Terminate (04)** button on the last daisy-chained device is in LINK position. See Fig. 12 on page 15 for more information.
04) Press the **Mode (05)** button on each device in order to choose one of the 2 operation modes:
    - DMX: The device boosts and sends DMX signals to the connected light fixtures.
    - RDM: The device boosts and sends DMX+RDM signals to the connected light fixtures.
05) Power the devices up.
06) Operate the DMX-512 lighting controller to send DMX signals, via the Booster-4 Install, to the light fixtures.
07) See **6.3. LED Statuses** on page 16 for more information.

6.3. LED Statuses

There are **3 LED indicators (08/09/10)** on the front panel of the device. The LED indicators have the following functions:

- PWR: If the light is on, the device is powered.
- DMX: If the light is blinking, the device is receiving a DMX signal from the DMX-512 light controller.
- RDM: If the light is blinking, the device is receiving a DMX+RDM signal from the DMX-512 light controller.

7. Troubleshooting

This troubleshooting guide contains solutions to problems which can be carried out by an ordinary person. The device does not contain user-serviceable parts.

Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Refer servicing to instructed or skilled persons. Contact your Highlite International dealer in case the solution is not described in the table.

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	• Check if power is switched on and cables are plugged in • Check if the external power supply is connected properly and if it is operating within its specification limits
The device does not respond to DMX control	The controller is not connected	• Connect the controller
	The signal is reversed. The 3-pin DMX OUT of the controller does not match the DMX IN of the device	• Install a phase-reversing cable between the controller and the device
	The controller is defective	• Try using another controller
The device responds erratically to DMX control	Bad data link connection	• Examine connections and cables. Correct poor connections. Repair or replace damaged cables
	The data link is not terminated	• Make sure that the **Terminate (04)** button on the last device on the link is in LINK position
	Incorrect addressing	• Check address settings of your light fixtures and correct, if necessary
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	• To find out the defective device, bypass one device at a time until normal operation is restored
No light or LEDs cut out intermittently	LEDs are damaged	• Disconnect the light fixtures and contact your dealer

8. Maintenance

Maintenance and cleaning shall be carried out only by instructed persons.

Follow the maintenance schedule established for the site where the electrical enclosure is installed.

Disconnect power supply before servicing or cleaning.

8.1. Preventive Maintenance

Attention
Before use, examine the device visually for any defects.

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- There are no deformations on housings, fixations and installation points.
- The power cables are not damaged and do not show any material fatigue.

8.1.1. Basic Cleaning Instructions

To clean the device, follow the steps below:

01) Disconnect the electrical enclosure from the power supply.
02) Clean the device with a soft, lint-free cloth.
03) Remove residual dust with an air-duster or air-blower. Keep the air-duster or air-blower at a minimum distance of 30 cm.

Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.
- Do not clean the device with a brush.

8.2. Corrective Maintenance

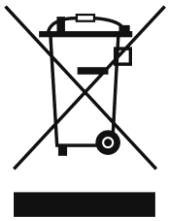
The device does not contain user-serviceable parts. Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

9. Deinstallation, Transportation and Storage

- Disconnect the electrical enclosure, where the device is mounted, from the power supply before deinstallation of the device.
- Use the original packaging to transport the device, if possible.
- Clean the device before storing. Follow the cleaning instructions in chapter **8.1.1. Basic Cleaning Instructions** on page 18.
- Store the device in the original packaging, if possible.

10. Disposal



Correct disposal of this product

Waste Electrical and Electronic Equipment

This symbol on the product, its packaging or documents indicates that the product shall not be treated as household waste. Dispose of this product by handing it to the respective collection point for recycling of electrical and electronic equipment. This is to avoid environmental damage or personal injury due to uncontrolled waste disposal. For more detailed information about recycling of this product contact the local authorities or the authorized dealer.

11. Approval

CE

Check the respective product page on the website of Highlite International (www.highlite.com) for an available declaration of conformity.