Techni-Lux

Information specifically for:
AC-DMXSPLIT10R/3 with 3 pin XLR outputs
AC-DMXSPLIT10R/5 with 5 pin XLR outputs

V1

This manual contains important information.
Please read before operating fixture.

CE

⚠ IMPORTANT INFORMATION ⚠

Save original packing and documentation for warranty, service and return issues.

Limited Warranty: This warranty covers defects or malfunctions in this equipment.   This warranty lasts for a period of one year from date of purchase. It is the owner's responsibility to provide invoices for proof of purchase, purchase date and dealer or distributor. If purchase date can not be provided, warranty period will start at manufacture date. It is the sole discretion of Techni-Lux to repair or replace parts or equipment.   All shipping will be paid by purchaser. This warranty does not cover lamps, fuses, belts, power semiconductors, relays, cleaning, standard maintenance adjustments or normal wear items or any problem resulting from the following: improper wiring, incorrect voltage (including low or over voltage conditions and lightning), abuse, misuse, improper maintenance or an act of God or damage resulting from shipping. Warranty will be null and void if the product is altered, modified, misused, damaged, or subjected to unauthorized repairs. Lamps are covered by relevant manufacturer warranty. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Any liability for consequential and incidental damages is expressly disclaimed. No other warranty, expressed or implied is made. Techni-Lux liability in all events is limited to, and shall not exceed, the purchase price paid.

Returning equipment and Repairs: All returns must be accompanied by a Return Merchandise Authorization (RMA) number and sent pre-paid. Contact the dealer or Techni-Lux directly to obtain an RMA. The RMA number must be clearly listed on the shipping label. Due care must be exercised in packing all merchandise to be returned. All repairs must be accompanied by a written explanation of the claimed problem or error encountered. Techni-Lux is solely responsible for determining a product's eligibility for coverage under warranty. If returning for consideration of credit, all accessories and documentation, original protective material and cartons must be included and the equipment, packing and carton must be in new resalable condition. Credit for returned merchandise will be issued at the lowest current price and is subject to a restocking fee. No returns accepted on discontinued items. Techni-Lux is not responsible for merchandise damaged in transit and reserves the right to refuse any return that is damaged by the carrier, not accompanied by a Return Authorization Number (RMA#) or sent by freight collect.

Claims: All claims must be made within seven (7) days of receipt of merchandise. Any physical damage must be reported to carrier upon receipt of merchandise.

Please record the following information for future reference:
Model Number: AC-DMXSPLIT10R/3 and AC-DMXSPLIT10R/5

Serial Number: _____

Dealer: _____

Date of Purchase: _____

www.Techni-Lux.com

2

Table of Contents

UNPACKING

Immediately upon receipt, carefully unpack and inspect the fixture to verify that all parts are present and have been received in good condition. If any parts appear damaged from shipping or the shipping carton shows signs of mishandling, retain all packing material for inspection and notify the shipper immediately. Save all original packing and carton. In the event that the merchandise is to be returned, the original carton and packing must be used. The customer will be billed for a new carton and packing if merchandise is received without the original carton and packing. The plastic bag shipped with the fixture can be used to keep the fixture clean if stored or installed in a temporarily dusty environment. Do not operate fixture with plastic bag in place.

Save Shipping Materials

The packing and carton are designed to provide the fixture with protection during shipping. Save original packing and documentation for warranty, service and return issues. Additional charges will be applied to return items not received in original or incomplete packing.

Claims

Physical damage must be reported to the Freight Carrier or Shipping Company upon receipt of merchandise. Damage incurred in shipping is the responsibility of the Freight Carrier or Shipping Company. It is the customer's obligation in the event that merchandise is received damaged caused by shipping to notify the Freight Carrier or Shipping Company immediately. All other claims not related to damage incurred during shipping must be made to the Dealer or Distributor within 7 (seven) days of receiving merchandise.

Returns

Returned merchandise must be sent prepaid, in the original packing with a Return Merchandise Authorization number (RMA) clearly listed on the shipping label. Items sent by Freight Collect or without a RMA number will be refused. Call your sales person and request a RMA prior to shipping. Be prepared to provide the model number, serial number and a brief description of the nature of the return. Shipping damage resulting from inadequate packaging is the customer's responsibility. Customer will be charged additional shipping charges to return products received in non original packing and or cartons.

INTRODUCTION

Thank you for selecting the Twin DMX Split 2x5. The Twin DMX Split 2x5 is a DMX signal amplifier and distributor. The unit allows you to split a DMX signal into 10 separate signal outputs, or two different DMX universes into 5 separate outputs. Also it boosts your DMX signal for extensive cable runs between DMX lighting fixtures. To optimize the performance of this product, please read the user manual carefully before use.

FEATURES

- 2x5 way signal amplifier and splitter
- 1 input to 10 outputs, or 2 inputs to 5 outputs each
- Electric isolation between input and outputs
- Signal indicators
- Terminator button for last unit in DMX chain
- DMX input via both 3 and 5 pin XLRs
- DMX outputs in either 3 or 5 pin XLRs (AC-DMXSPLIT10R/3 or AC-DMXSPLIT10R/5)
- DMX thru via both 3 and 5 pin XLRs
- Standard 19" rack mount housing

SPECIFICATIONS

Power consumption: 6 watts maximum
AC power: 120V 50/60Hz
Fuse: F1A/250v
IEC power input, power cord with Edison 5-15 molded plug included
Protocol: DMX512
Rack mounting: 1U
Size: 18.97" x 6.46" x 1.73"
Weight: 6.6 Lbs. (3.0 Kgs)

GENERAL SAFETY PRECAUTIONS

• This product is intended for indoor use only!
• Always turn off, unplug power and allow to cool before attempting to service.
• Ensure that this unit is properly grounded.
• Please keep this User Manual for future consultation.
• To prevent risk of fire or shock, do not expose unit to rain or moisture.
• The unit must be installed in a location with adequate ventilation.
• Be sure no ventilation slots are blocked.
• Make sure power cord is never crimped or damaged.
• Do not remove open cover under any conditions. There are no user serviceable parts inside.
• Disconnect the unit's main power when left unused for long periods of time.
• Never connect this unit's power input to a dimmer.
• Never operate this unit when its cover is removed.
• Never plug an audio line or audio XLR into this device.

PRODUCT VIEW

Front view
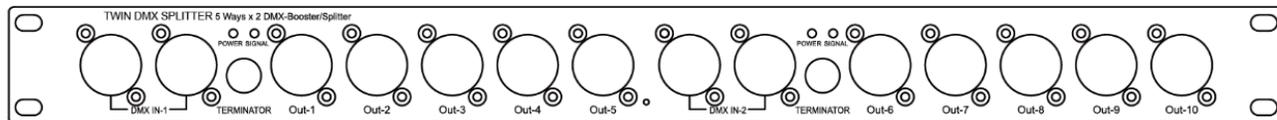
Rear view
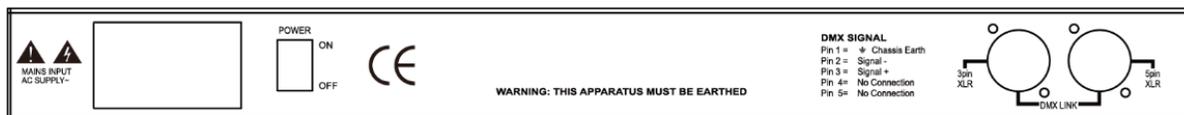
DMX-512 Background

DMX-512 is a digital data transmission standard developed by the United States Institute for Theater Technology (USITT). It is designed to enable control of lighting equipment, originally dimmers. DMX deals solely with the formatting of data for transmission and does not dictate how the data is created or used.

Under DMX, signals are transmitted in much the same way a computer modem transmits data. The Data, divided in to channels, is "Framed" using a start bit, high (1), eight data bits and finally, two stop bits, both high (1). DMX uses no parity to check the integrity of the signal. Instead, DMX relies on the ultra low probability of an error occurring in the same place when the data is resent. The rate at which data is sent is fixed at 250k bps, almost four and a half times faster that a 56k modem. This speed allows all data on a DMX chain to be updated more than 44 times every second.

The transmitted data follows a specific format. DMX allows for 512 channels each with eight data bits, giving each channel the possibility of 256 values. When a data "Packet" is sent, all channels are transmitted one after another. Even if the data on a specific channel has not been changed, it must be sent. In a packet, a "start code" of all zeros is sent before the data to identify the signal as a Standard DMX transmission. This start code is transparent to the user and is handled by the controller.

The physical signals are transmitted using a twisted pair of wires and a common shield, a configuration called Balanced. The controller and all receiving equipment are connected using a "Daisy Chain" connection. The signal is jumped from the controller to a piece of DMX equipment. From there, the signal is jumped to the next piece of equipment and so on until the last piece of equipment is connected. No branches are allowed and the signal does not come back to the controller. The final piece of equipment will have only one cable connection. As a result, all equipment connected to the chain will see exactly the same signal whether it is first or last. When connecting equipment, no particular attention needs to be paid to the order in which the equipment is connected. Depending on the conditions and equipment, a line terminator may

6

be required. If there is any question, in most circumstances the addition of a terminator will not degrade the signal. To make a terminator, add a 120-ohm resistor between the Signal Data Negative and Signal Data Positive pins of a connector in the last piece of equipment in the chain.

Controller Data OUT

Fixtures/Dimmers

IN   OUT   IN   OUT   IN   OUT

Other fixtures or
Data Terminator
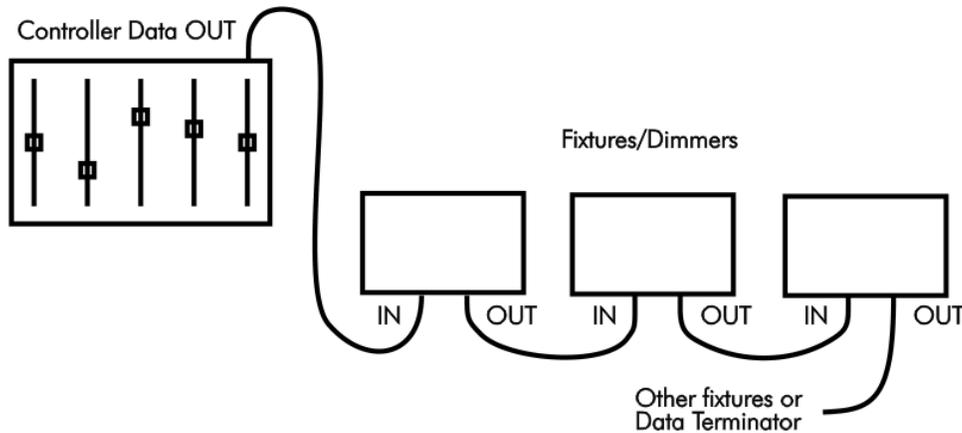
The DMX Standard calls for connections between DMX compatible equipment to be made using 5 pin XLR connectors. However, it is common to see fixtures with 3 pin XLR connectors as these types of balanced or "Lo-Z" cables are common in the audio industry. In either case, pin numbers are the same and carry the same signals.

Pin	Connection
1	Common (Shield)
2	Data Negative (S- or Cold)
3	Data Positive (S+ or Hot)
4	n/c (not used)
5	n/c (not used)

Adapter 5-to-3 pin

Numbers designating each pin can be found on connectors. Converting between the two XLR types is done in a pin-to-pin fashion.   Connect the shields to pin 1, then connect pin 2 to pin 2 and pin 3 to pin 3. This is true for converting either 5 to 3 pin or 3 to 5 pin regardless of either connector's gender. Pins 4 and 5 are not used on the 5 pin XLR connectors.

5 Pin XLR (Socket)
Pin 1: GND(Sheild)
Pin 2: Signal(-)
Pin 3: Signal(+)
Pin 4: N/C
Pin 5: N/C

3 Pin XLR (Plug)
Pin 1: GND(Sheild)
Pin 2: Signal(-)
Pin 3: Signal(+)

3 Pin XLR (Socket)
Pin 1: GND(Sheild)
Pin 2: Signal(-)
Pin 3: Signal(+)

5 Pin XLR (Plug)
Pin 1: GND(Sheild)
Pin 2: Signal(-)
Pin 3: Signal(+)
Pin 4: N/C
Pin 5: N/C
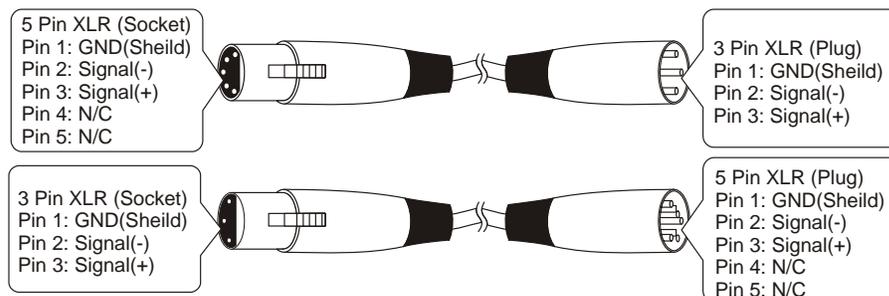
OPERATING INSTRUCTIONS

Front view of AC-DMXSPLIT10R/3 with 3-pin XLR outputs:

Front view of AC-DMXSPLIT10R/5 with 5-pin XLR outputs

Rear view

AC-DMXSPLIT10R has two Input ports, and 10 Optically Isolated Output Ports and user selectable Pass-Thru or Data-Termination. Except between the Input Port and Pass-Thru, each Port is electrically and optically isolated from the other Ports. All input ports have 3-pin and 5-pin connections, they are not isolated from each other and either the 3-pin or the 5-pin may be used but not both. This unit amplifies the Input RS422/485 signal to the 10 Output Ports, it can't reconstruct the digital data. If the integrity of the input signal is degraded from interference or overloading, this may result in dirty or inconsistent data at the Output Ports and/or Pass-Thru.

The maximum number of receiving units on a link is 32. In practice, the maximum number of fixtures per DMX 512 link will vary by: controller type, fixture types, cable type & length and EMI and RFI conditions. The physical signals of DMX512 are transmitted using shielded twisted pair wire. The controller and all receiving equipment are connected using "Daisy Chain" connections. The signal is jumped from the controller to a piece of DMX equipment then jumped to the next

8

piece of equipment and so on. No branching is allowed. The final piece of equipment will have a single cable connected. Depending on conditions and equipment, a line terminator may be required. Termination may improve data integrity but may also reduce the maximum number of devices and/or the maximum total length of cable that can be connected to a Port. A terminator can be made using a Male XLR connector and a 120-ohm resistor connected between Pins 2 & 3. When the AC-DMXSPLIT10R is the last piece of equipment on a link, the TERMINATE Switch can be used to enable termination for the Input link, the Pass-Thru Port is disabled.

DMX512 Standard, connections to equipment are specified to be made using 5-pin XLR connectors. However, it is common to see fixtures with a 3-pin XLR connector, as these types of cables are more common. In either case, pin numbers or connections are the same for 5-pin / 3-pin and Male / Female.

OPERATION MODES

This splitter has two operation modes. Mode 1, the unit takes in DMX via Input 1 and outputs duplicate data to all 10 output XLR connectors (Outs 1 to 10). Mode 2, the unit splits into two separate splitters. In mode 2, the unit takes in DMX via the input 1 and outputs that signal to the first five output XLR connectors (Outs 1 to 5). The second DMX input 2 outputs to the second set of XLR output connectors (Outs 6 to 10).

> NOTE: DMX Thru is only wired to DMX IN-1.

The small switch to toggle the mode is located in the middle of front panel. Use a pin or paperclip to switch betweem 1-in-to-10-out or 2-in-to-5-out modes, and then power on the unit and connect it with DMX signal to see its status by signal LED indicators.
.
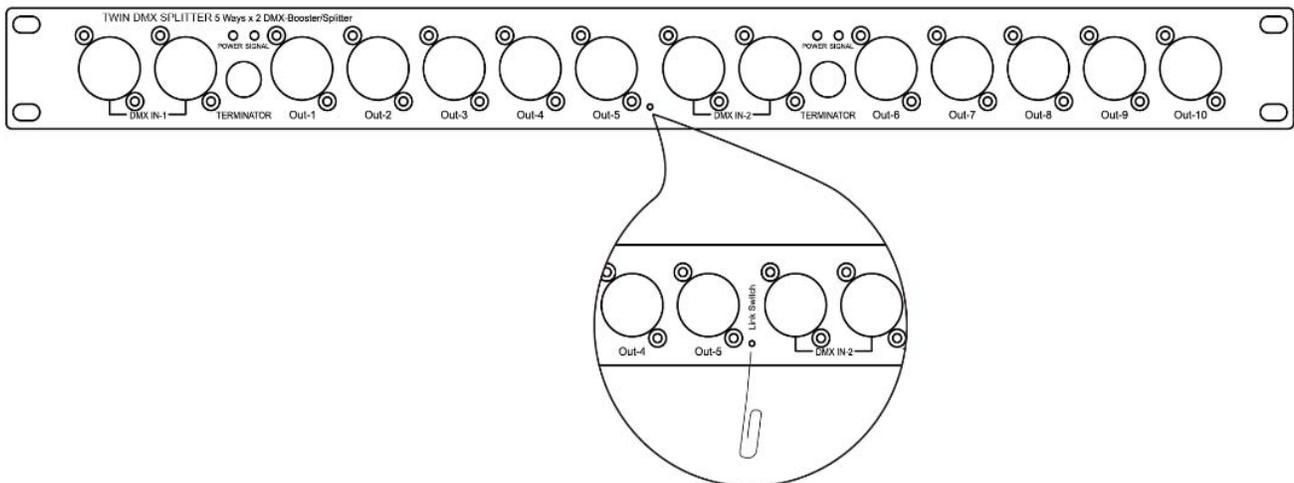
CONNECTION DIAGRAMS

Mode 1: One input to 10 Outputs

Both signal LED indicators on front panel are lit up when you connect either DMX IN-1 or DMX IN-2 with DMX signal. In this case, the unit functions as 1 input to 10 outputs.
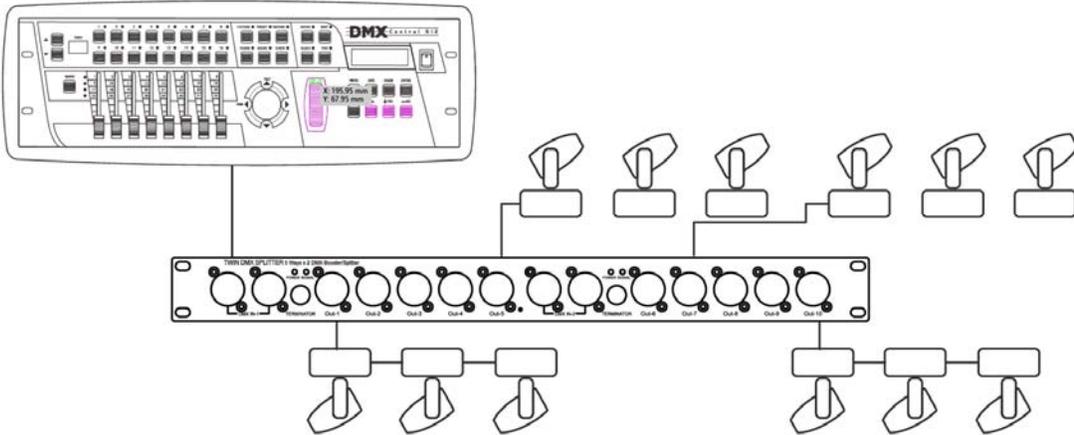
Mode 2: Two inputs to 5 outputs each

Only one of the signal LED indicators on front panel is lit up when you connect either DMX IN-1 or DMX IN-2 with DMX signal. In this case, the unit functions as 2 independent 5way DMX Splitters.
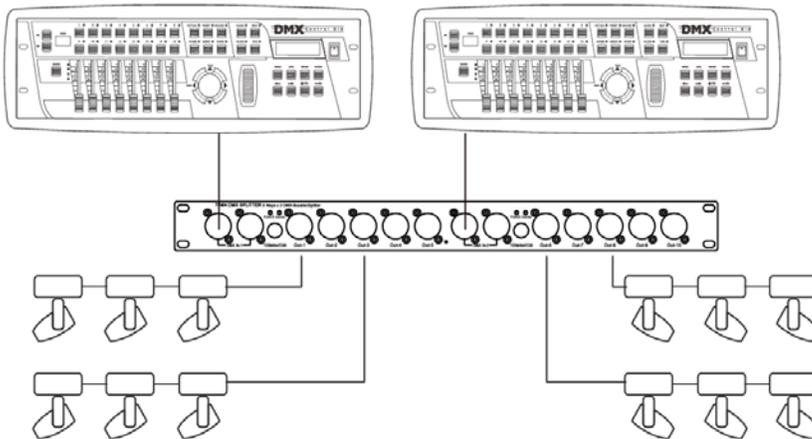
LED INDICATORS

Each channel comes with one red power indicator and one blue signal indicator. When the unit is powered on all red power indicators are lit up and when the unit receives DMX signal the blue indicators are on. This is useful to immediately identify a bad output channel.

MOUNTING

Always consult a qualified professional when rigging. This unit may be placed on any flat surface or standard 19" rack. When selecting a mounting position, take into consideration access for routine maintenance. This unit may be mounted in any position provided there is adequate room for connections.

For rack mounting, use the four standard rack mount holes provided on the integrated rack ears. Do not mount in a place where the unit will be exposed to rain, high humidity or extreme temperature changes. This unit is for dry / indoor use only.

TROUBLESHOOTING

This troubleshooting table is provided for professional use only.

LED Status	Possible Issue
No power LED and no LEDS lighting up.	Check power switch is on. Check outlet power. If power is good, check fuse. Make sure power cord is pushed properly into IEC connector on rear of unit.
Power indicator is not lit up or dim while signal indicator is OK and signal output is normal.	Power indicator fails. Check and replace it.
Both power indicator and signal indicator are not lit up. Also, there is no signal output.	Open circuit between transformer and PCB. Check the 9V output from transformer to PCB.
Power indicator is OK. Signal indicator is not lit up while signal output is normal.	Signal indicator fails. Check and replace it.
Power indicator is OK. Signal indicator is not lit up and there is not signal output.	The 75176 chip on PCB failed. Check and replace it or send in for service.

Accessory Items (sold separately)

Order Code	Description
CA-XLR5/1	Pre-made 1' 5-pin XLR Cable
CA-XLR5/5	Pre-made 5' 5-pin XLR Cable
CA-XLR5/10	Pre-made 10' 5-pin XLR Cable
CA-XLR5/25	Pre-made 25' 5-pin XLR Cable
CA-XLR5/50	Pre-made 50' 5-pin XLR Cable
CA-XLR5/100	Pre-made 100' 5-pin XLR Cable
CA-XLR3/1	Pre-made 1' 3-pin XLR Cable
CA-XLR3/5	Pre-made 5' 3-pin XLR Cable
CA-XLR3/10	Pre-made 10' 3-pin XLR Cable
CA-XLR3/25	Pre-made 25' 3-pin XLR Cable
CA-XLR3/50	Pre-made 50' 3-pin XLR Cable
CA-XLR3/100	Pre-made 100' 3-pin XLR Cable
CO-XLR5M	XLR Connector 5-pin Male
CO-XLR5F	XLR Connector 5-pin Female
CO-XLRTERM5	XLR 5 Pin Data Terminator
CO-XLRTERM3	XLR 3 Pin Data Terminator
CO-XLR3MTO5F	XLR 3 Pin Male to 5 Pin Female Adapter
CO-XLR5MTO3F	XLR 5 Pin Male to 3 Pin Female Adapter

Techni-Lux   www.techni-lux.com