

## **Model 125EE Enhanced<sup>2</sup> DMX512 Isolated Splitter**

### **Description:**

The Enhanced Splitter includes all the features of our standard models with added protection to meet the needs of harsh operating conditions. As with our standard splitters, all outputs are isolated from the input and from the other outputs by optical couplers. Every output has its own power supply and line driver. For protection against electrical storms, the Enhanced Splitter adds four transient absorbers on the input, three on each output, and one on the power line. To protect against miswiring, the Enhanced Splitter has self resetting fuses on the DMX512 input and outputs that protect the Splitter against damaging voltages up to 120 volts. Indicators on each output display termination and fuse status. Indicators on the input display signal present and valid DMX.

The Enhanced Splitter allows connection of DMX receivers (dimmers, color changers, moving lights, etc.) in a *star* configuration as opposed to a *daisy chain* configuration. In a star configuration, each control cable is run to a central point, in this case the splitter. In a daisy chain configuration all the devices are connected on one control cable, the output of one feeding the input of the next.

### **Connections:**

**Line Cord.** The splitter is fitted with a chassis mounted male international power connector (IEC-320). A detachable line cord is provided with a male parallel blade with ground (PBG) plug and a female IEC-320 connector. A wire bale is provided to lock the detachable power cord onto the chassis. The end of the wire bale may be bent to provide a tight fit to the power cord.

The splitter is designed to work on any voltage between 100 and 240 volts, 50 or 60 Hz. Alternate power cords are available to adapt the chassis mounted IEC-320 connector to local power outlets. If a choice of line voltages are available, selecting the lower voltage will allow the splitter to run cooler.

**DMX Input.** The DMX signal is applied to the male XLR connector.

**DMX Outputs.** The DMX signal is available on all five female XLR outputs. Each output is separately buffered. A short or failure on one output cannot affect another output.

**Termination.** For maximum reliability each DMX512 control run needs to be terminated. The input to the splitter is automatically terminated. Each output that is used needs to be terminated at the end of its control run. Sometimes termination is built into the receiver. In other cases a terminator should be plugged into the feed-through connector of the last device. Unused outputs do not need to be terminated.

### **Indicators:**

**Power Indicator.** There is a separate power indicator for each output. When power is applied all five power indicators should illuminate.

**DMX Indicator.** The green DMX indicator will illuminate when a valid DMX512 signal is being received. The DMX Validator™ circuit checks for proper break time, mark after break, and null start code. If any of these timings are outside the DMX512 specification range the DMX indicator will not illuminate.

**Signal Indicator.** The green signal indicator will illuminate when any signal is being received. This indicator is useful if the splitter is being used for a digital protocol other than DMX512. It can also be useful in troubleshooting a DMX512 system because it will show that a signal is being received but (unless the DMX indicator is on) there is an error.

**Un-Terminated Indicator.** The UT indicator is a troubleshooting and warning feature. Doug Fleenor Design believes that a number of DMX512 signal failures are due to improper termination. The UT indicator can help alert the user to potential problems before they ruin the show.

The UT indicator will illuminate when there is no load on the output data lines. The UT circuit is most accurate when there is no signal applied (some digital signals can cause the UT indicator to dim or go out even when there is no termination).

The UT indicator can also be fooled by certain DMX512 receiver circuits. Some DMX input circuits have pull ups on the data lines which can prevent the UT circuit from detecting the load termination. If you believe the line is properly terminated but the UT indicator remains on, try powering down or bypassing the receivers on that line.

### Specifications:

Baud rate:	0 to 250 Kilobaud
Input circuit:	EIA-485 receiver protected by two self resetting fuses 120 ohm input terminator protected by a self resetting fuse Four <i>transorb</i> diodes: two on +Data, two on -Data
Input signal:	0.5 volts minimum, 12 volts maximum Input can withstand up to 240 volts without damage, transients up to 5KV
Output circuit:	"Slew rate limited" EIA-485 driver protected by two 1/10 amp fuses One <i>transorb</i> diode on +Data, one on -Data, and one on the LED (Slew-rate-limited drivers minimize EMI and reduce reflections caused by improperly terminated cables.)
Output signal:	EIA-485 driver yields an approximate 3 volt signal into 120 Ohms Outputs can withstand up to 12 volts without damage, transients up to 5KV Outputs can withstand up to 240 volts with only a blown fuse(s)
Connectors:	Gold plated 5 pin Neutrik D-1 Series
Isolation:	2500 volt optical coupler, 5000 volt split bobbin transformer
Power input:	90 - 240 volts, 50/60 hertz, 0.1 amp (24 watts) IEC-320 (international) input connector
Color:	Silver hammertone with black front and back panels
Size & Weight:	11.25" deep, 1.74" high, 8.25" wide, 4.9 pounds (19" rack adapter available)  Wall Mount 2" deep, 8.5" high, 10.5" wide, 5 pounds Mounting Hole Locations 6" Vertical 9.5" Horizontal

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