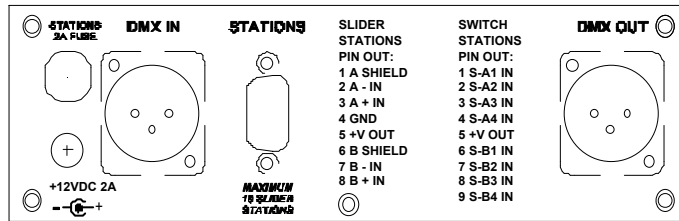
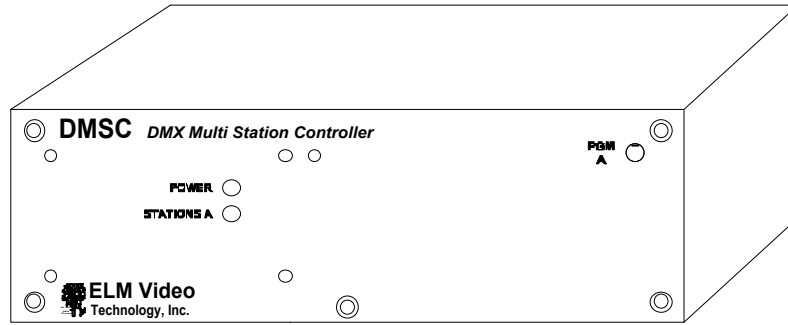


# DMSC

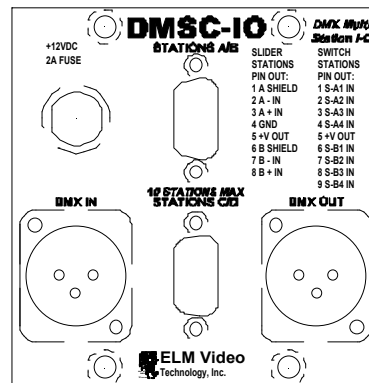
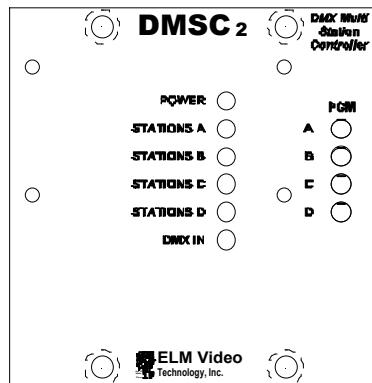
## DMX Multi Station Controller User Guide

### Desktop



Back View

### 2 RU Front/Back Modules



DIN / Wall Mount (20 terminal)

## DMSC OVERVIEW

The DMSC is a DMX multi station controller that stores DMX scenes and allows them to be variably controlled with a slider (potentiometer) or a mechanical (or toggle) switch of any type. The DMSC (PCB) has 1 DMX input and 1 DMX output, and up to 4 slider (potentiometer) or switch inputs. Each slider or switch represents a pre stored static scene and will control the output levels of the respective scene. The DMSC unit has many programmable parameters and options, and is easily setup or programmed with a 16 channel DMX console, controller, or any DMX generating device that has 16 variable channels. A status LED is used to indicate: valid DMX (full on), DMX error (1x blink continues until reset), RDM or non zero start code (2x blinks), programming mode (1x and 2x blinks). The DMSC is not an RDM device but will pass and indicate RDM data. See the **LED Blink Rate Chart** for blink definitions.

- Start Code Pass Thru - blocks or passes RDM and other data packets with any start code other than zero
- Packet Resizer - send a larger or smaller packet size compared to packet size received
- Channel Offset - set received channel 1 to send on any channel
- DMX Off Directive - sets options for the DMX output when DMX is not being received
- Store up to 4 Static Scenes - recalled by sliders, switches, or DMX Loss
- DMX / Scene Merge
  - ◆ Scenes: Off/On turns the 4 scene features off or on
  - ◆ Set Input Type: Switch (optional 5 second transition), Slider (optional level stabilizer)
  - ◆ HTP Merge DMX Receive with Scenes: Off/On - If off, scene(s) will output only if no DMX is being received
  - ◆ Scenes to Merge: Select Scene(s) to be HTP merged

Each preset scene can be HTP (Highest Takes Precedence) merged with each other and optionally merged with the incoming DMX input (if applicable). With custom designs each DMSC DMX output can be merged with other DMSC units or PCB's or other DMG (DMX Merger) units or PCB's to offer custom and flexible output options. For more information on the operation of the DMSC see the **Operation Functional Diagram**.

## CONNECTION

Optionally connect a DMX source into the input connector (5 or 3 pin). If there is a DMX loop thru connector insure that it is properly terminated at the end of the daisy chain. (If there is not a loop thru connector the unit is internally terminated). The DMX output connector will source up to 32 DMX devices (*depending on the devices and configuration*). Connect the slider or switch panels as indicated by the legend on the back of the unit and the configuration examples. For the switch configuration any type non momentary 12VDC or higher rated switch may be used. **DO NOT CONNECT 120VAC TO THE INPUT OF THIS UNIT.** The 12VDC source is provided on pin 5. Solder/connect the switch return wire(s) 1 to pin 1, 2 to pin 2, 3 to pin 3 and 4 to pin 4 as applicable for your unit. If you have an 8 input unit also connect the switch return wire(s) 5 to pin 6, 6 to pin 7, 7 to pin 8 and 8 to pin 8. With the unit off carefully solder/connect the +12VDC output wire on pin 5 to the 12VDC source wire that go to the switch(es). Check for shorts and wiring errors before powering the unit.

**LED BLINK RATE CHART**

Blink Rate	Description
Solid	Valid DMX being received
1x	Program mode or DMX input error detected since powered
2x	PGM mode - waiting for secondary parameter to be set
Off	No DMX being received

## PROGRAMMING / SETUP

Connect a 16 or more channel DMX console, controller, or any DMX generating device that has 16 or more DMX channels with the ability to vary each channel. The data LED will illuminate indicating a valid DMX source is present.

1. Set all (512) DMX channels to zero.
2. Press and hold the PGM (programming and setup) button for 3 seconds until the LED blinks at the 1x rate. Or press and hold the PGM button and re power.
3. Select the setup/programming setting as per **PROGRAMMING TABLE 1** listed below and set the DMX level of the respective channel to 100%. *See also, "PROGRAMMING DESCRIPTION TABLE 2"*
4. Select the additional secondary parameters if applicable as per **PROGRAMMING TABLE 1**, the LED blinks at the 2x rate. *See also, "PROGRAMMING DESCRIPTION TABLE 2"*
5. Some settings will exit automatically, others require press and holding the programming button for 1 - 3 seconds until the LED turns off.









The new setting is stored in permanent memory and exits the programming mode. To set additional settings repeat steps 1~4.

*Note: Only one setting can be programmed at a time. Each setup group must be programmed simultaneously. Some settings allow RTV (Real Time Viewing) of DMX settings, see "PROGRAMMING TABLE 1" .*

**PROGRAMMING TABLE 1:**

Setting	Ch	Description	DMX Level Range	RTV
Default All Settings	1	Factory Reset ( <i>CAUTION: Clears scenes and sets all parameters to default, settings MUST be reprogrammed for unit to work properly.</i> ) (Automatically resets after completion)	128-255	N/A
Start Code Pass Thru	2	0-49% = Off / 50-100% = On ( <i>If on, DMX input stabilization is defeated. Connecting and disconnecting the DMX input may cause momentary false DMX data to be sent</i> )	0-127 / 128-255	Y
DMX Level Cap	3	0-49% = Off / 50-100% = On	0-127 / 128-255	Y
	4	Set value cap 0-100%	0-255	
Packet Size (Send)	5	0-49% = Off / 50-100% = On ( <i>OFF - Packet size is same as received, ON - PS = this value</i> )	0-127 / 128-255	Y
	6	Set packet size 0-100% ( <i>Add 256 to result if ch 7 is 50% or greater</i> )	1-255 (256-512)	
	7	0-49% = value range = 1-255 / 50-100% = value range 256-512	1-255	
Channel Offset (Rechanneler)	8	0-49% = Off / 50-100% = On ( <i>OFF - Channel Offset is OFF, ON - Offset = this value</i> )	128-255	Y
	9	Set packet size 0-100% ( <i>Add 256 to result if ch 10 is 50% or greater</i> )	1-255 (256-512)	
	10	0-49% = value range 1-255 / 50-100% = value range 256-512	1-255	
No Incoming DMX Directive	11	Select Option by setting to 100% then set to these values	255	N
		0% = No Output / Turn Off ( <i>DMX output port turns off</i> )	0-13	
		10% = Hold last value ( <i>If Start Code Pass Thru is on, the last held value may not be valid</i> )	14-38	
		20% = Fade to zero in 5 seconds	39-64	
		30% = Fade to static scene 1 in 5 seconds	65-89	
		40% = Fade to static scene 2 in 5 seconds	90-115	
		50% = Switch to static scene 1	116-140	
		60% = Switch to static scene 2	141-166	
		70% = Switch to static scene 3	167-191	
		80% = Switch to static scene 4	192-217	
Store 1-4 Scenes	12	0% = No Set / Change	0-13	Y
		10% = Store Scene 1	14-38	
		20% = Store Scene 2	39-64	
		30% = Store Scene 3	65-89	
		40% = Store Scene 4	90-115	
Input Type and Scene Merge	13	0-49% = Off / 50-100% = On ( <i>If off, scene functions are off and settings 14~16 are ignored</i> )	0-127 / 128-255	Y
		0% = External Input Type: Switch (Digital) w/ NO 5 second fade	0-13	
		10% = External Input Type: Switch (Digital) w/ 5 second fade	14-38	
		20% = External Input Type: Slider (Analog) w/ NO auto stabilizer ( <i>exact value A/D values</i> )	39-64	
	14	30%+ = External Input Type: Slider (Analog) w/ auto stabilizer ( <i>holds more precise values</i> )	65-255	Y
		0% = Scene 1 ( <i>switches, sliders, &amp; scenes 2, 3, &amp; 4 ignored</i> )	0-13	
		10% = HTP merge scenes 1 and 2 ( <i>switches, sliders, &amp; scenes 3 &amp; 4 ignored</i> )	14-38	
15	20% = HTP merge scenes 1, 2 and 3 ( <i>switches, sliders, &amp; scene 4 ignored</i> )	39-64	Y	
	30%+ = HTP merge scenes 1, 2, 3, and 4 ( <i>all switches, sliders, &amp; scenes HTP merged</i> )	65-255		
	HTP Merge incoming DMX with Scenes: 0-49% = Off / 50-100% = On ( <i>OFF = DMX Input OVERRIDE, scenes visible when no DMX is present if setting 13 ~15 are set properly</i> )	0-127 / 128-255		Y

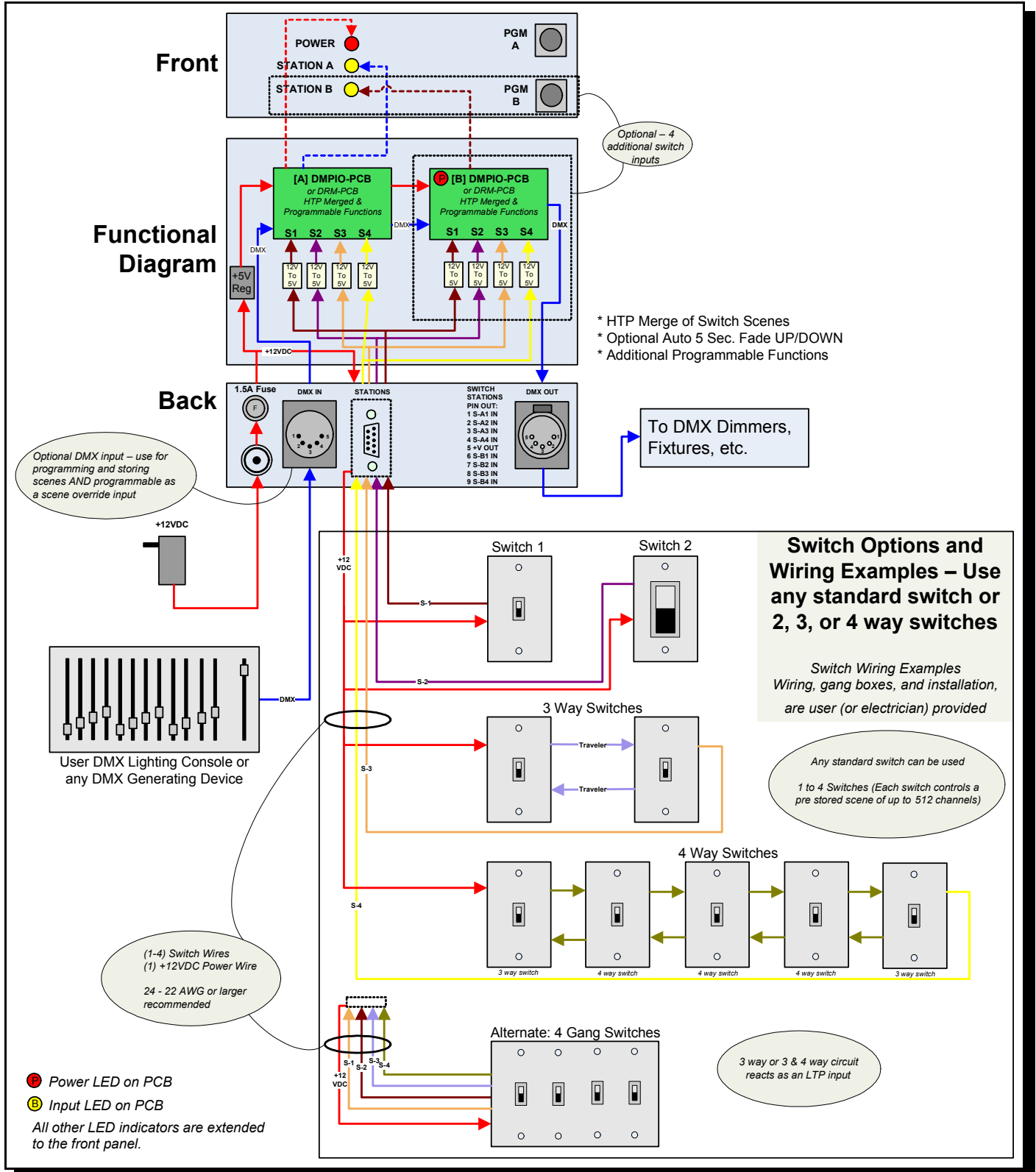
## PROGRAMMING DESCRIPTION TABLE 2:

	<p><b>CH 1: - RESET ALL SETTINGS</b> - USE WITH CAUTION - This setting will reset all settings to default, i.e. set Level cap to 100%, packet size to 512, channel offset to 0, No DMX (or DMX Loss) directive to “turn off output”, all scene stored values to zero, scenes off, switch input w/ no fade, DMX receive data / scene merge off, scene 1 only.</p> <p>With the unit in the Setup/Programming mode (LED blinking 1x), move channel 1 to 100% and press the program button to store the setting.</p>
	<p><b>CH 2: - START CODE PASS THRU</b> If set all packets will pass thru with incoming start code values, if clear only a start code value of zero will pass thru. If a start code value of 1-255 or RDM is detected the data led will blink 2 x rate with either setting. <i>Note: DMX input stabilization is defeated if this function is on. Also note: RDM is data is passed thru only and does not resend data back to the controller.</i></p> <p>With the unit in the programming mode (LED blinking 1x), move channel 2 to 100%, then set channel 2 to 0 for ‘No Pass Thru’, or 100% for ‘Pass Thru’, then press the program button and release to store the setting, 2 blinks confirm the change.</p>
	<p><b>Chs 3~4: DMX LEVEL CAP</b> The DMX output value will not exceed this set value (default is 255 or OFF)</p> <p>With the unit in the Setup/Programming mode (LED blinking 1x), move channel 3 to 100%, set channel 4 to the desired level cap, then press the program button and release to store the setting, 2 blinks confirm the change.</p>
	<p><b>Chs 5~7: SEND PACKET RESIZER</b> If set ON the DMX output packet size will be set by this value, increased or decreased. If OFF the output packet size is the same as the received packet size. For example, if a DMX packet size of 128 is being received and a packet size of 400 channels is desired, then set this value to 400. Or for example if a DMX packet size of 400 is being received and a packet size of 128 channels is desired, then set this value to 128. (default is OFF) <i>Note: if increased - non received values in the packet will = 0, if decreased unused valid DMX values will be ignored.</i></p> <p>With the unit in the Setup/Programming mode (LED blinking 1x), move channel 5 to 100%, set channel 6 to 0 if the desired range is between 1-255, or set to 100% if the desired range is between 256-512. Set channel 7 to the (low) value range from 0 to 100%. These settings can be viewed while in the programming mode. Then press the program button and release to store the setting, 2 blinks confirm the change. <i>Programming tip, if a DMX analyzer is available and while ‘Real Time Viewing’, the packet size can be viewed as channels 6 &amp; 7 are adjusted.</i></p>
	<p><b>Chs 8~10: CHANNEL OFFSET / RECHANNELER</b> This setting will reassign DMX input channel 1 to this value. For example, if the offset value is set to 3, then DMX input channel 1 will be reassigned to DMX channel 4 (addition of 3, or offset of 3). An offset of 100 would reassign channel 1 to DMX out channel 101. (Default is 0 or OFF)</p> <p>With the unit in the Setup/Programming mode (LED blinking 1x), move channel 8 to 100%, set channel 9 to 0 if the desired range is between 1-255, or set to 100% if the desired range is between 256-512. Set channel 10 to the (low) value range from 0 to 100%. These settings can be viewed while in the programming mode. Then press the program button and release to store the setting, 2 blinks confirm the change. <i>Programming tip, while ‘Real Time Viewing’ set channel 1 to a value of 1 and adjust channels 9 &amp; 10 until the ‘1’ is in the desired start channel.</i></p>
	<p><b>CH 11: NO DMX DIRECTIVE</b> 1 second after DMX is not being received or lost, this setting directs the unit to respond accordingly. (Default: “No Output / Turn OFF”)</p> <p>With the unit in the Setup/Programming mode (LED blinking 1x), move channel 11 to 100%, then adjust to the desired setting per <b>PROGRAMMING TABLE 1</b>. Then press the program button and release to store the setting, 2 blinks confirm the change.</p>
	<p><b>Ch 12: STORE 1~4 STATIC SCENES</b> The DMSC will store up to 4 static scenes of 512 channels each. Scenes are recalled either by HTP merging with incoming DMX, HTP merging with each other, switch or slider variations, and/or DMX loss switch or slider variations.</p> <p>With the unit in the Setup/Programming mode (LED blinking 1x), move channel 12 to 100% to initiate the scene store setting, then adjust channel 12 to the desired scene (1 ~ 4) to store to as per <b>PROGRAMMING TABLE 1</b> (i.e. 10% for scene 1, 20% for 2, 30% for 3, and 40% for 4). Press and release the program button, the LED blinks at 2x rate. Now set the static scene to the desired values (Real Time Viewing is available), then press and hold the program button until the LED turns off. The new static scene is now stored, 2 blinks confirm the change.</p>
	<p><b>Chs 13~16: INPUT TYPE &amp; SCENE MERGE</b> These settings are used to set the input type, either switch (digital) or slider (potentiometer/analog), and sets the merging options of the scenes with each other, see <b>PROGRAMMING TABLE 1</b>. All 4 parameters (ch 13 ~16) will need to be reprogrammed with any changes.</p> <p>To enter this setting adjust channel 13 to 100%. If the scenes are not used, readjust channel 13 to 0%, press and hold the program button to store the new setting. All other settings (14~16) are ignored. To set up the scenes and settings, adjust channel 14 to the type of scene control input (switch or slider) that is connected and the desired auto 5 second fade option as per <b>PROGRAMMING TABLE 1</b>. Then adjust channels 15 and 16 to the scene merging options as per <b>PROGRAMMING TABLE 1</b>. Once all 4 parameters are set, press the program button and release to store the setting, 2 blinks confirm the change. <i>NOTE: Any unused analog inputs should be connected to ground.</i></p>

*Plan all DMX changes carefully, understand how each mode will react, and thoroughly test each device after any configuration changes. To abort any settings while in the programming mode, toggle the power to reset the unit, and reenter if desired.*

**CONNECTION EXAMPLES**

Store and recall up to 8 static scenes with any type switch or standard 2, 3, or 4 way switches



## SPECIFICATIONS

DMX CONTROL WARNING:	NEVER use DMX data devices where human safety must be maintained. NEVER use DMX data devices for pyrotechnics or similar controls.
Manufacturer:	ELM Video Technology, Inc.
Name:	DMX Multi Station Controller
Functional Description:	DMX input and output with optional external slider panel(s) or switch(es) with optional merge panel scene data with incoming DMX and manipulable outbound DMX.
Chassis:	Anodized Aluminum .093" thick RoHS compliant.
External Power Supply:	100-240 VAC 50-60 Hz, Output: Regulated 12VDC/2A
Power Connector:	5.5 x 2.1 x 9.5
External Fuse:	2.0 Amp 5 X 20 mm
PCB Fuse:	.5 ~ .75 Amp for each
DC Current:	Apx 240mA (output full DMX load of 60mA) per DMPIO PCB installed
Model Number:	DMSC-12V3/5P
UPC:	
Operating Temperature:	32°F to 100°F
Storage Temperature:	0°F to 120°F
Humidity:	Noncondensing
Non-Volatile Memory Writes:	Minimum 100K, Typical 1M
Non-Volatile Memory Retention:	Minimum 40 Yrs, Typical 100 Yrs
Station I-O Connector:	DB9 9 Pin female serial connector
Switch Input Voltage Max/Min:	+12VDC / +6VDC (at input)
Switch Input Current Max/Min:	10mA / 6mA
Data Type:	DMX (250Khz)
Data Input:	DMX - 5 (or 3) pin male XLR, <i>Pin 1 - (Shield) Not connected, Pin 2 Data - , Pin 3 Data +</i>
Data Output:	DMX512 output 250 kHz, 5 and/or 3 pin female XLR <i>Pin 1 - Power supply common, Pin 2 Data - , Pin 3 Data +</i>
Dimensions:	3.7 x 6.7 x 2.1 inches
Weight:	1.5 pounds