e:cue
LIGHTING CONTROL

Butler PRO DC

Setup Manual

Butler PRO DC Setup Manual

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Karl Schurz-Strasse 38
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Comments to:
documentation@traxontechnologies.com

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Safety instructions

	The Product must only be installed and put into operation by a qualified electrician. The applicable safety regulations and accident prevention regulations must be observed. Otherwise the unit may be damaged.
	Only work on the product when it is de-energized to prevent electrical shocks. Incorrect handling may damage the unit.
	Do not route network, DMX/e:pix or any other communication line together with power lines. Data traffic or functions can be disturbed.
	The Product may only be operated in the operating modes described in the manual. All other applications are considered to be inappropriate use. If the Product is not used as intended, there is no guarantee that it will operate safely.
	To prevent the device from overheating, only operate it in well-ventilated environment. The ventilation slots may not be obstructed. Otherwise the unit may overheat and fail.
	Device components can reach high temperatures! Let unit cool down after operation before mounting or removing unit to avoid burnings.
	Repairs may only be carried out by authorized, specially trained personnel to ensure reliability. When in doubt, contact e:cue service. Incorrect handling may damage the unit
	It is imperative that main power is supplied via an isolating device and a circuit-breaking device (power contactor) in any case, which can be controlled at all times.
	Only use a power supply cable to provide 20 ... 28 V DC and a power of 12 W. Other supply voltages may damage the Butler PRO DC or lead to malfunctions.

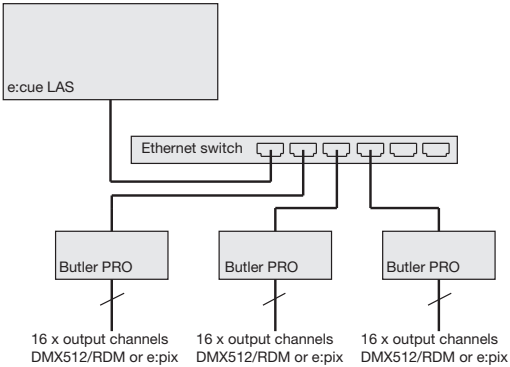
System description

The e:cue Butler PRO DC is a 16 channel DMX/RDM or e:pix interface that acts as an interface between a server running the e:cue Lighting Application Suite and devices with DMX512 or e:pix connections. The Butler PRO DC usually gets mounted in a universal 19-inch rack system or on walls or ceilings.

The server connection is a standard CAT5 RJ45 based Ethernet interconnect. The device connection is also RJ45 based. All usual CAT5 RJ45 cables can be used.

Please note that e:net requires an isolated network segment and cannot operate properly when using e. g. Internet traffic or video/audio streaming in the same network simultaneously.

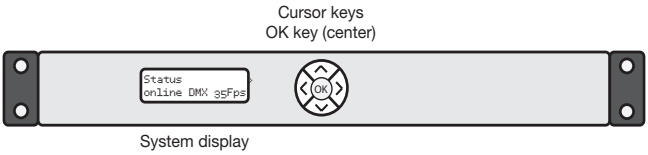
System diagram



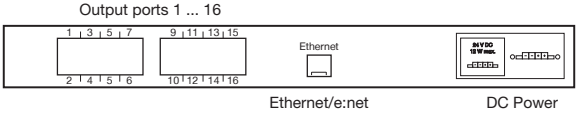
Use standard CAT5 RJ45 Ethernet cabling between server, switch and Butler PRO DC. Connection without Ethernet switch and with an Ethernet cross cable is not recommened. To connect DMX using a XLR5 type plugs, please use a adaptor cable, item number 40005, available as accessory or contact your nearest e:cue distributor for a suitable adaptor cable.

Connections

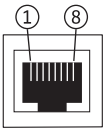
Frontplane



Backplane



Terminal pinning

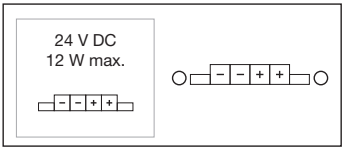


pin no.	signal
1	DMX-/e:pix-
2	DMX+/e:pix+
3	GND
4	n/c
5	n/c
6	n/c
7	n/c
8	n/c

Every DMX bus should be terminated with a 120 ohms resistor to stabilize the DMX connection.

Power supply

The Butler PRO DC power connection on the backplane has 2 + 2 poles for daisy chaining power lines. Take care not to change the DC poles.



Mounting and installation

Mount the Butler PRO DC in a standard 19-inch rack system. Use appropriate rack screws, cage nuts and spring clips for mounting.

Unit distribution

As the Butler PRO DC has no active cooling, place a maximum of two units together, leave one unit free or place a passive device, followed by the next two units. Additionally care for:

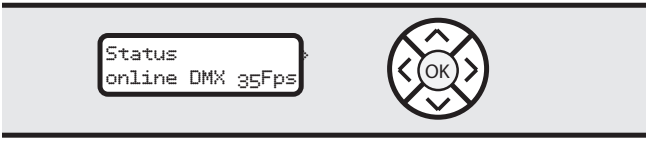
- closing of unused units with rack plates
- mounting in a fan-ventilated closed rack
- placement of the rack in an air conditioned room

Connect the Butler PRO DC with the outputs of the Ethernet switch and with power.

When installing and mounting more than one Butler PRO DC in factory state, make sure that only one Butler PRO DC gets connected and configured at one time. If connecting more than one device with the factory IP address (192.168.123.1) the Ethernet connection will not work

User interface

The Butler PRO DC comes with a circular keypad and an LC display for operation and setup. During regular operation the Butler PRO DC displays status and operational messages on the display. When in setup mode, parameters and values are displayed, the keypad is used for selecting parameters and changing values. Only keys, that are allowed at a certain state, are lit up, either in operational or in setup mode. This picture is the Butler PRO DC DMX.



After powering up the Butler PRO DC, the loader shows the loading progress and revision levels of the loader and the firmware. After loading is completed, the Butler PRO DC enters operational mode. The setup mode must be selected separately.

During online operation, usually the IP address and other network parameters are shown, also the host address of the server running the Programmer of the Lighting Application Suite. All used values for parameters are just examples, they depend on the configuration of your Butler PRO DC.

Operational messages

After powering-up and loading the Butler PRO DC cycles through this set of status messages (DEVICENAME is the name given via manual or online setup):

Butler PRO DC <DMX> ©2013 traxon/ecue	Start screen of the Butler PRO DC DMX.
Butler PRO DC <EPIX> ©2013 traxon/ecue	Start screen of the Butler PRO DC e:pix.
*** ERROR *** no snapshot found	After booting the Butler PRO DC is offline (no LAS server present) and no snapshot was stored for offline state. Press the OK-key to clear the message and save a snapshot for offline state as shown later.
DEVICENAME <offline>	The Butler PRO DC is in offline mode and not connected to the PRO DCgrammer of the LAS.
DEVICENAME no output	The Butler PRO DC does not output any data (no snapshots defined).
DEVICENAME IP: 192.168.123.123	The IP address of this Butler PRO DC.

DEVICENAME MASK: 255.255.255.0	The netmask that is used for the IP connection, default is 255.255.255.0
DEVICENAME <online>	The Butler PRO DC is in online mode, connected to the PRO DCgrammer of the LAS.
DEVICENAME Mode: DMX 35 Fps	The Butler PRO DC DMX name and speed, the maximum possible framerate is 35 fps
DEVICENAME Mode: EPIX 31 Fps	The Butler PRO DC e:pix name and speed, the maximum possible framerate is 35 fps
DEVICENAME Connected to: DEVICENAME 192.168.123.100	The IP address of the LAS server the Butler PRO DC is connected to.
*** WARNING *** temperature high!	The Butler PRO DC has exceeded the allowed internal temperature. The actual temperature is displayed. Switch off the Butler PRO DC to cool it down. Check mounting conditions in the installation chapter of this manual.

Display and keypad use

Displayed messages without a right angle bracket (**>**) are info messages. Messages with a right angle bracket are entries into submenus. Use the **>** key to enter submenus and parameter settings. Use the **<** key to return. Use the **^** and **v** keys to select parameters. Use OK to acknowledge settings or selections with a checkmark or a cross. Only keys that are valid entries are lit up on the keypad.

Parameter setup

Using the **^** and **v** key from the main menue you can step manually through the first-level menu.

Device Info >	Enter Device Info mode with **>** key
Setup >	Enter Setup mode with **>** key.
Status > online DMX 35 Fps	Enter Status mode with **>** key for the Butler PRO DC DMX.

Status >` `online EPIX 31 Fps	Enter Status mode with **>** key for the Butler PRO DC e:pix.
DEVICENAME ` `<online>	Returned to the default display.

Device Info mode

Info IP ` `192.168.123.250	The IP address of this Butler PRO DC.
Info MAC ` `00:16:1c:f1:17:b7	The MAC address of this Butler PRO DC.
Info FW Version ` `1.0.123	The current firmware version installed-
Info FPGA Version ` `1.0.1	The FPGA command set version installed.
Info HW rev. ` `1	The hardware revision level of this Butler PRO DC.
Info Keypad Version ` `1.0.5	The firmware version of the keypad controller.
Info connected to ` `192.168.123.100	The IP address of the LAS server.
Info temperature ` `37 C	The internal temperature of the Butler PRO DC in degree Celsius.

Leave the Device Info mode by pressing the **<** key.

Setup mode

Selecting and changing parameter values

In delivery state the setup dialogue is password-protected. The default password is “ecue”. The password can be changed or deleted in the online configuration with the Programmer.

- Cycle through the parameters with the **^** and the **v** keys.
- Select the parameter to change with the OK key.
- Use the **<** and **>** keys to select the position to change.
- Use the **^** and **v** key to change the value. Keep the key pressed for a fast change.
- Move the cursor to the right and select the cross to cancel the change, select the checkmark to make the entry valid. Press the OK key
- For the device name press the OK key to initialize editing mode and select position and value as above. Press OK again to get to the command selection in the top row. With the **<** or **>** key select to save, cancel or delete characters. Select the cross to cancel, the checkmark to apply the changes or the back-arrow to delete the characters in the name. Press the OK key.

With the parameter `Advanced settings >` an additional level of functions is entered for special features. Use the **<** key to leave this menu or any other menu level to return to operational mode. In the setup parameters there is an additional command set for Test Mode. Select this test mode by pressing the right-key when `Enter Test Mode >` is displayed.

Setup parameters and values

Standard parameters	
`enter Password`	With the cursor keys **<** and **>** select position and with **^** or **v**characters. Press OK to enter the password.
`Setup IP` `192.168.123.200`	The IP address of the Butler PRO DC. Factory default is 192.168.123.1
`Setup Subnet Mask` `255.255.255.000`	The subnet mask. Default is 255.255.255.0
`Setup Gateway` `192.168.123.001`	The network gateway. If no gateway is use, set to 0.0.0.0
`Setup NAME` `Butler PRO DC`	The device name, used in most displays.
`Setup GROUPID` `001`	Set the group id for synchronisation of snapshots in a set of Butler PRO DC.

Setup STARTUP show snapshot1	Setup the show to display on startup, snapshot 1, snapshot 2 or no output.
Setup OFFLINE show snapshot2	Setup the show to display if the Butler PRO DC is offline, select snapshot 1, snapshot 2 or no output.
Advanced settings >	Enter the Advanced Settings mode.

Use the **<** to leave the setup mode.

Advanced Settings mode

Reset to defaults	Resets all parameters, including IP address, to the default values.
Reset device	Resets the device and reboots the Butler PRO DC. Does not change the parameter settings of the Butler PRO DC.
Enter Loader Mode	Enters the loader mode and waits for commands, e. g. to update the firmware. With the **^** and **v** keys you can view the Butler PRO DC main parameters and the escape step. To escape and leave the loader mode, select START APP with **^** or **v** and press OK. The Butler PRO DC loads its firmware now.
Enter Test Mode >	Calls the Test Mode command set, Press OK to enter Test Mode.
Capture Output SLOT1	Captures the current state as snapshot 1 for offline or startup display. All Butler PRO DCs with the same GroupID also capture this state.
Capture Output SLOT2	Captures the current state as snapshot 2 for offline or startup display. All Butler PRO DCs with the same GroupID also capture this state.
Contrast <bar line>	Set the contrast of the display.

If you want to have all fixtures turned off at startup, send a pattern with all zeroes for all channels to the Butler PRO DC. Use this pattern as snapshot for startup display to make sure that all fixtures are off.

Test mode

In Test Mode you can test all or a single output of the Butler PRO DC and the connected fixtures. There are three test modes: value, fade and strobe. In value mode a fixed DMX value is sent to all channels as white value. In fade mode the channels are faded from zero to a defines value in a loop. In strobe mode all channels get a square signal to realize a strobe effect.

After selecting from the advanced settings you reach level one of the test mode:

`select Output` ` none`	Select the outputs to test. Press the OK key and select the tested outputs with the next step.
`select Output` `>none`	With the **^** or **v** key select all, none or a single output of the Butler PRO DC. Press the OK key again to set the output channel(s) and return. Press the **v** to select the maximum brightness in test mode.
`Set Level` `255`	Press OK, use the cursor keys to select and set position and value of test brightness. The maximum value is 255. Press OK to set this value. Press **v** to select the test mode.
`select Test Mode` ` value`	Press Ok, with the **^** or **v** key select the test mode: value, fade or strobe. Press OK again to select the test mode. The test mode runs until you leave test mode with the **<** key.
`Output Mode` ` dmx`	Select the output mode dmx or epix Butler PRO DC e:pix only.

For the test of a subset of fixtures you can select a block size and block move value with the **>** key. This submenu is reached in every position of the first level as a second level. Use **^** or **v** to navigate.

Block size <value>	To select a block size, press OK and select 1, 2, 3, 4, 5, 6, 48, 192 or 512 channels. Press OK again to set the block size (Butler PRO DC DMX)
Universe size 512 (def DMX)	Select the size of one universe for the Butler PRO DC e:pix only.
Block move >manual	To select block move speed, press the OK key. Select a timing of 50 ms, 100 ms, 500 ms or 1 s for automatic movement. Select manual for manual stepping through channels. Press OK to set the block move speed.

Return from the second level submenu to the first level with the **<** key.

While the test is running you can switch to a third level menu from the second level with the **>** key. In this third level menu the current DMX or e:pix address is displayed.

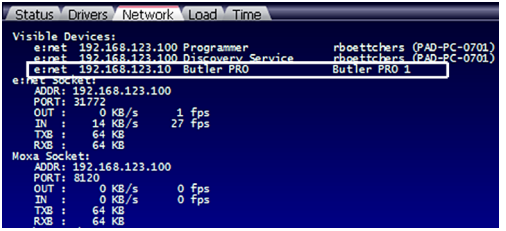
Start Address <value>	In automatic (timed) mode the current DMX start address of the block. With the **^** and **v** keys running direction is switch to up or down direction. Keeping the key pressed a fast change is possible. With the OK key toggling the test mode gets paused and restarted again. In manual mode the start address is stepped up or down with the **^** or **v** keys.

Return to the second and first level of the test mode menu with the **<** key.

Pressing **<** again returns to the Advanced Settings.

Online configuration

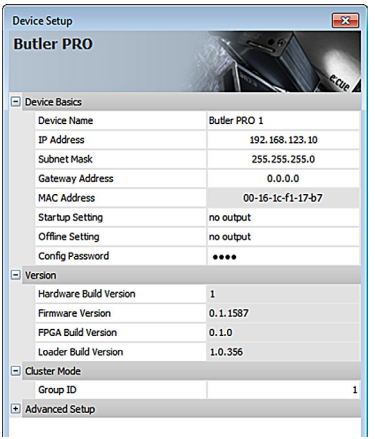
Connect the Butler PRO DC via a switch to a system running e:cue Lighting Application Suite; start the PRO DCgrammer.



Select the Network tab in the status window in the upper left. Any Butler PRO DC devices which are connected to the network should appear in the list. If they do not show up in the list, check if the IP address settings for your computer are correct and the network range is 192.168.123.*, the default address of any new Butler PRO DC is 192.168.123.1. Please also make sure your fire wall does not prevent communication between the computer and the Butler PRO DC. The Butler PRO DC should become visible.

Click on the Butler PRO DC line in the Network display, this opens the device configuration dialog. Here you can set all driver properties of the Butler PRO DC. The IP address typically this should read 192.168.123.1 at this stage, when the Butler PRO DC is still set to factory defaults.

- Assign a new IP address e.g. 192.168.123.200.
- Use the same PRO DCcedure for the remaining network parameters: Subnet Mask - usually 255.255.255.0, Gateway – no gateway



- Give the Butler PRO DC a unique name.
- Apply the changes with the Ok button

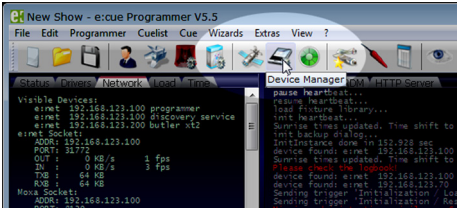
The parameters to configure in online mode are the same as configuring the Butler PRO DC manually. Additionally a new password may be set and the DMX parameters can be changed. Parameters in grey are read-only and cannot be changed, like the MAC address or the version numbers. If the password is omitted, the setup will not be protected.

Network parameters

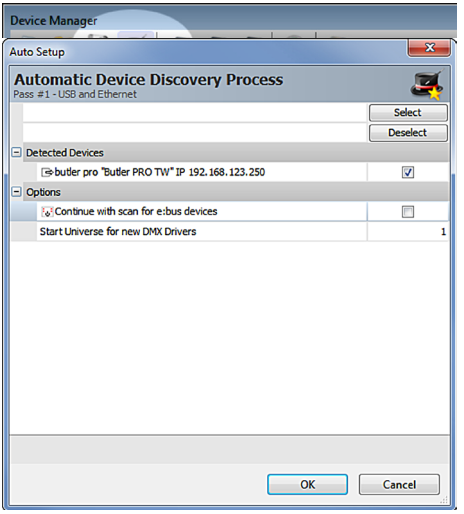
Device Basics	
Device Name	The device will be displayed with this name in the e:cue PRO DCgrammer.
IP address	The IP address of the device (default: 192.168.123.1)
Subnet Mask	The netmask of the device (Default: 255.255.255.0)
Gateway address	The default gateway of the device (Default: no gateway)
MAC address	The physical address of the device (read only)
Startup Setting	The snapshot to be used in startup phase or none.
Offline Setting	The snapshot to be used in offline phase or none.
Config Password	The password to enter manual configuration mode.
Versions	
Hardware Build Version	The hardware version (read only).
Firmware Build Version	The software version (read only).
FPGA Build Version	The command set for the internal FPGA (read only).
Loader Build Version	The version of the firmware loader.
Cluster Mode	
Group ID	The cluster ID of this Butler PRO DC.
Advanced Setup (do not modify unless instructed so)	
Lock Settings	Checkmark, set by default, avoids changes for DMX/e:pix and RDM by chance.
BRK Length	Break signal length in µs for the DMX/e:pix protocol.
MAB Length	Mark after break length in µs for the DMX/e:pix protocol.
BRK Length RDM	Break length in µs for the RDM protocol (Butler PRO DC DMX only).
MAB Length RDM	Mark after break length in µs for the RDM protocol (Butler PRO DC DMX only).

RDM Switch Time	The RDM Tx to Rx length in in µs (Butler PRO DC DMX only).

To add the Butler PRO DC to the Programmer configuration start the Device Manager.



Execute the Automatic Setup Wizard. The Butler PRO DC will be found and displayed:



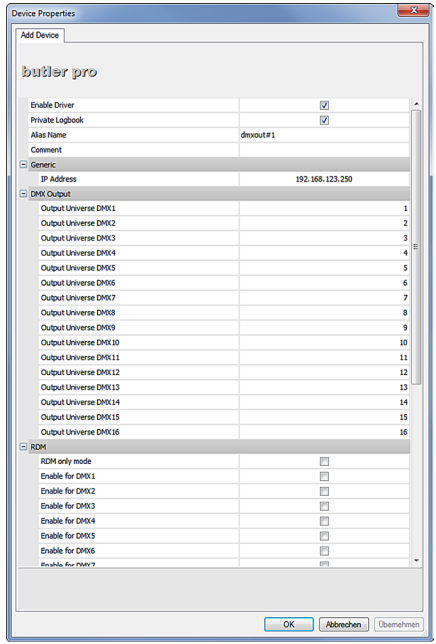
Set the checkmark for the Butler PRO DC to add it to your setup or click the Select button. To set the driver properties for the Butler PRO DC double-click the Butler PRO DC in den device overview of the Device Manager.

Click Ok to add the Butler PRO DC to the Programmer configuration, the Butler PRO DC is now available.

Double-click the new Butler PRO DC in the Device Manager and an additional configuration dialog gets displayed to set more parameters for the Butler PRO DC.

Using this device setup dialog you can set the DMX universes as well as the required RDM feedbacks for the channels of the Butler PRO DC.

When finished close the device setup dialogue with `Ok`.

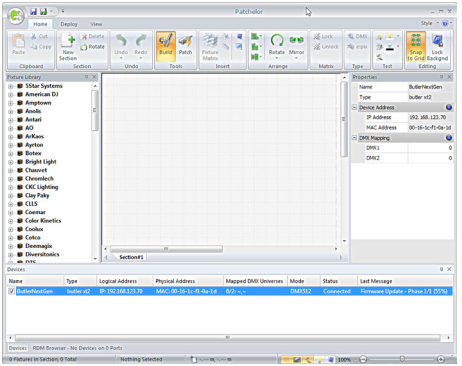


Connecting more than one Butler PRO DC

In case you have several Butlers PRO DC they need to be configured one at a time. Do not connect all of them to the network immediately! This is due to the fact that the devices all come with the same IP address by factory default. If they are connected simultaneously an IP address conflict will occur and configuration is not possible. Instead, connect the Butlers PRO DC one at a time. Connect the first Butler PRO DC and assign a new IP address to the device (e. g. 192.168.123.11). Repeat this sequence until all devices have been assigned with an individual IP address. In a next step all devices can be hooked up to the connecting network.

Firmware update

To update the firmware of the Butler PRO DC proceed the following way:



- Start the Patchelor of the e:cue Lighting Application Suite
- In the list of found devices select the appropriate Butler PRO DC.
- Press the right mouse button and select `Update Firmware`.
- Select the file with the new firmware (*.bxt).
- After the download is complete the Butler PRO DC will restart.
- The new firmware is available now.

Troubleshooting

PRO DCblem	Check	Reason	See also
The Butler PRO DC does not go online in the Programmer/ Patchelor	Does the LAS server have a fixed network address? Is a correct IP address assigned? Are Butler PRO DC and LAS server in the subnet?	The Butler PRO DC must be in the same IP subnet as the Computer. Example: 192.168.123.xxx	Setup Manual
	Is the network adapter in the LAS server and in the Programmer/ Patchelor Network Card configured correctly?	The e:net interface IP address must be assigned in the Programmer/ Patchelor.	LAS Setup Manual
	More than one Butler PRO DC with the same IP Address?	Factory default of Traxon products is IP: 192.168.123.1	Setup Manual
	Is there a direct connection between the LAS server and the Butler PRO DC without a Ethernet switch?	Some network adapters do not support a direct connection. Use an Ethernet switch in any case.	Setup Manual

RDM without function	Is RDM enabled in the Programmer's Device Manager for the Butler PRO DC?	RDM "Enable for DMX 1 to 16" must be activated in the Device Properties in the Programmer for this Butler PRO DC.	LAS Setup Manual

Technical specifications

The Butler PRO DC is certified according to

EN 55022, EN 55024, EN/UL 60950

CE

General specifications

Dimensions (W x H x D)	482 x 44 x 142 mm (incl. mounting brackets)
Weight	1200 g
Power	20 ... 28 VDC
Power consumption	max. 12 W
Operating/storage temp.	0 **...** 40 °C/32 **...** 104 °F
Operating/storage hum.	0 **...** 80%, non-condensing
Protection class	IP20
Housing	Aluminium, polyamide 6.6
Mounting	19-inch rack mounting, wall mounting

Engine specifications

User interface	4 cursor keys, OK key
System links	1 x e:net (RJ45 Ethernet) 16 x DMX (RJ45) or 16 x e:pix
Display	2-lines, 40 characters/line display
Data storage	micro SD card, internal

e:net specifications

Connection	RJ45, 8P8C
Speed	100 MBit/s
POE capability	no

DMX output specification

Number of outputs	16 DMX universes, 8,192 channels
Short circuit protection	yes, reversible
DMX operation	USITT DMX512-A, RDM ANSI E1.20,
Connectors	RJ45 receptacle connector, Traxon pin configuration

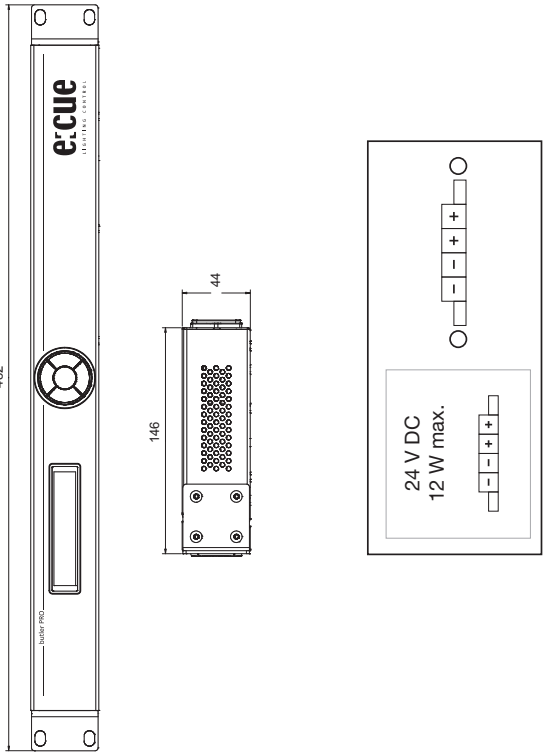
e:pix output specification

Number of outputs	16 e:pix universes, 32,768 channels
Short circuit protection	yes, reversible
e:pix	Traxon standard
Connectors	RJ45 receptacle connector, Traxon pin configuration

Appendix

Dimensions and power connection

All dimensions in mm



Notes

Notes

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www.traxontechnologies.com and www.ecue.com

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