

PART NUMBER

Description: User Manual for the complete LumiNode series.

REVISION: 20200114-REV 2.1.1

**Luminex**  
NETWORK INTELLIGENCE

# LumiNode USER MANUAL



## LUMINODE PRODUCT FAMILY

LumiNode 1 / LumiNode 2 / LumiNode 4 / LumiNode 12

THANKS FOR CHOOSING LUMINEX

MADE IN BELGIUM



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**LUMINODE,  
BUILT FOR TODAY,  
DESIGNED FOR  
TOMORROW**

# 1. INSTALLATION

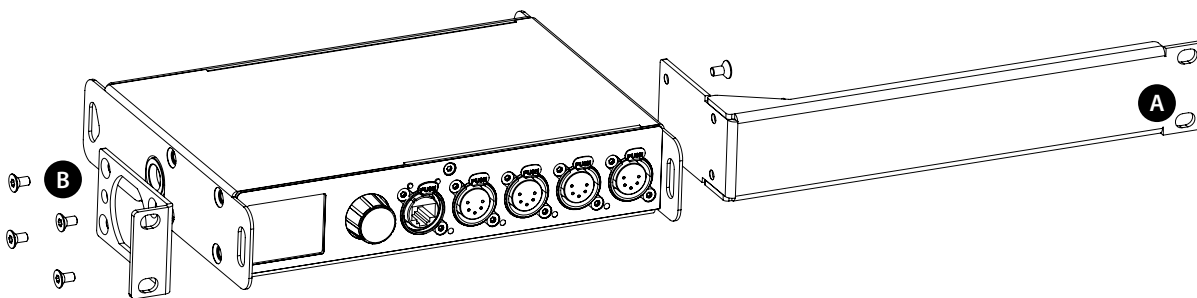
## 1.1 Mounting the device

LumiNode 4 is a device that can be mounted in a truss as well as in a rack. Please read the following instructions to make sure the device is mounted and secured correctly.

### ■ RACK MOUNT - LumiNode 4

In case you want to mount your LumiNode 4 in a standard 19-inch rack, you have to attach the included mounting ears. Connect the longest ear (A) to the right hand side of the device with 4 screws, re-used from the device.

Attach the shorter ear (B) to the left-hand side again with the 4 screws. In this way the input connector nicely lines up with the inputs from possible other devices in the rack.

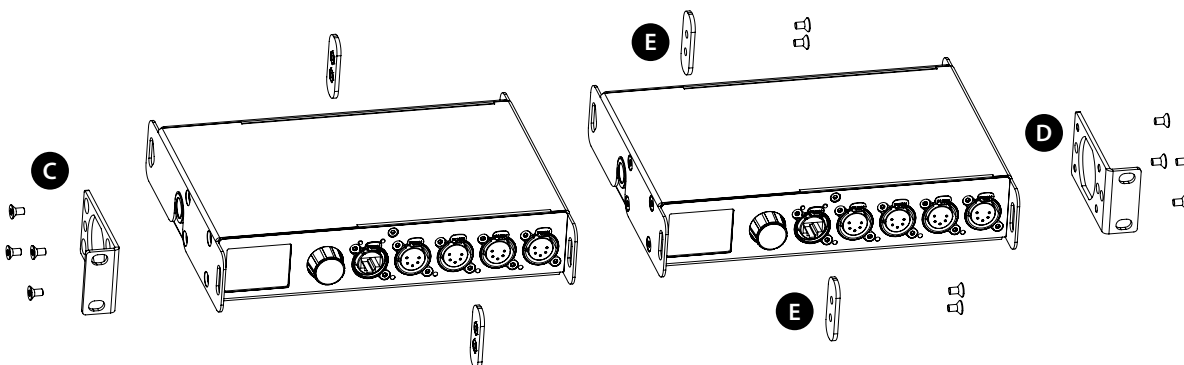


### ■ RACK MOUNT - TWO DEVICES

In case you want to mount two LumiNode 4 devices in a standard 19-inch rack you can mount the two devices together. A space saving way as the two devices will only consume a single row in your 19-inch rack.

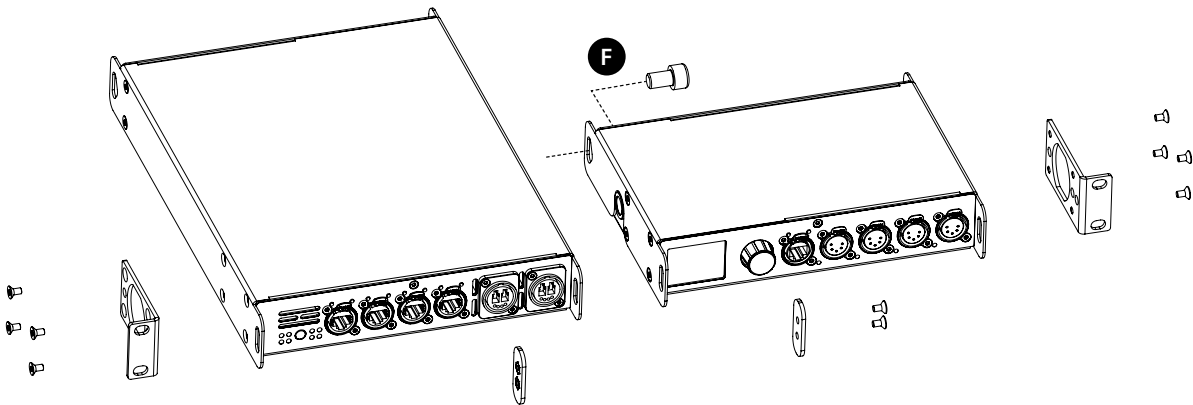
First you attach the shortest mounting ears. Connect the shortest ear (C) to the left-hand side of the first device with 4 screws, re-used from the device. Attach the other shortest ear (D), delivered

with the second device, to the right-hand side again with 4 screws. Use a pair of mounting brackets (E) to connect the two devices in the middle on the frontside. Use a second pair of mounting brackets (E), delivered with the second device, to connect the devices at the rear. Each pair of brackets must be mounted with 2 screws.



To combine a LumiNode 4 device with a Luminex half 19" device, style GigaCore 10, the mounting procedure differs a little. The bolt (F), not included, replaces the rear couplers at the rear side of the device. Use the correct bolt, M10x20, with a screw wire no longer as 20mm. You can order this part from Luminex (Part Number: R 90 01042)

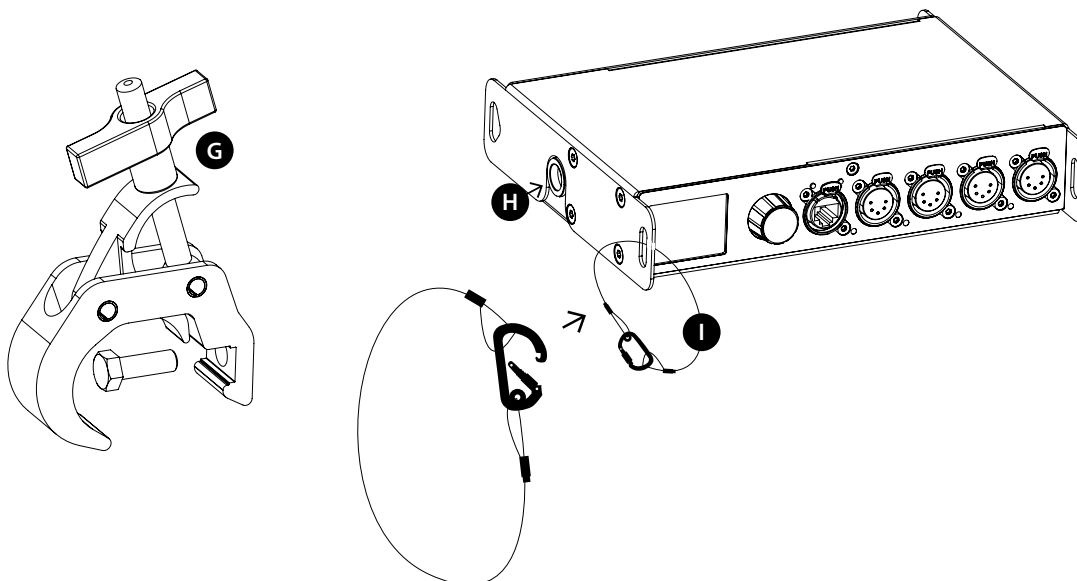
Screw the bolt, through the LumiNode 4 back ear, into the side M10 insert and tighten it. The rest of the mounting procedure remains the same.



■ TRUSS MOUNT – LumiNode 4

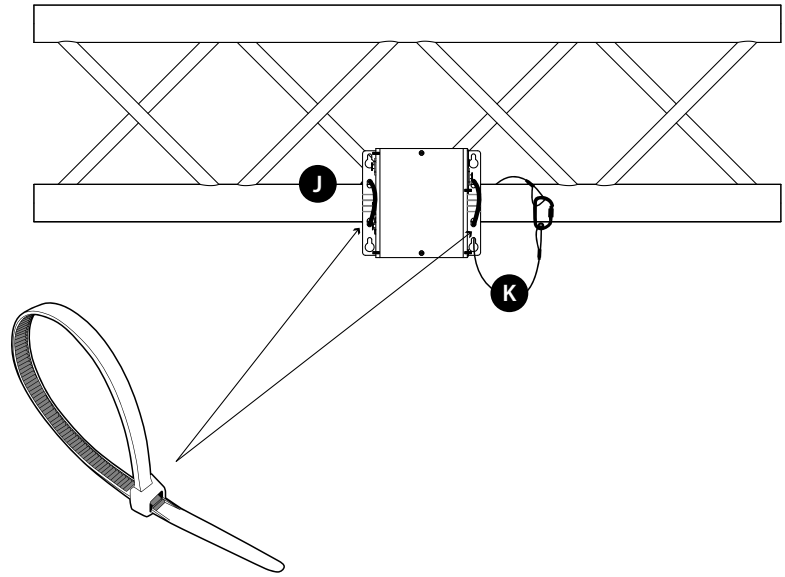
To mount a LumiNode 4 in a truss, you must attach a M10 clamp (G) to the M10 insert (H). After that, you can mount the clamp to

the truss bars. Please also secure the device by attaching a safety line directly to the truss bars as well (I).



■ TRUSS MOUNT – LumiNode 2

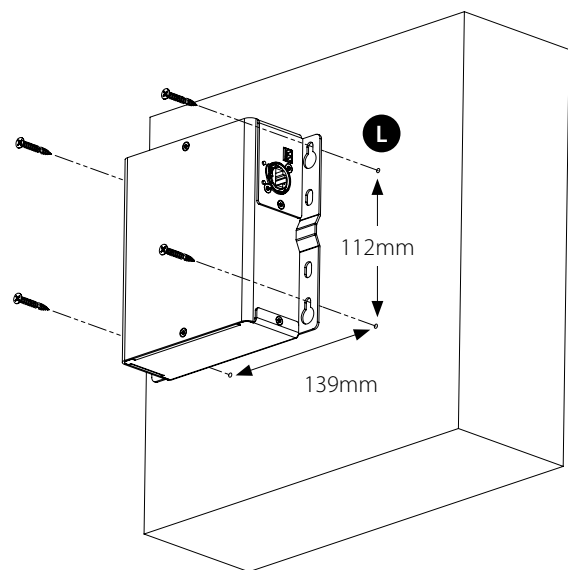
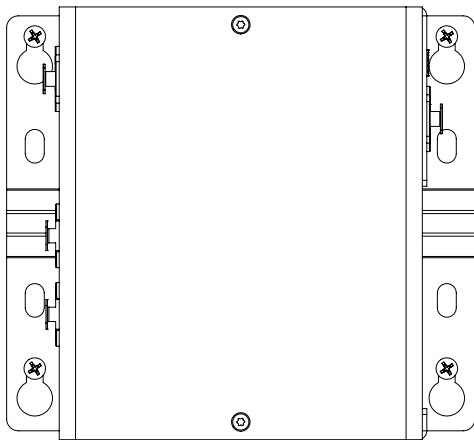
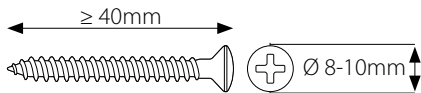
To mount a LumiNode 2 in a truss, use the two plastic tie wraps that are included. Bring on each side a tie wrap through the holes of the device, around the truss bar and tighten it (J). Please also secure the device by attaching a safety line directly to the truss bars as well (K).



■ WALL MOUNT – LumiNode 2

The LumiNode 2 can be mounted to a concrete or wood wall by using applicable screws and anchors. Make sure that the screw head diameter is between 8 – 10mm and the screw length is at least 40mm in order to make a strong wall connection.

Drill 4 holes, at the correct distance in both directions as indicated in the picture below. Mount the device in such way that the Ethernet and DMX ports are facing sideways, and the chassis side is perpendicular to the ground.



## 1.2 Power up the device

Depending on the model there are different ways to power your device:

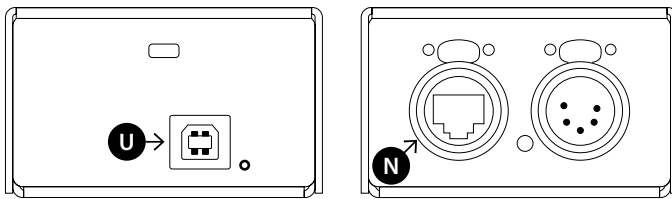
- LumiNode 1: Power-up the device with a USB cable (**U**) or with PoE (**N**). The device will automatically switch on. To shut it down after use, just un-plug the USB cable or the network cable again.
- LumiNode 2: Power-up the device with a network cable with PoE (**N**). The device will automatically switch on. To shut it down after use, just un-plug the network cable again.
- LumiNode 4 and 12: Power-up the device with a power cable fitted with a Neutrik PowerCON TRUE1 connector (**M**) (please contact your local dealer if you don't have a suitable power cable at hand). The device will automatically switch on. To shut it down after use, just un-plug the power cable again.

Alternatively, the LumiNode series are 802.3af compliant (PoE), so that each LumiNode will act as a PD (Powered Device), and can be powered by any compliant PSE (Power Sourcing Equipment) such as Ethernet switch, midspan and PoE injector.

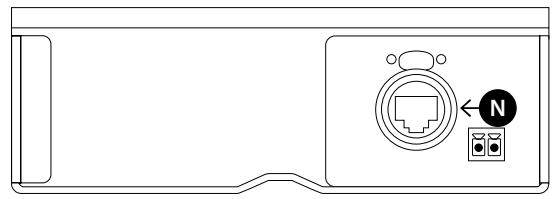
For LumiNode 4 and 12, if both 230V and PoE are used the 230V supply will be prioritized but the PoE will seamlessly take over the running if the 230V fails.

The LumiNode12 offers the option to daisy chain up to 30 devices via the PowerCON TRUE1 outlet on the rear of the unit.

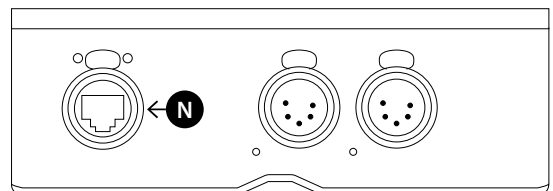
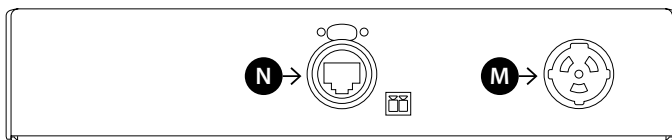
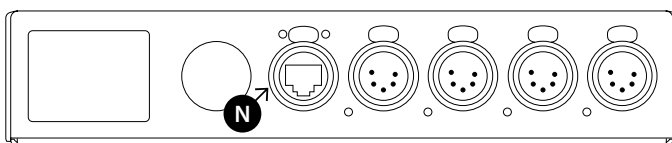
### LUMINODE 1



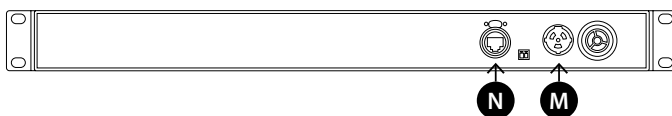
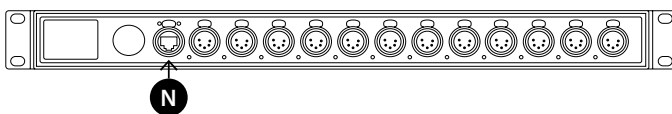
### LUMINODE 2



### LUMINODE 4



### LUMINODE 12



### 1.3 Connection

#### ■ CONNECTION TO THE NETWORK

In order to get the LumiNode online in your system, simply connect either Ethernet 1 or Ethernet 2 port to a computer, or to a port of an Ethernet switch.

Only Ethernet 2 port on the rear of the unit can be used to power the unit through PoE. Check the port labelling for a better identification.

#### ■ CONNECTION TO THE USB PORT

The LumiNode 1 can be powered through its USB port. Simply connect the LumiNode to the USB port of your computer.

The red LED next to the LumiNode's USB port will turn on once the unit is powered. Once the unit has booted up the led will turn blue.

Additionally, the LumiNode will appear as a new network interface on your computer. No driver needed, the LumiNode supports Windows, Mac OSX and Linux OS. Once the network adaptor has been added please configure a static IP address in the range you are planning to use for your application in the settings of your operating system.

### 1.4 LED indicators

There are various LEDs on the LumiNode. Here is a list of the LEDs, the possible colors and the meaning of each color

DMX PORT	STATUS	MEANING
DMX Input	Green	Blinking : Active input
DMX only (output mode)	Cyan	Blinking: DMX activity
DMX + RDM (output mode)	Blue	Blinking: DMX activity
Stream loss	Red	Source stream lost
Stream recovered	Orange (LumiNode 4 and 12 only)	Source stream recovered
DMX redundancy	Magenta Magenta flashing	Output idle Output active
NETWORK PORT		
Left LED (Link)	Green	Gigabit connection
Blinking: Ethernet Traffic		
	Orange	100Mbit connection
Right LED (Mode)	Blue	Default color
	Green	Blinking : Device booting
	Orange	Blinking: Firmware upgrade in progress
USB PORT		
USB (node1 only)	Red	Powered from USB or PoE during bootup
	Blue	Unit booted and running

### 1.5 Connection to the web interface

- The default LumiNodeLumiNode IP address is displayed at the rear of the unit, or at the bottom. Set your computer with a compliant IP address (do not use the same IP address!)
- Connect your computer to the LumiNode with a network cable
- Launch your favorite web browser
- Type the IP address of the node in the address field, followed by enter

### 1.6 Reset

When the device is powered up, by default it shows the status screen with the status of the first 4 ports. In order to reset the device please follow the following steps:

- Press the jog wheel once to enter the 'Main menu' (5th option from the top)
- Scroll down till you see the 'Toolbox'
- Press the jog wheel once to enter the toolbox
- Scroll down until you see Reset
- Press the jog wheel once to enter the reset menu
- A pop-up window opens giving you the option to 'Preserve IP settings' and 'Preserve user profiles'
- Choose which option you want by using the jog wheel to scroll between the two options and press the jog wheel to confirm
- At the bottom of the pop-up window you have the option to 'Reset' or 'Cancel'
- If you choose 'Cancel' you get a confirmation message that the reset has been cancelled.
- If you choose 'Reset' you get a new screen asking to confirm the reset command. Once 'Yes' is selected the node will reset.

#### How to reset LumiNode 1 and LumiNode 2

- With a computer connected to the device, open Luminet Monitor
- Under "Tools" in the menu bar you find "Reset LumiNode"
- Enter the mac address of the device you want to reset. This can be found on the label with the IP address. Use FF:FF:FF:FF:FF:FF to reset all LumiNodes in your network
- Choose if you want to keep the IP settings
- Choose if you want to keep the profiles
- Click reset



## 2. CONFIGURATION

### 2.1 Web Interface Presentation

Launch your favorite web browser and type the IP address of your LumiNode. Press enter to validate.

#### ■ NODE PAGE



**(A) Image of your LumiNode:** Depending on the model you are using; the image might differ from the one displayed above. This product image shows the configuration of each DMX port. The center icon within each DMX port represents an input or an output. On the top of each port, you can see the mode of the Process engine linked to that port.

#### **(B) Navigation menu**

**(C) Input:** According to the mode set on the Process engine, the input block will display all relevant information, such as the type of incoming protocol, the universe number, the source IP address, or the DMX input port.

**(D) Process engine:** By default, the LumiNode comes with Forward mode activated on as many Process engines as DMX port(s). The block displays the mode currently set on the Process engine; you can change the name. On the left and on the right-hand side of the Process engine, are respectively the patch and master /limiter icons. The color of the icon will change if any parameters of these menus are modified.

**(E) Output:** The output block will display all relevant information, such as the type of outgoing protocol, the universe number, the destination IP address, or the DMX output port.

**(F) Increment / Decrement:** Use these shortcuts to quickly increase or decrease the value of a universe. Select the Process engine first, after which the increment /decrement tool becomes available.

**(G) Reset tool and padlock:** Use this tool to reset one or several Process engines. First select the Process engine by clicking on the top left-hand side corner of the input block. The padlock allows you to lock the LumiNode configuration page to prevent unsolicited action on the web page. This is an ideal tool for show time.

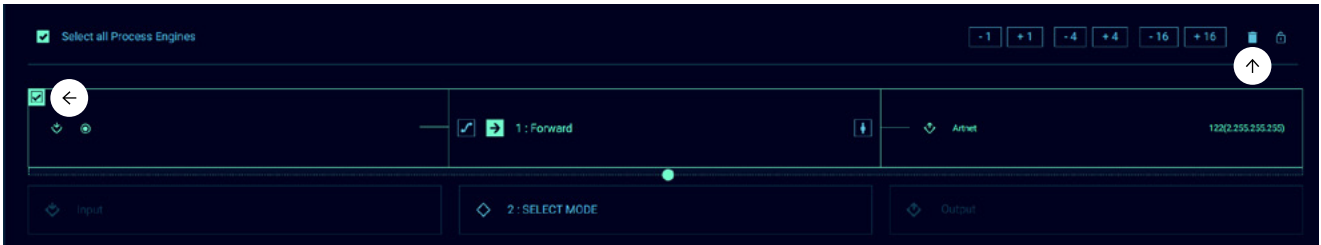
**(H) Theme and language:** Select here if you want to use the dark theme or light theme. Interface supported languages are English and Japanese for now.

**(I) Active Profile:** In this area the current active profile of the LumiNode is being displayed.

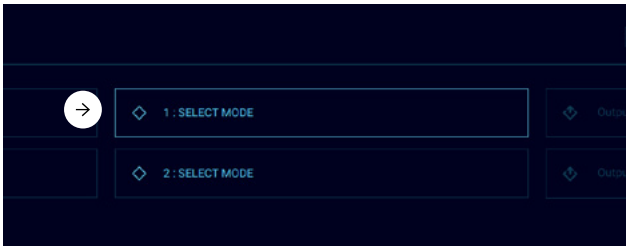
### How to reset a process engine

To reset a process engine, hover your mouse over the left-hand side input block, and click on the tick box.

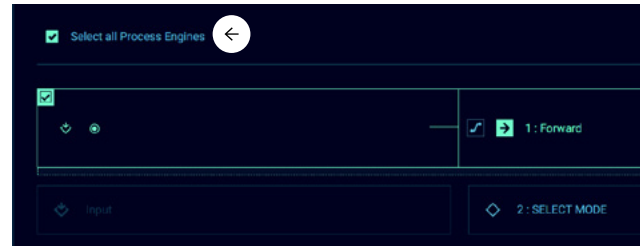
Then, click on the reset icon on the upper right-hand side of the interface.



A blank Process Engine appears as follow:





If you want to reset all the process engines at once navigate to the top left above the first Process Engine and select the tick box "Select all Process Engines"

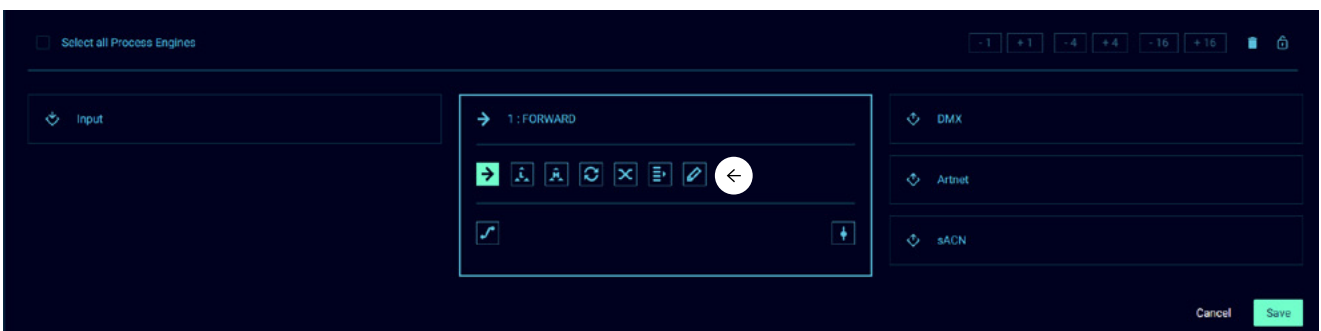


### How to configure a process engine

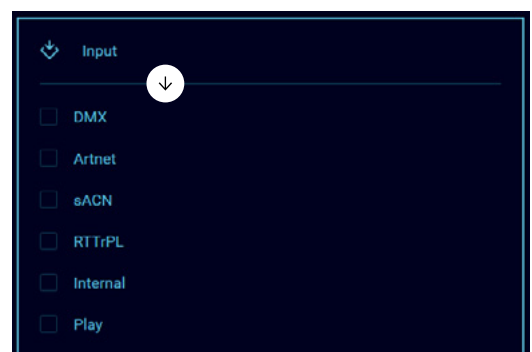
To configure a process engine, first click on the "SELECT MODE" label, the Process Engine panel appears:

Here, simply click on the icon to select the mode you wish to use. Modes are described in chapter 3 of this manual.

At any time, you can click on the Patch button , or the Master / Limit button  to open the relevant configuration panel.

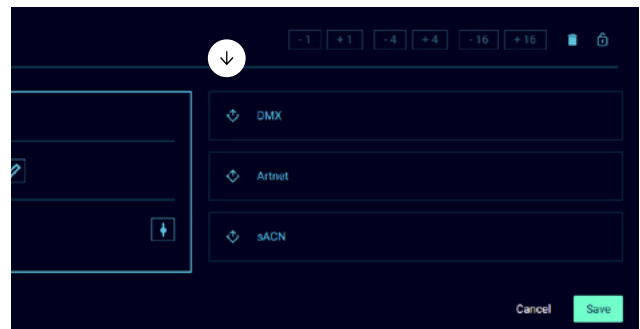


Next, click on the left-hand side block, to select your input; According to the selected mode, the number of inputs may vary. A Process Engine supports up to four inputs. You can give your input a name and select the type of source.



Next, select your output by clicking on the output block, located on the right-hand side. Here, you can choose between DMX, Art-Net or sACN, to send data coming from the Process Engine. The three types of output can be used at the same time, providing you with great flexibility.

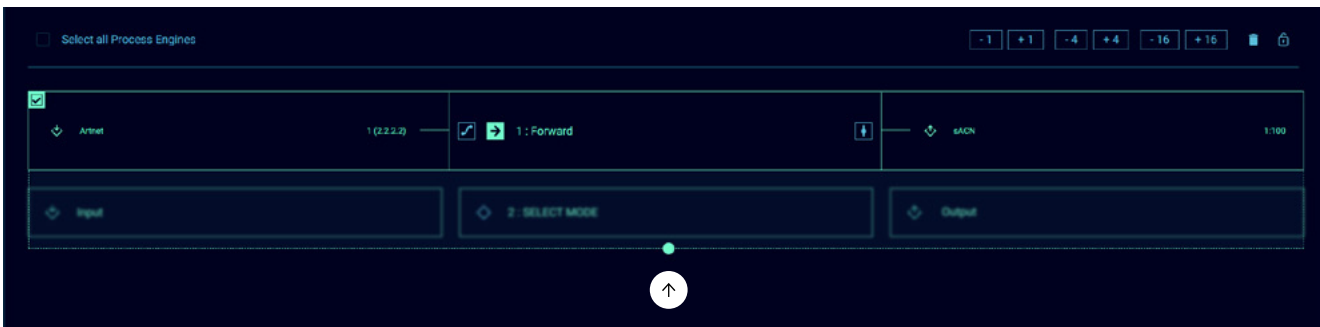
Once selected, click on the Save button, to store the parameters of your Process Engine. Your engine is ready to go!



### How to quickly copy a Process Engine

Once you've created your first Process Engine, select it by clicking on the tick box on the upper left-hand side corner. Now a handle appears at the bottom of the process engine. Drag the handle to the bottom, to select other Process Engines.

To select more, release the mouse, select the last Process Engine, and repeat the procedure. The LumiNode will automatically increase the universe number, and the DMX ports, for each following process engine. This allows you to create a complete configuration in a snap!

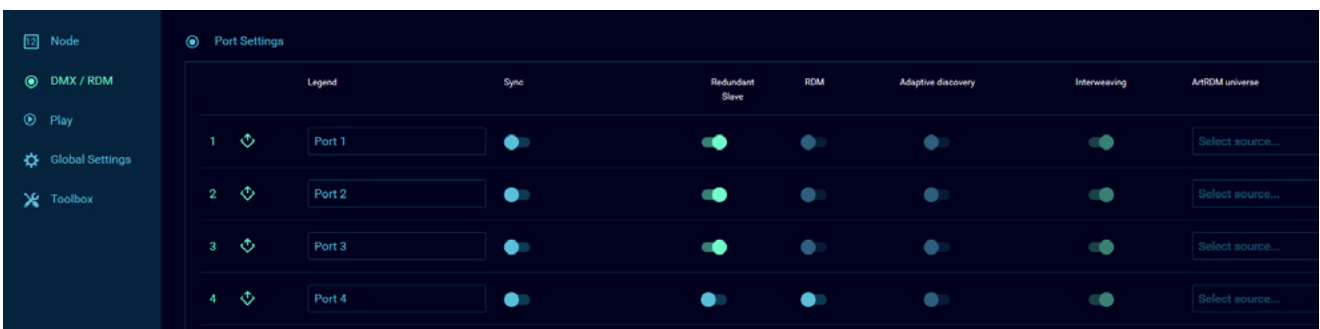


**THE DMX/RDM PAGE IS DIVIDED IN TWO SUB MENUS:**

**The port settings offer you to:**

- Add a legend to a port to easily identify what is connected to it
- Enable Sync mode: when enabled a DMX frame is only send out when a packet is generated by the process engine. The DMX output follows the input
- Enable RDM, choose adaptive discovery and or interweaving and to set the ArtRDM universe which is used for ArtTOD and ArtRDM packets
- Redundant Slave: when enabled the DMX port listens to incoming DMX from another port or another node and will start outputting if NO input is registered. When DMX redundant slave is enabled RDM is automatically disabled.

Scroll down and click "Save" to save your settings.



At the bottom of the process engine section you can find a button to force an RDM discovery in case this is required.

**DMX Settings:**

On the DMX/RDM page at the bottom of the page you find the DMX settings.

- **DMX Framerate** in Frames Per Second
- **Breaktime** in microseconds
- **DMX output time continuous** by default is enabled and the LumiNode will keep outputting the last received stream packages on the DMX. When you disable the continuous output time you can choose a time the LumiNode will keep outputting the data with a minimum time of 1 second.
- **RDM Controller IP** is the only device in the network that can make changes via RDM. When 0.0.0.0 every device in the network can make changes but if you want to have a dedicated device to manage the RDM you can define the IP here.

Press "Save" to apply your settings



**DMX redundancy:**

The LumiNode range supports DMX redundancy from firmware 2.1.0 onwards. What does DMX redundancy mean and how does it work?

DMX redundancy means that you can run a DMX cable from one LumiNode to your lights and then from the output of the last light back to the same LumiNode or to a different LumiNode.

**The redundant port will not output DMX until it is no longer receiving DMX.**



Once a link in the DMX chain gets broken or disconnected the slave port will start outputting DMX and the lights will continue to operate as expected. As soon as the broken link is restored the redundant port will go back to an idle state.

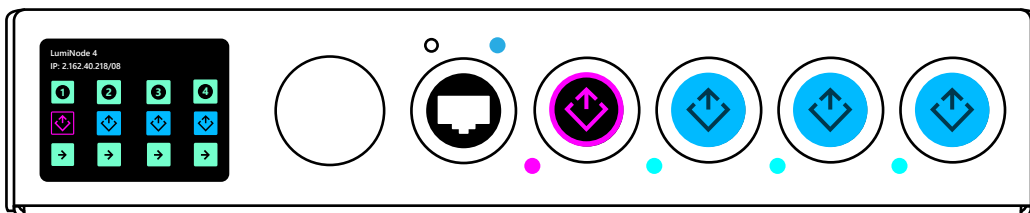
**NOTE: In order for this system to work it is important that the configuration of both process engines and the settings for sync and dmx framerate are identical!**



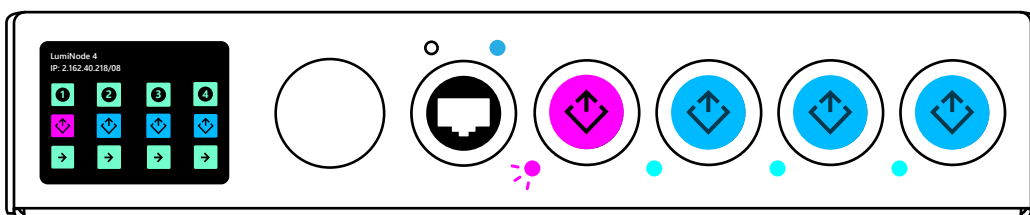
When the redundant port is idle the port LED is solid magenta and the LCD display on the LumiNode 4 and LumiNode 12 will show the outline of the output symbol in magenta.

As soon as the port becomes active the port LED will turn to flashing magenta and the LCD display will show a magenta filled output symbol.

**Redandant port NOT active:**



**Redandant port ACTIVE:**



■ PLAY PAGE IS DIVIDED IN TWO SUB MENUS:

**Show:**

Here you can select which show you want to record, which cue number and the fade time in seconds.

Other options here are:

- Import a show that you have available offline
- Export the show you have selected to your computer
- Delete the selected show
- Cue is the cue number that will be stored next
- Fade(s) is the fade time in seconds assigned to the cue when recorded in the web interface
- Rec records a new cue. Each cue is a snapshot of the output of all process engines

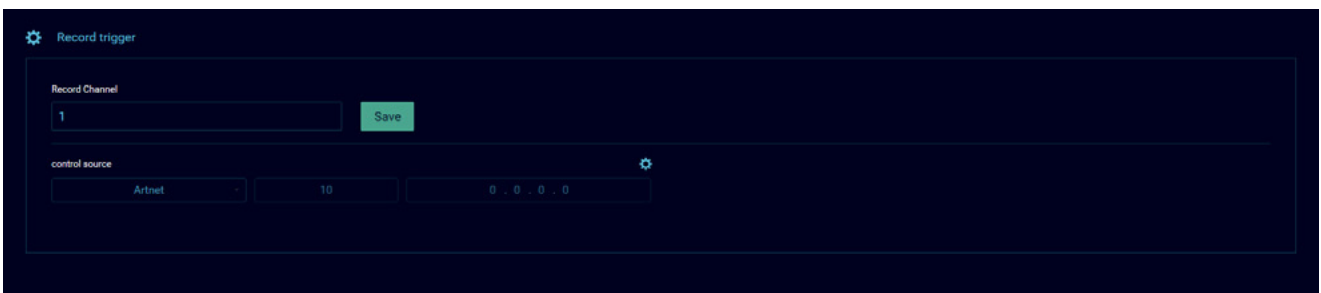
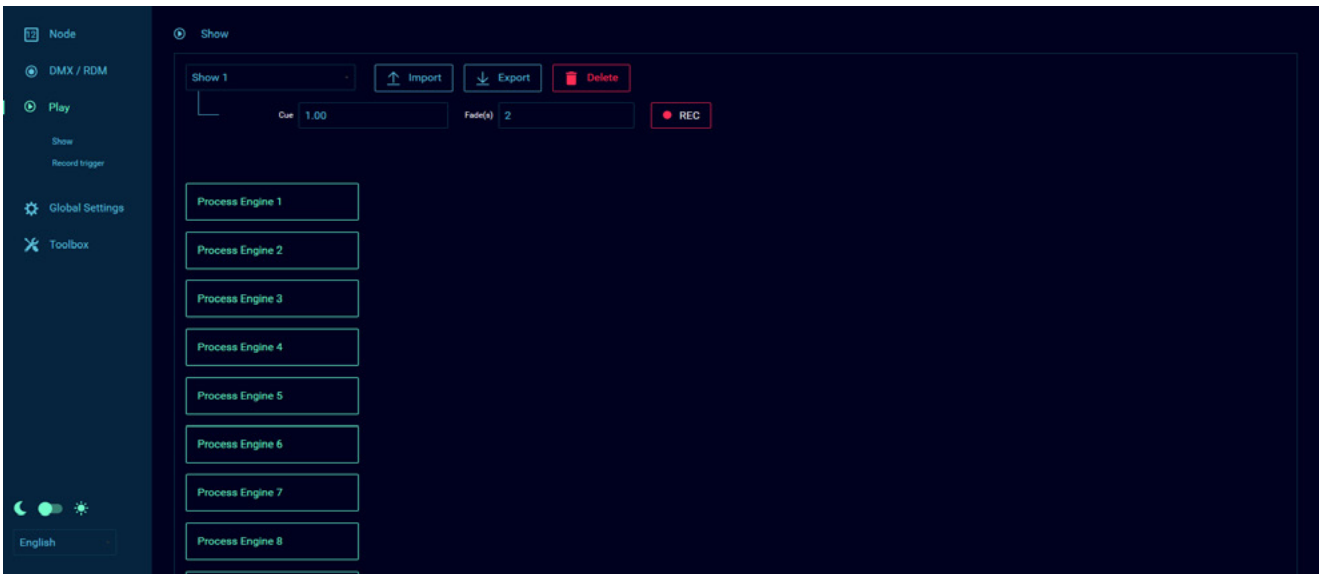
**Record Trigger:**

When you scroll down on the play page you will find the Record Trigger settings.

Here you can set the record channel. This is the channel you will be sending from your control device, the control source protocol and universe. This can also be assigned to a specific source IP address if required.

The following options with corresponding values are available for the record trigger:

- 101 – record next cue in show 1
- 102 – record next cue in show 2
- 103 – record next cue in show 3
- 
- 
- 139 – record next cue in show 39
- 140 – record next cue in show 40



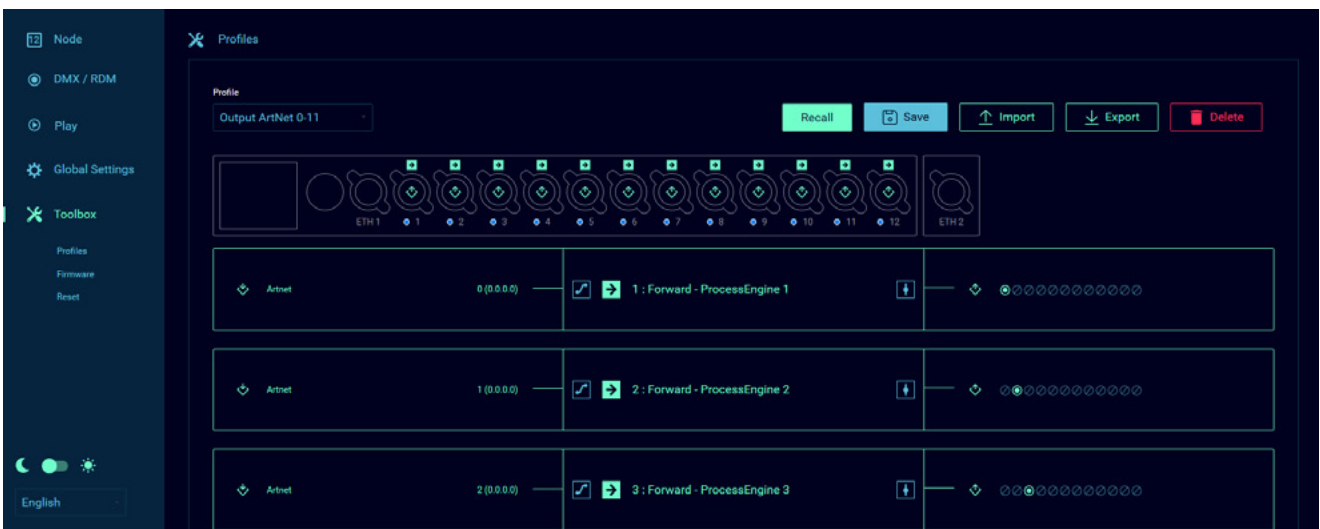
## TOOLBOX PAGE

The toolbox page is divided in three sub menus:

### Profile manager

Here, you can recall, save, import, export or delete a profile; Select the profile with the drop-down menu located on left hand-side. The LumiNode comes with default profiles that can be used or modified, for a fast setup time. Up to 40 profiles can be stored in a unit.

Once a profile is selected, you can preview the configuration below. IP settings included in the profile are displayed at the bottom of the profile.



When a profile has been selected the user can scroll down to the bottom of the profile preview to see the IP settings in this profile. By default, the LumiNode will NOT load the IP settings that are

stored in the profile. If you want to load the IP settings saved in the profile you simply slide the "Preserve IP settings" to OFF



## Firmware

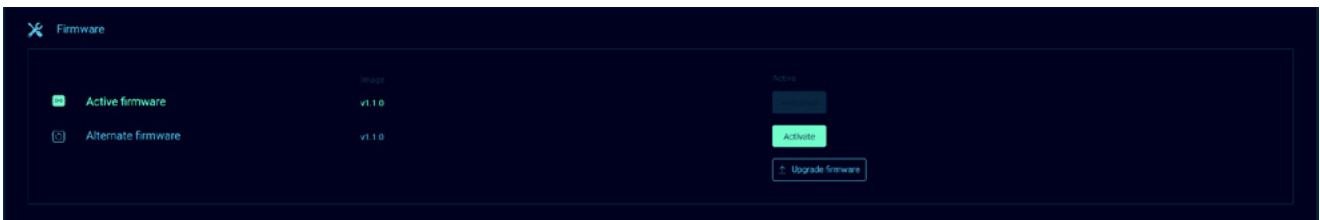
Here, you can see two types of firmware:

**Active firmware** is the one currently running on the unit. **Alternate firmware** is the previously installed firmware. If you'd like to downgrade the unit to the previously installed firmware, click on the "Activate" button. The unit will reboot with this firmware.

**There is only ONE firmware version for the entire range.** This can be installed on all different models in the range. You can upgrade the LumiNode with our latest firmware.

To upgrade the unit, please apply the following procedure:

- Download the latest firmware in the support section of our web site.
- Extract the downloaded archive, and have a look at the release notes included.
- Click on the firmware upgrade button.
- Select the file you've extracted.
- The LumiNode will start the firmware upgrade. The unit will reboot after the upgrade is completed.
- After the upgrade is finished it is recommended to reboot the LumiNode.

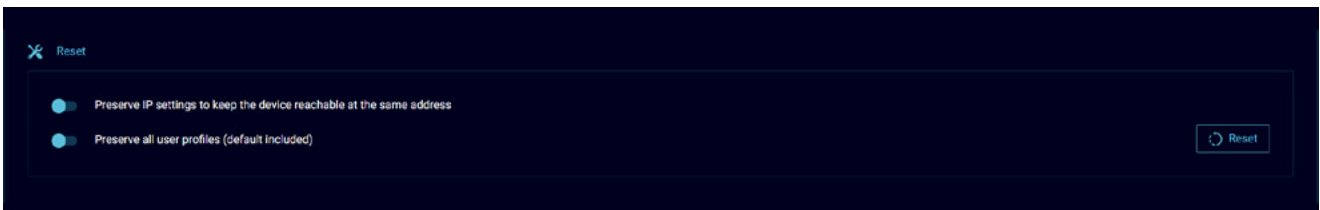


## Reset

In this panel, you can reset the LumiNode, with two separate options:

- Preserve IP address
- Preserve profiles

Click on the "Reset" button to perform the selected reset. Performing a reset with these two options will bring the LumiNode to its factory settings.



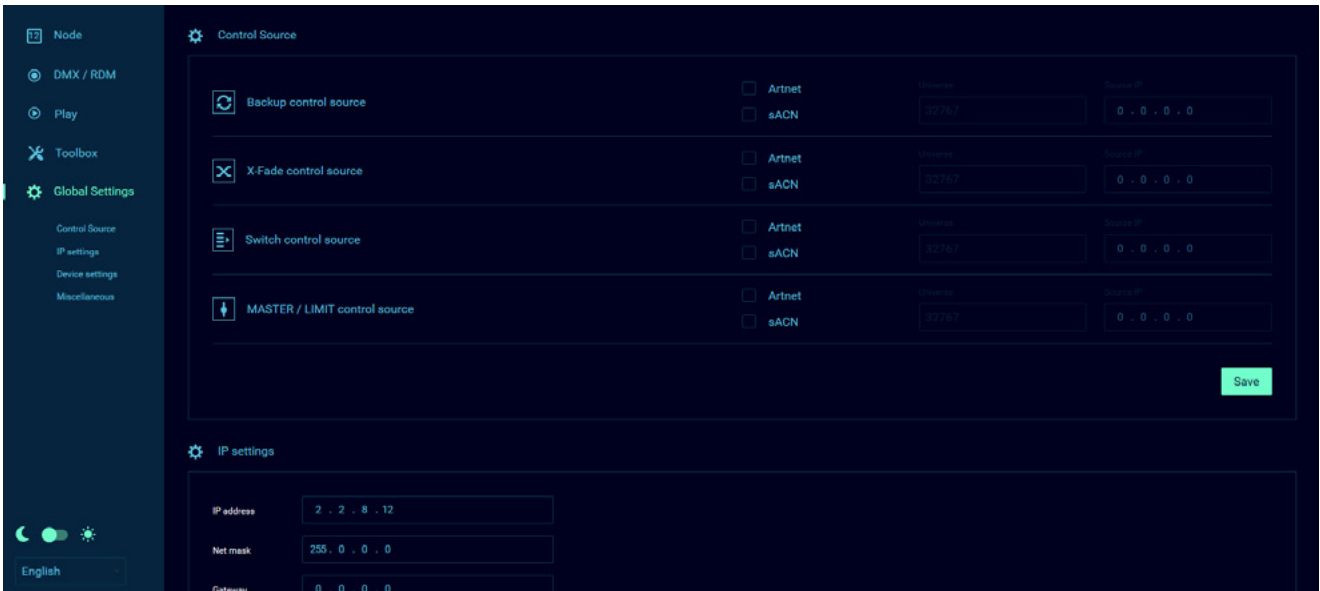


## GLOBAL SETTINGS

The Global Setting page is divided in five sub menus.

### Control source

Here, you can set the type of protocol, the universe number, and the controller IP address for each control source. Press “Save” to apply your settings.



### IP settings

In this menu, you can set the IP address, subnet mask and default gateway for your LumiNode.

The Broadcast address displayed below is the default destination IP address the LumiNode will be using when sending ArtNet to the network. Press “Save” to apply your settings.



### Device Settings

In this menu, you can set the Short name and Long name of the LumiNode. The short name is currently used by any ArtNet compli-

ant controller to identify a device on the network. Press “Save” to apply your settings.

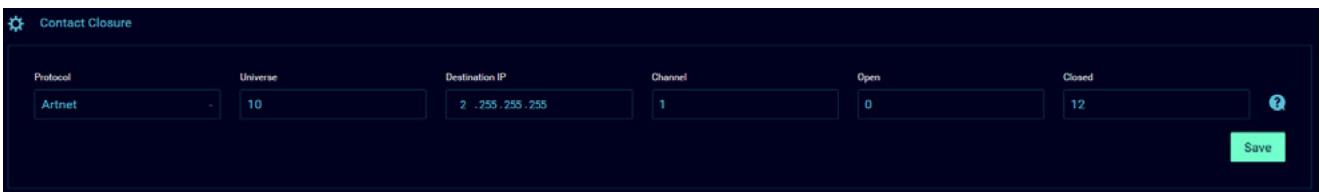


### Contact Closure

In this menu you can setup the details for the contact closure.

- **Protocol** can be ArtNet or sACN
- **Universe** is the universe created by the contact closure
- **Destination IP** allows you to broadcast or unicast the contact closure’s universe
- **Channel** is the control channel created by the contact closure
- **Open** is the value of the control channel when the contact is open
- **Closed** is the value of the control channel when the contact is closed

Press “Save” to apply your settings.



The following values are linked these options: (these can be found under the question mark symbol on the global settings page/contact Closure)

### Miscellaneous

- **LCD auto-off (sec)** allows you to set the LumiNode to automatically switch off the LCD after the set time. By default this is set to 600 sec.
- **LCD pin** allows you to set a PIN to lock changing settings via the LCD screen. Click on the slider to enable the LCD pin.
- **Web auth**, for security reasons, a password can be enabled on the LumiNode web interface. Click on the slider to enable web authentication, and type in your password.
- **Led slider** allows you to change the brightness of the LEDs on the LumiNode



Press “Save” to apply your settings.



### 3. LCD DISPLAY

From firmware version 2.0 onwards the LCD display has been activated and the following information can be found on the display. In normal operation the LumiNode will step through the port overview pages depending on the total amount of ports on the model. The display will change every 5 seconds.

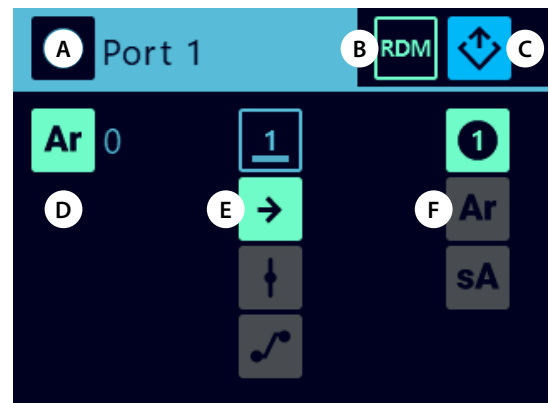
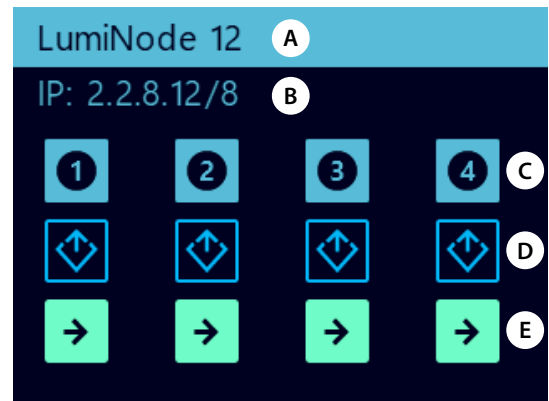
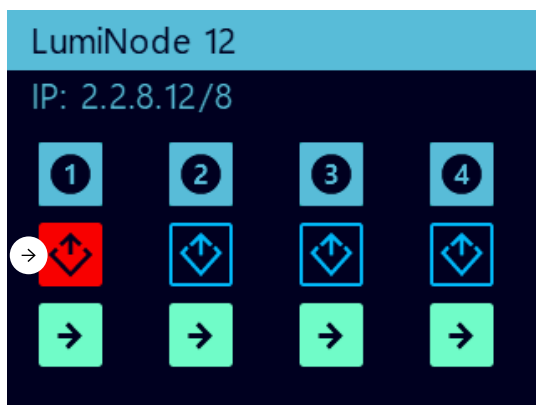
The image to the right shows the layout of the display:

- (A) Model number
- (B) IP address (/8 = 255.0.0.0, /16=255.255.0.0, /24=255.255.255.0)
- (C) Port number
- (D) Shows if the port is Input ↕ or Output ↗
- (E) Shows the mode of the port

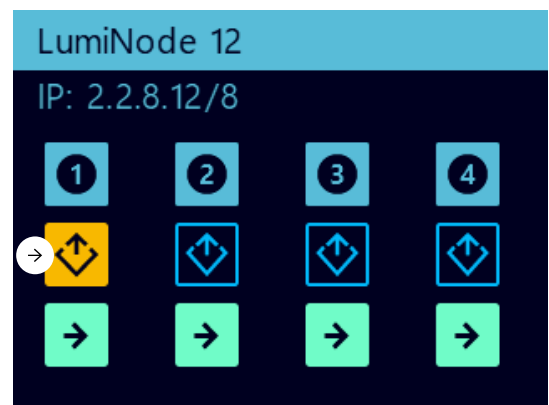
For a more detailed view per port you simply use the jog wheel and scroll to the right. Example of detailed port info:

- (A) Port number you are viewing
- (B) When RDM is showing RDM is active on this port
- (C) Shows if the port is an Input ↕ or Output ↗
- (D) Shows the input of the process engine, what protocol and which universe
- (E) Displays which process engine is linked, what mode the process engine is in, if there is a patch or if the master/limit has been set
- (F) Shows the output of the process engine, universe number and protocol

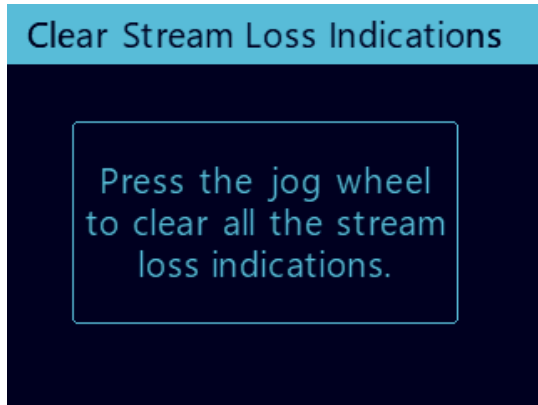
If a stream fails on a port the LCD display will show this by changing the Output (D) Red



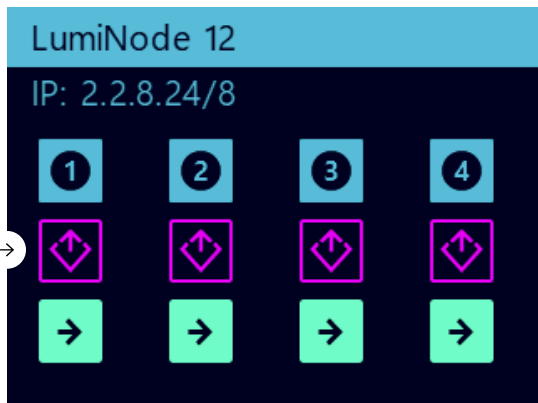
If the lost stream is recovered the LCD display will show this by changing the Output (D) Orange. This way the user can see the stream has been lost



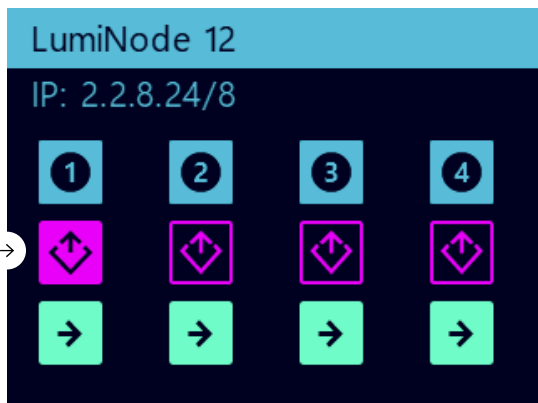
In order to clear warnings, scroll to the following display and press the jog wheel. This screen can be found when scrolling left once when ports 1-4 are shown or to scroll all the way to past the last detailed port info.



If the port is in DMX redundant mode and idle:



If the port is in DMX redundant mode and active:



**The front-end display offers access to most of the settings in the unit.**

**MENU TREE VIEW:**

- Home
  - Ports
    - Status overview of the ports
  - Process Engines
    - Status overview of the process engines
  - Setup Port
    - DMX / RDM Setup
      - Sync
      - RDM Enabled
    - Fast Engine Setup
  - Setup Process Engine
    - Configuration of process engines
  - Setup Network
    - IP
    - Subnet
    - Gateway
    - Mac address
  - Profile Manager
  - Device Info
  - Toolbox
    - Display Off
    - Reboot
    - Reset
    - RDM Discovery
  - Display Setting
    - Dark / Light
    - Display Off
    - Language
    - Enable / disable screensaver
    - Enable / disable auto rotate status page

**4. WEB API**

The LumiNode range supports the use of Web API.

For a detailed list of available actions via Web API please type the following in your favourite web browser:

<http://IPOFYOURDEVICE/api/doc>

## 5. LUMINODE IN DETAIL

The LumiNode series is a new range of network converter, inheriting more than a decade of experience from the Luminex Ethernet-DMX converter design and manufacturing.

In the past, most of the people were designing their system according to the number of universes and DMX ports they would need on their lighting control system.

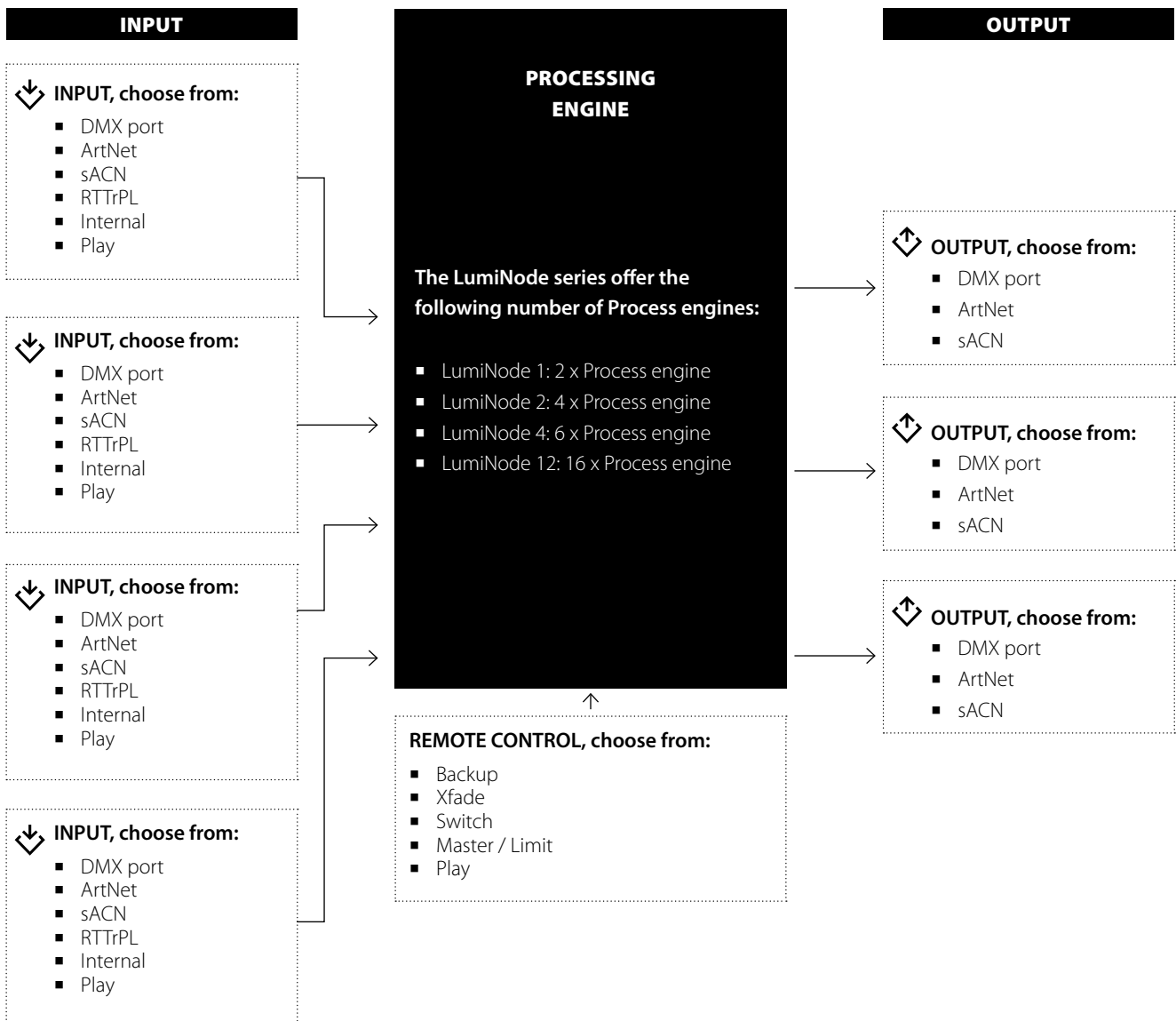
### 5.1 What is a Process engine?

A Process engine can be seen as an entity within the LumiNode firmware, accepting up to four sources, and who is able to send it up to three different destinations.

But today, with the ever-increasing number of lighting-controlled devices fitted with an Ethernet port, there is a need for more processing power and data handling flexibility. This is where the LumiNode series steps in.

Instead of assigning universes to a port, the user can now select any incoming data, handle it the way they need, and send it back to the network, or to a DMX port. All the data handling will be powered by process engines.

Additionally, remote interaction and control can be applied to the process engine, via specific control channels.

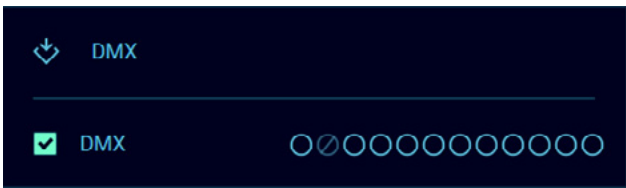


## INPUT

A process engine supports the following inputs:

### DMX:

A DMX source, such as a lighting control desk, can be connected to any of the DMX port(s) of the LumiNode. You'll need to use a male to male adapter to connect the console to the DMX port of the LumiNode. Simply tick on the port you wish to use as an input port, to enable the DMX input. A greyed-out port with a bar in the middle means this port is already used.



### ArtNet:

Any ArtNet controller can be used as a source for the process engine. The LumiNode supports all ArtNet revisions, including ArtNet IV. Simply tick the box to select ArtNet as an input protocol. Here you can add the universe number you wish to use, and you can specify the IP address of the source as well. If you don't know the IP address of the source, simply leave the field with 0.0.0.0 IP address. The LumiNode process engine will bind this input to the first source using this universe number. You can add a text to your ArtNet source as well, for a better identification.



### sACN:

Any sACN controller can be used as a source for the process engine. Simply tick the box to select sACN as an input protocol. You can add here the universe number you wish to use, and you can specify the IP address of the source as well. If you don't know the IP address of the source, simply leave the field with 0.0.0.0 IP address. The LumiNode process engine will bind this input to the first source using this universe number. You can add a text to your sACN source as well, for a better identification.



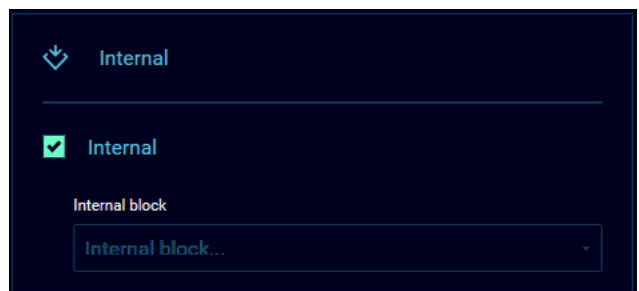
### RTTrPL:

LumiNode process engine supports Real Time Tracking Protocol for Light, by Cast Software. As an example, the LumiNode can be used to transition between a lighting console and a BlackTraX tracking system, seamlessly. Simply tick the box to select RTTrPL as an input protocol. You can add here the universe number you wish to use, and you can specify the IP address of the source as well. If you don't know the IP address of the source, simply leave the field with 0.0.0.0 IP address. The LumiNode process engine will bind this input to the first source using this universe number. You can add a text to your RTTrPL source as well, for a better identification.



### Internal:

This input option allows you to use the output of another process engine as input. This allows you to make even more complex set-ups. Use the dropdown menu to select which process engine you want to use as input.



**PLAY:**

This input option allows you to use the recorded scenes from internal shows as an input to the process engine.

First select which show you want to use, then select the process engine that you want to use. All the process engines of the LumiNode are always available to choose from.

Select the control channel you want to use to control the cue list, the source protocol and universe and if required you can divine a specific controller IP.

**Control channel options:**

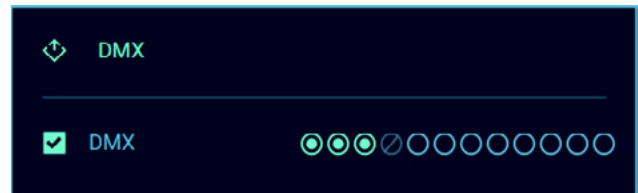
- 8 – 15: **Go** plays the next cue in the cue list
- 16 – 23: **Forward** presets the next cue. This allows you to trigger forward for example twice to skip a cue
- 24 – 31: **Back** presets the previous cue. This allows you to go back in the cue list. When for example cue 3 has been played and the “back” trigger has been used it will preset cue 3 again. In order to preset cue 2 the “back” trigger needs to be triggered twice.
- 32 – 39: **Reset** send you back to cue 1 in the cue list

**OUTPUT**

A process engine offers the following outputs:

**DMX:**

One or several DMX ports can be selected to output the data transferred by the process engine. A greyed-out port with a bar in the middle, means this port is already used.

**ArtNet:**

All data handled by the process engine can be sent back to the network as a new ArtNet universe. You can add here the universe number you wish to use, and you can specify the IP address of the destination, by ticking the Unicast box. By default, the LumiNode will transmit this ArtNet universe to the broadcast address of the IP range the unit is part of. You can add a text to your ArtNet destination as well, for a better identification.

**sACN:**

All data handled by the process engine can be sent back to the network as a new sACN universe. You can add here the universe number you wish to use, and you can specify the priority for this sACN universe. You can add a text to your sACN destination as well, for a better identification.



## MODE DEFINITION

The LumiNode series offer 7 different modes for each process engine:

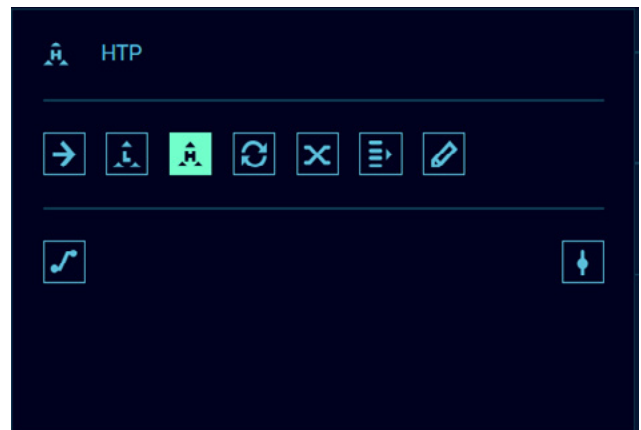
### FORWARD:

In forward mode one input source gets send to up to 3 outputs. You can simply output to a physical port on the converter or forward to another ArtNet or sACN universe. Patch and Master/Limit options are available for this mode.



### HTP MERGE:

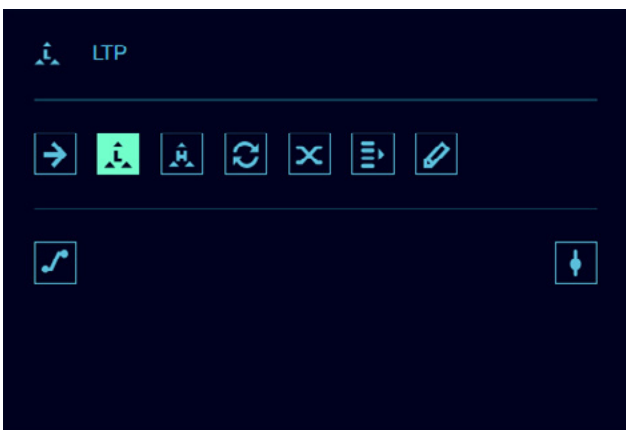
Highest Takes Precedence merging policy is commonly used to merge dimmer channels. Up to 4 sources (ArtNet, sACN, DMX, RTTrPL, Internal or Play) can be merged. Patch and Master/Limit options are available for this mode.



### LTP MERGE:

Latest Takes Precedence merging policy is commonly used to merge fixture channels. Up to 4 sources (ArtNet, sACN, DMX, RTTrPL, Internal or Play) can be merged.

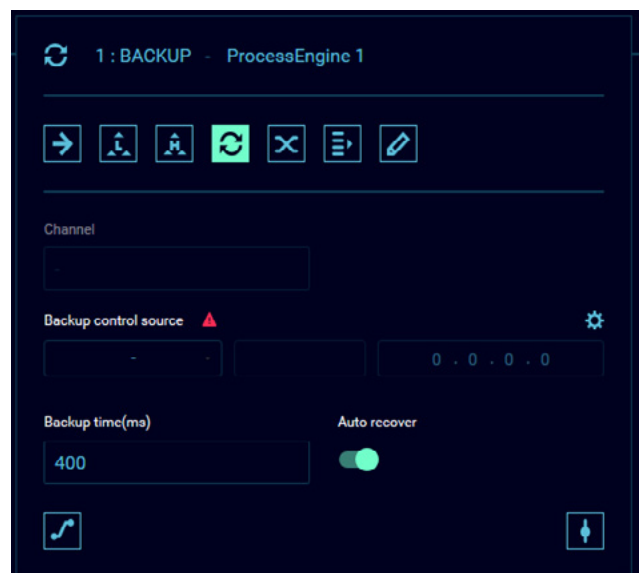
Patch and Master/Limit options are available for this mode.



### BACKUP:

In Backup mode, two inputs will be used which can be DMX, ArtNet, sACN, RTTrPL, Internal or Play where the first input has precedence over the second input. The output can be DMX, ArtNet, sACN.

When input 1 fails the node will switch to input 2, automatically. Auto-recover is enabled by default. A control channel can be used to remotely switch back to input 1.





 The red warning triangle has the tooltip text:

*“The process engine cannot be configured without a backup control source”*

to indicate that the control source hasn't been configured yet. This warning will disappear once the control source has been configured.

### Auto Recovery

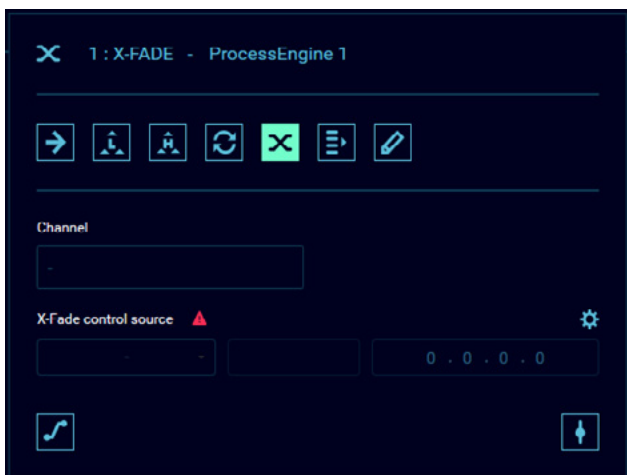
- When auto recovery is Enabled the LumiNode will switch back to input one as soon as this is back available in the network. In this case the warning for the missing backup control source can be ignored.
- When auto recovery is Disabled you can configure which protocol is used to trigger the recovery, which universe and which channel. This can be narrowed down to a specific IP address which will be the only device able to control the backup recovery.

When the backup control function is used the LumiNode will not restore to input one when this becomes available in the network. In order to recover a value between 8-15 (in the range 0-255) needs to be send on the control channel to trigger the recovery.

Patch and Master/Limit options are available for this mode.

### X-FADE:

This mode offers to you to cross fade between two sources. Ideal in a situation where you need to cross fade between a lighting desk and a media server, the control channel allows you to keep full control on the speed and smoothness of the transition. From the X-Fade panel, you can define the control channel, the protocol and the universe number, as the IP address of the control source. Click on the gear wheel icon to change these parameters. When the control channel is at zero, source one is in full control, when the control channel is at full, source two is in full control. Patch and Master/Limit options are available for this mode.



 The red warning triangle has the tooltip text:

*“The process engine cannot be configured without a X-Fade control source”*

to indicate that the control source hasn't been configured yet. This warning will disappear once the control source has been configured.

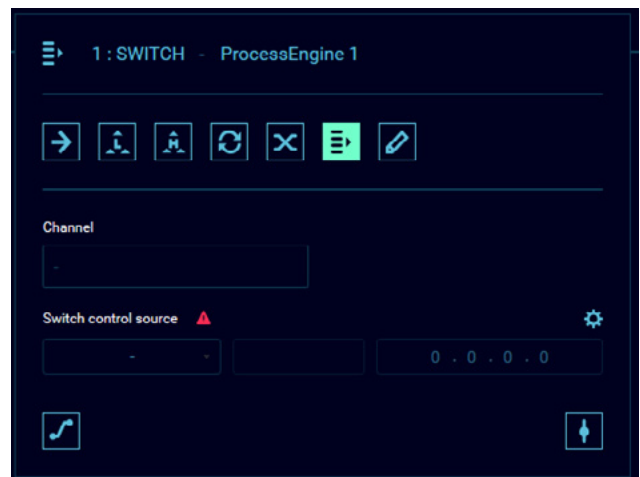
### SWITCH:

The switch functionality provides you with an easy to use tool to remotely select within up to four sources, which sources to control your rig. By sending different values for the switch channel, you'll be able to select the relevant source. The switching between sources does not include any crossfade.

From the switch panel, you can define the switching channel, the protocol and the universe number, as the IP address of the control source. Click on the gear wheel icon to change these parameters. Patch and Master/Limit options are available for this mode.

### Control channel mapping:

- 000 - 007 Do Nothing / Idle (current active source stays active)
- 008 - 015 Source 1
- 016 - 023 Source 2
- 024 - 031 Source 3
- 032 - 039 Source 4
- 040 - 247 Future use
- 248 - 255 Do Nothing (current active source stays active)



 The red warning triangle has the tooltip text:


*“The process engine cannot be configured without a Switch control source”*

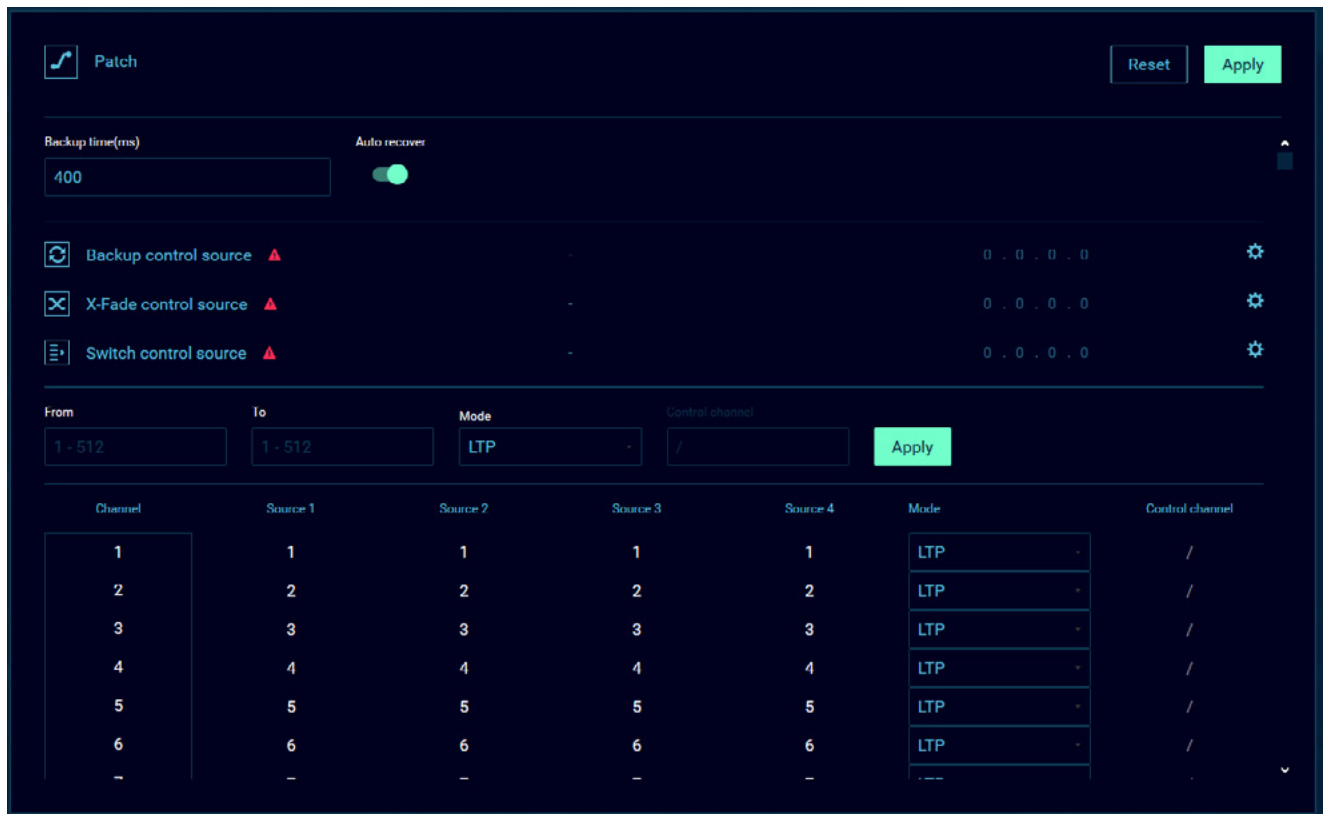
to indicate that the control source hasn't been configured yet. This warning will disappear once the control source has been configured.

**CUSTOM:**

This mode is ideal for a complex setup, or when per channel control is needed. Custom offers you to choose what policy to apply for each channel of each universe, and to create a complete custom soft patch. Up to four DMX, ArtNet, sACN, RTrPL, Internal or Play sources can be merged in this policy.

The custom mode offers you to combine any merging policy, but different modes as well (LTP, HTP, Backup, XFade, Switch).

To get access to the custom patch panel, simply click on the patch icon .



From this panel, you can define the complete patch per source, with any merging policy, or control source. Use the “From To” tool to quickly apply a merging policy or mode to a range of channel.

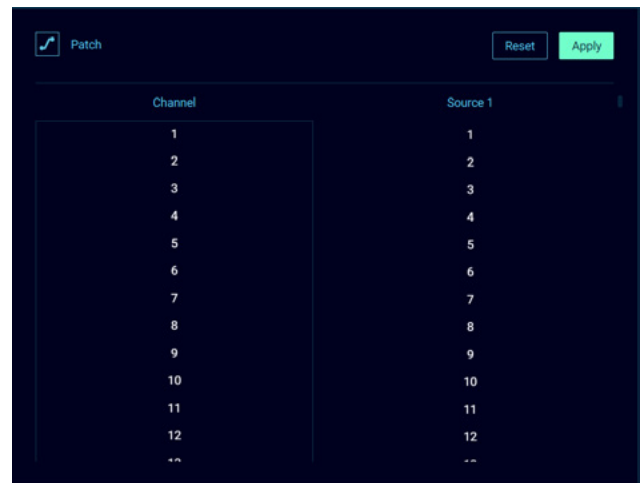
Once the merging policies have been applied to the DMX channels, you’ll be able to assign a remote-control channel. Use the “From To” tool to quickly apply a control channel to a range of DMX channel. Press the “Apply” button to save your settings.

**PATCH OPTION:**

Depending on the selected mode you applied to your process engine, you'll be able to modify the patch for your sources.

Once in the process engine panel, click on the patch icon to open the patch panel. From there, you can apply the patch you wish per channel.

Press "Apply" to save your settings.

**MASTER OPTION:**

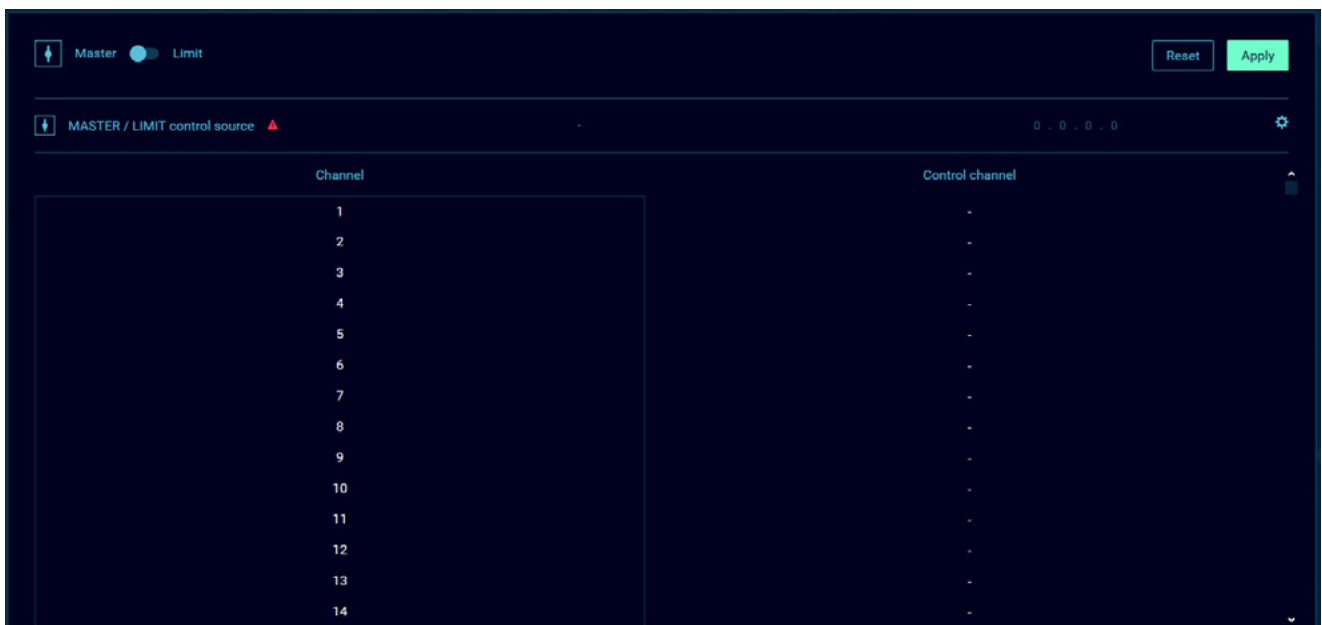
Depending on the selected mode you applied to your process engine, you'll be able to assign a master or limit channel to your output. Once in the process engine panel, click on the Master / Limit icon to open the patch panel.

First select the mode you wish to use, by clicking on the Master/ Limit switch, on the upper left hand-side of the panel.

You can define the control channel, the protocol and the universe number, as the IP address of the control source. Click on the gear wheel icon to change these parameters.

From there, you can apply any master/limit control channel to your output channels.

Press "Apply" to save your settings.



**Master / Limit explained:****MASTER:**

When choosing the Master option, we configure a control channel to act like a grand master. You can reduce the output level whilst the relationship between channels is being respected. The output is scaled to each individual channel. (Master value \* Channel value / 255)

**For example:**

Channel 1 = 204  
Channel 2 = 229  
Channel 3 = 128

If we now reduce the master channel to 204 the channels will output as follows:

Channel 1 = 163  
Channel 2 = 183  
Channel 3 = 102

**LIMIT:**

When choosing the Limit option, we configure a control channel to set a limit to the output. In this case the relationship between channels is not being respected.

**For example:**

Channel 1 = 191  
Channel 2 = 153  
Channel 3 = 128

If we now set the limit channel to be 178 the result will be as follows:

Channel 1 = 178  
Channel 2 = 153  
Channel 3 = 128

As the result shows, channel 1 has been reduced but channels 2 and 3 haven't been affected.

**6. CREDITS**

The following credits are available for this manual:

- Art-Net™ Designed by and Copyright Artistic Licence Holdings Ltd



- ANSI E1.20 – 2010 Entertainment Technology RDM, Remote Device Management over DMX512 Networks

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Slamstraat 13 | 3600 Genk | Belgium | T +32 11 812 189 | [info@luminex.be](mailto:info@luminex.be) | [www.luminex.world](http://www.luminex.world)