



*Artistic Licence*

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# *rackSplit octo*

User Guide



Please read these instructions before using the product.

This product has been designed & manufactured for professional use only. It should only be installed by a suitably qualified technician and in accordance with electrical regulations in the country of use.

Unless directed in the instructions there are no user serviceable parts inside the outer case of this product.

Always disconnect from the power supply when not in use.

Any specific IP rating, where appropriate, is given in the instructions. Unless otherwise stated this product is designed for indoor use only. If used outdoors it **MUST** be installed in an appropriate IP rated cabinet. Do not allow this product to be exposed to rain or moisture. Do not allow liquid to penetrate the product.

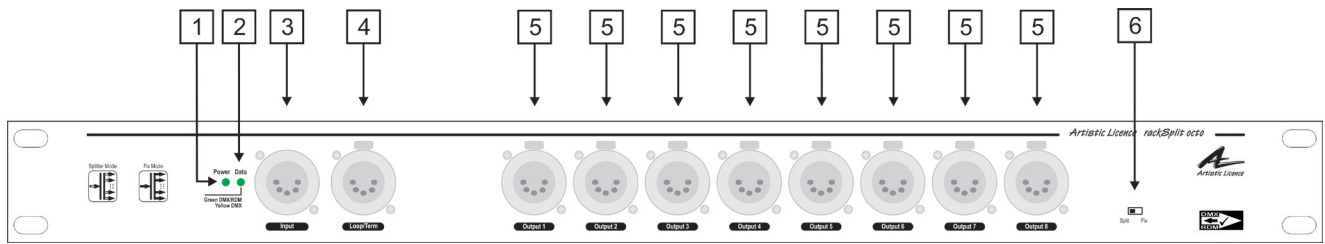
Please recycle all packaging.

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[Download the rackSplit octo user guide \(this document\) here:](#)



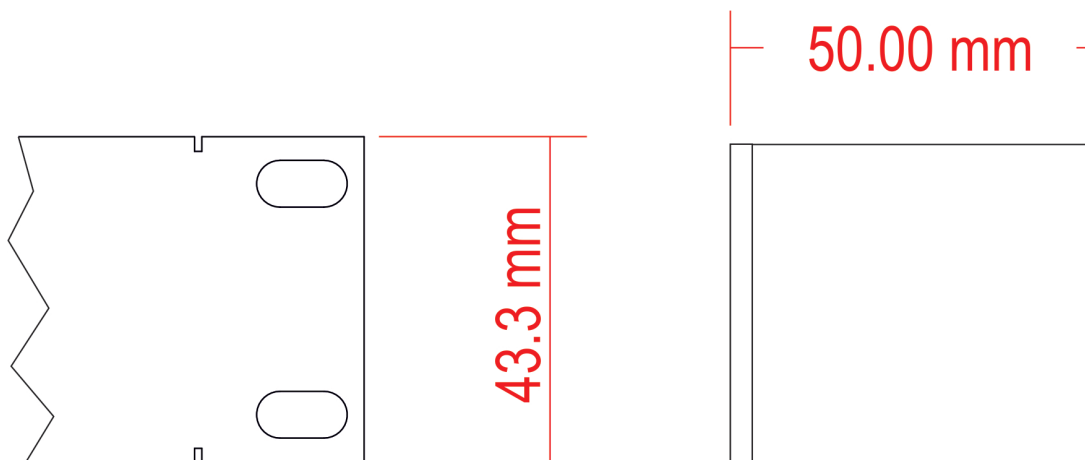
# Connections



Ref.	Type	Description
1	LED indicator	Power
2	LED indicator	Data
3	Data connection	DMX/RDM input
4	Data connection	Loop/Term**
5	Data connection	DMX/RDM output
6	Configuration	Split/Fix mode switch

\*\* Fit terminator if loop-through not required

# Mounting Diagram



## Overview

rackSplit octo is a 1U 19" rack mount DMX512/RDM opto-splitter/data-fixer with an ultraslim 50mm depth profile. It has 8 outputs and all connectors are Neutrik XLR 5-pin. The outputs are protected from electrical transients, while the input is optically isolated.

The product's ultraslim form factor makes it ideally suited for cramped control rooms with limited overhead rack space. Alternatively, in a touring environment, the rack can be packed front and back (i.e. 2 products per 1U slot) for maximum channel density.

The data-fixer mode (see page 5) can be activated on a per product basis using a slide switch located on the front panel. This is used to resolve flickering problems that can arise from intra-manufacturer compatibility issues, or from problematic fixtures that do not implement DMX/RDM correctly.

The product is supplied with integral rack ears and a standard IEC mains connector.

## Feature summary

- DMX512/RDM opto-splitter / data fixer
- 8 outputs, transient protected
- Optically isolated input
- 1U 19" rack mount
- Ultraslim 50mm profile
- Data Fix mode
  - RDM filter
  - DMX timing correction
- Neutrik XLR5 connectors

## Power Supply & Earthing

The internal power supply requires an input in the range 94-230 VAC with an earth connection. The mains fuse is not user changeable.

## Internal Earth and Isolation

Circuit	Description	
Chassis	Bonded to Earth-Ground	
DMX512 input	Type	Optically isolated
	Pin 1	Isolated
	Shell	The connector shell is connected to chassis
DMX512 outputs	Type	Ground referenced
	Pin 1	Connected to Internal Logic Ground
	Shell	The connector shell is connected to chassis
Internal Logic Ground	Connects to Earth-Ground via 10 Ohm resistance	

## Input

The input is optically isolated from the outputs and mains earth. This isolation offers protection from potentially dangerous high voltage accidents. Also it can eliminate potential earth/ground differential issues as the input is not electrically connected to any of the outputs.

## Loop/Term

A passive loop-through connection allows onward connection to other DMX512 devices. If this feature is not required then the signal must be terminated.

## Outputs

rackSplit octo has electrical (transient) protection on the outputs, to guard against both static electricity and LED power supply faults or mis-wires. Each output is independently buffered and can drive up to 32 DMX devices. It is not necessary to terminate any unused outputs.

## DMX512 Wiring

XLR Pin (Convention)	Function	Colour
1	Ground	<b>Black</b>
2	Data -	<b>Blue</b>
3	Data +	<b>Red</b>

## Split/Fix Mode

Normal splitter operation is achieved by setting the switch on the front of the product to 'Split'. In splitter mode, the outputs operate as bi-directional RDM ports and all DMX data received is passed onto the outputs.

Alternatively, set the switch to 'Fix' if you are experiencing product compatibility problems. Unfortunately, there are numerous products on the market that will not accept the wide range of legal DMX timings and data. Fix mode attempts to clean-out any unusual or non-standard timing and data before sending to the output. This includes stripping out all non-zero start codes (including RDM), forcing a 512-channel footprint and calming any timing jitter.

The detailed fix specification is as follows:

- Accepts and corrects break in range 56  $\mu$ s – 1000  $\mu$ s and outputs 250  $\mu$ s
- Accepts and corrects MaB in range 5  $\mu$ s – 1000  $\mu$ s and outputs 30  $\mu$ s
- Accepts and corrects MbB in range 0  $\mu$ s – 1000  $\mu$ s and outputs 30  $\mu$ s
- Accepts channel count 1 – 512 and outputs 512
- Accepts refresh period from 23 ms – 1000 ms and outputs 30ms
- Filters out multiple consecutive breaks
- Re-times bytes of 1 stop bit to 2 stop bits
- Filters out all non-zero start code packets
- Re-times digital signal

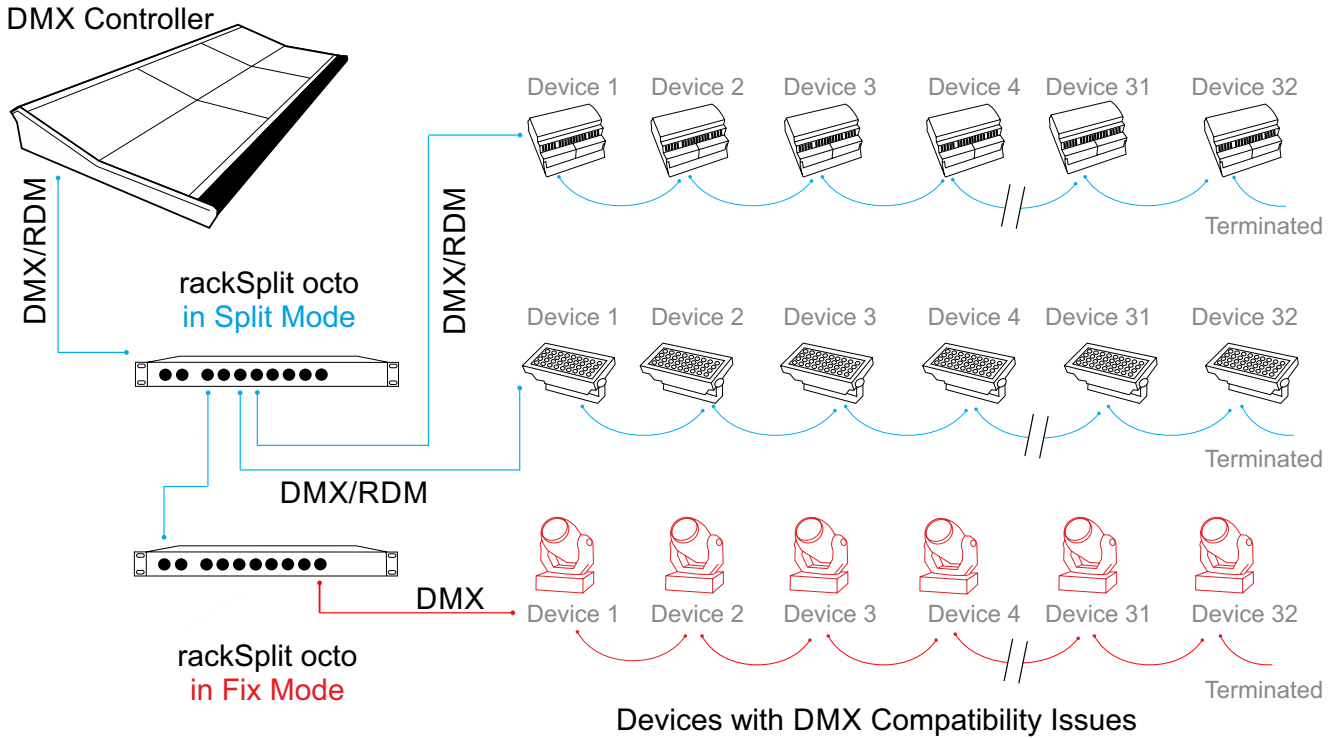
## LED indicators

The product features two LED indicators on the front panel.

- Power
  - Green: power on
  - Red (split mode): data error or collisions detected
  - Red (fix mode): data fixing is occurring
- Data
  - Off: no data received
  - Green: DMX and RDM received
  - Yellow: DMX only received

# Application Diagram

The diagram below shows how rackSplit octo could be utilised in a typical application. The upper unit is set to normal Split mode and is routing DMX/RDM data to compliant devices. The lower unit is set to Fix mode, which removes the RDM and enables the problematic fixtures to function without flicker.



# Specification

<b>Mechanical</b> <ul style="list-style-type: none"><li>• Housing: 19" 1U rack enclosure</li><li>• Material: metal</li><li>• Overall dimensions: 1RU (H) x 19" (W) x 50 mm (D)</li><li>• Weight: 0.82 kg</li><li>• Country of manufacture: UK</li></ul>
<b>Environmental</b> <ul style="list-style-type: none"><li>• Operating temperature: 0°C to 40°C</li><li>• Storage temperature: -10°C to +50°C</li><li>• Operating relative humidity (max): 80% non-condensing</li><li>• IP rating: IP20 indoor use only</li><li>• Certification: CE, WEEE, RoHS</li><li>• Warranty: 2-year (return to base)</li></ul>
<b>Power &amp; Electrical</b> <ul style="list-style-type: none"><li>• Operating voltage: 94-230 VAC +/- 10%</li><li>• Operating frequency: 47-63 Hz</li><li>• Input connector: IEC C13 male</li><li>• Input power (max): 250 W</li><li>• Duty cycle: 100% @ 25°C</li><li>• Internal fuse: T1A slow blow</li></ul>
<b>Data Connections</b> <ul style="list-style-type: none"><li>• Input: XLR5M (1 no.)</li><li>• Loop/Term: XLR5F (1 no.)</li><li>• Output: XLR5F (8 no.)</li></ul>
<b>Control</b> <ul style="list-style-type: none"><li>• Input protocols: DMX512, DMX512 (1990), DMX512-A, RDM V1.0 (E1.20 - 2010 ESTA Standard)</li><li>• Output protocols: same as input</li></ul>

<b>DMX512/RDM Input</b> <ul style="list-style-type: none"><li>• Input mode: Optically isolated</li><li>• Input ESD protection: 12 kV</li><li>• Input voltage protection: +/- 80 V</li></ul>
<b>DMX512 Outputs</b> <ul style="list-style-type: none"><li>• Output mode: ground referenced</li><li>• Output ESD protection: 12 kV</li><li>• Output voltage protection: +/- 80 V</li></ul>
<b>LED Indication</b> <ul style="list-style-type: none"><li>• Power / Data</li></ul>
<b>Configuration</b> <ul style="list-style-type: none"><li>• Split/Fix slide selector</li></ul>
<b>Package Contents</b> <ul style="list-style-type: none"><li>• rackSplit octo</li><li>• IEC mains lead</li></ul>

**No user serviceable parts inside  
Disconnect power before opening  
Product must be earthed**

## CE Compliance



rackSplit octo is CE compliant

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## Warranty

All products are covered from date of purchase by a two-year return to base warranty.

By return to base, we mean that the customer is responsible for all costs of transport to and from Artistic Licence.

Returns will not be accepted without prior authorisation. In order to discuss a request to return goods, please email:

[Sales@ArtisticLicence.com](mailto:Sales@ArtisticLicence.com)

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## Compliance

All Products manufactured or sold by Artistic Licence Engineering Ltd are fully compliant with the appropriate CE and RoHS regulations. Product specific information is available on request.

## Waste Electrical & Electronic Equipment (WEEE)

Artistic Licence is a member of a WEEE compliance scheme and will happily recycle any of our products that you, at your expense, return to us.



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Due to our policy of continuing product improvement specifications are subject to change without notice

