



Artistic Licence



Art-Relay

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.

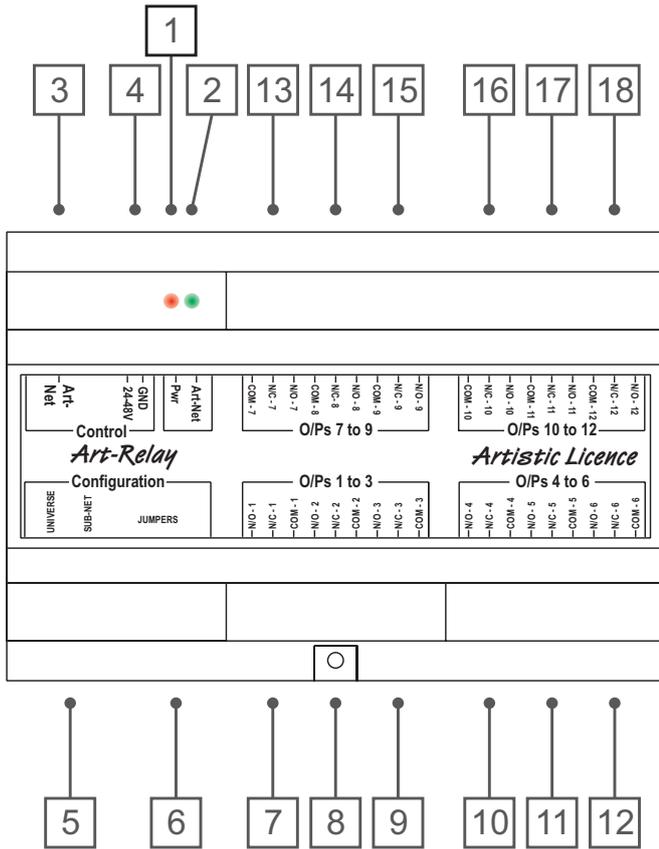
Please recycle all packaging.

Copyright © Artistic Licence Engineering Ltd. All rights reserved.

Download the user guide by scanning the following QR code:

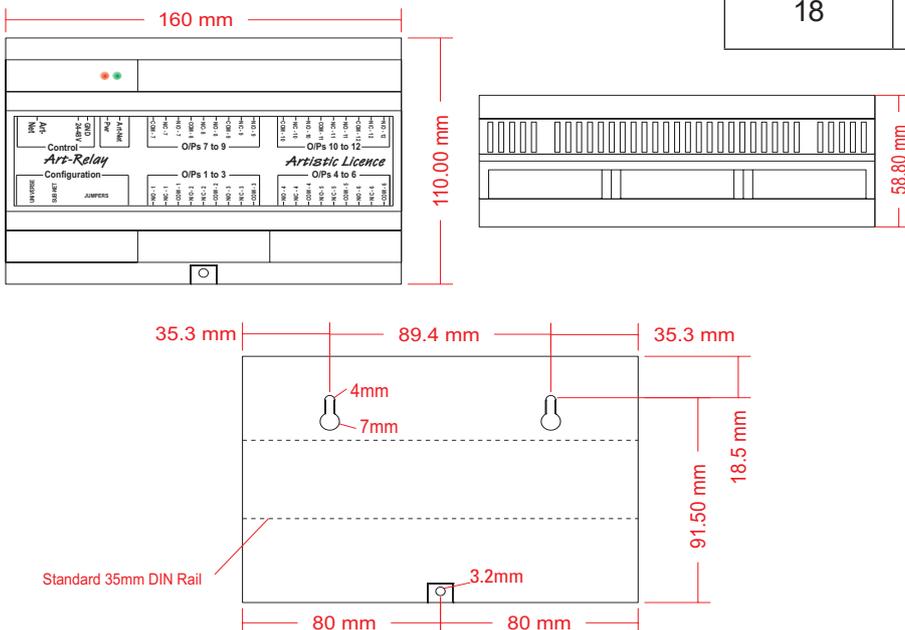


Connections



Reference	Type	Description
1	LED	Power
2	LED	Ethernet Received
3	Connection	Ethernet
4	Connection	Power Input
5	Configuration	Universe / Sub-Net Select
6	Configuration	Jumpers
7	Relay Connection	Relay 1
8	Relay Connection	Relay 2
9	Relay Connection	Relay 3
10	Relay Connection	Relay 4
11	Relay Connection	Relay 5
12	Relay Connection	Relay 6
13	Relay Connection	Relay 7
14	Relay Connection	Relay 8
15	Relay Connection	Relay 9
16	Relay Connection	Relay 10
17	Relay Connection	Relay 11
18	Relay Connection	Relay 12

Mounting Diagram



Overview

Art-Relay is a DIN Rail mounted device that provides 12 mains relays and is controlled via Art-Net or sACN. Each relay can be switched independently. The product is powered via an external power supply unit or, alternatively, the Power over Ethernet (PoE+) standard.

The product is easily configured by dialling in the required universe using the wheel selectors. Alternatively, Art-Relay can be remotely configured via the internal web-server or over the network using DMX-Workshop (free-of-charge software available from Artistic Licence). DHCP is supported for automatic IP address allocation.

Summary of Key Features

- 12 mains relays
- Relays rated at 250V AC, 6A non-inductive
- Art-Net or sACN Controlled
- PoE+ (IEEE 802.3at - 2009) supported
- Simulated RDM device for Start Address programming
- DHCP
- DIN Rail mount
- Surface mount

Power

Art-Relay can be powered from either an external PSU (24 - 48VDC) or with PoE+.

External PSU

If an External Power Supply is used, it is recommended that a ferrite core be fitted onto the DC power lines as close as possible to the Art-Relay. This protects the unit from any electrical spikes that appear on the DC line.

PoE+

The power consumption of Art-Relay is such that when PoE+ is used, the ethernet switch must be capable of providing Class 3 power. An example of a suitable power source is Art-Switch PoE4, which provides Class 3 power on all 4 of its outputs.

Relays

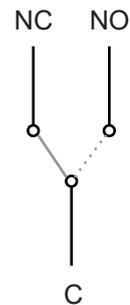
The relays energise at a DMX value of 128. Each relay has three connections; Common, Normally Open and Normally Closed.

Common (C)

This connection is always used and is connected to either the open or closed pin depending on the state of the relay.

Normally Open (NO)

This pin is not normally connected to the Common pin. The relay must be energised for a connection to be made.



Normally Closed (NC)

This pin is connected to Common when the relay is not energised.

Loading

Art-Relay uses electromechanical relays with a maximum contact rating of 6A when used at 250V AC supply. The relays are not designed to drive loads with high inrush currents or high inductance. Attempting to connect loads of this type will damage the relays and could cause them to short.

For example, switch mode PSUs found in most moving heads have an inrush current of 20A or greater. This is more than three times the rating of the 6A relay in Art-Relay. Therefore, either a higher rated product should be used, or else a surge protection device should be fitted. Relay contacts require external fusing.

Main Configuration

Art-Relay uses one channel to control each relay, requiring 12 channels in total.

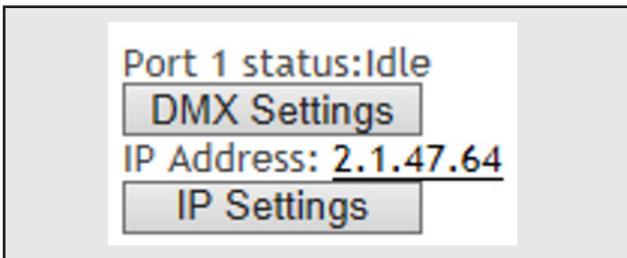
The ethernet / DMX Universe used within Art-Relay can be selected manually or via remote configuration (see Web-Server and DMX-Workshop). The (4-bit) Universe & Sub-Net dials give access to the range 0-255. If higher Universe numbers are required (as supported by Art-Net 3 and sACN), remote configuration is the only option (this requires an additional

8-bit 'Net' field, for which there is no physical dial). Note that settings made in DMX-Workshop or the Web-Server will override the manual dial settings.

Within Art-Relay, an RDM device is simulated to enable the start address to be set via Art-Net.

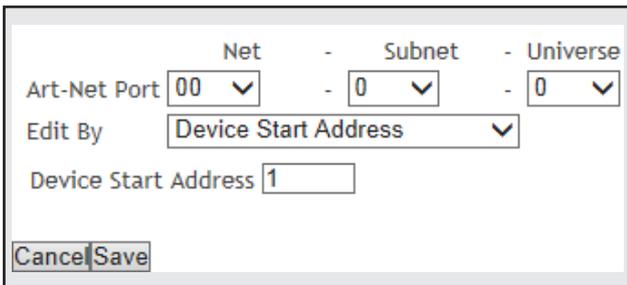
Web-Server

To use this option, type the IP address of the unit into a web-browser that has been configured to be on the same IP address range. Alternatively type in 'ARTRELAY' (Windows only). The home screen provides access to DMX and IP Settings as shown:



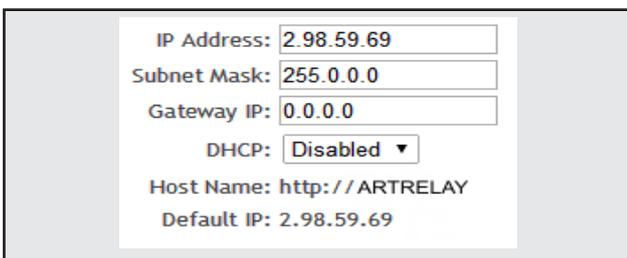
DMX Settings

Click on 'DMX Settings' to access the selection of Net, Sub-Net and Universe values, and to choose between device or sub-device start address, as shown below.



IP Settings

Clicking on 'IP Settings' brings up the configuration screen shown below. The Gateway IP is used when the device is being controlled outside a closed network. A Subnet Mask of 255.0.0.0 means the network address is defined by the first byte of the IP and the node address by the remaining three bytes.



A useful additional feature of Art-Relay is the ability to enable automatic IP address allocation on networks controlled by a DHCP server. The factory default is a Class A address in the 2.x.y.z range but with DHCP client enabled. To select static a IP address, disable DHCP.

The default IP and static addressing can be forced manually by the following procedure:

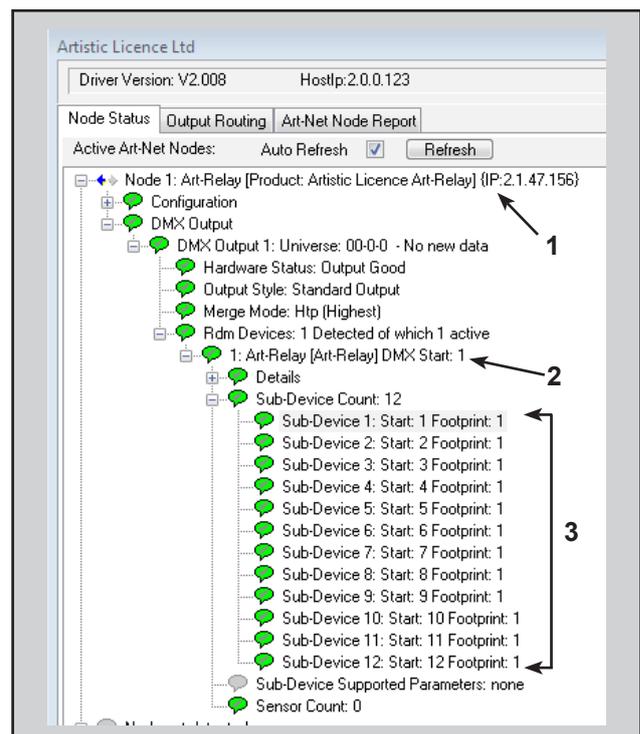
1. Set the Sub-Net wheel to 9
2. Power cycle (turn off then on again)
3. Power off
4. Set the Sub-Net wheel to F
5. Power on

DMX-Workshop

DMX-Workshop is a software application for managing Art-Net networks, available as a free-of-charge download from Artistic Licence: <http://tinyurl.com/dmxartpage>

It can be used to configure Art-Relay as described in the Web-Server section above, while offering additional functionality such as the ability to upload firmware.

The main tool is the 'Node List' screen shown below. The Art-Relay unit is shown as an Art-Net node (1) containing a virtual RDM device (2). Each output channel of the Art-Relay is assigned its own sub-device (3).



If the user wishes all 12 output channels to be consecutively addressed, this is achieved by setting the RDM device start address (right-click on (2)). Alternatively, if the user wishes to individually set the address of each channel, this is achieved by setting the start address of the sub-device (right-click on (3)).

Generally, right-clicking on any entry brings up a menu of the available options.

Data Loss Mode

DMX-Workshop allows programming of a data loss mode, which determines what Art-Relay should do if no new lighting data is received after 15 seconds:

- Scene 1 = All outputs on
- Scene 2 = All outputs off
- Any other scene = Holds last value

The last state is not retained between power cycles, so the product will always start up with the outputs off until they receive a frame of ArtDMX or sACN.

Jumper Configuration

There are several advanced settings, beyond the scope of normal operation, that can be accessed by fitting the supplied jumpers over the configuration pins. The jumper settings information is shown below.

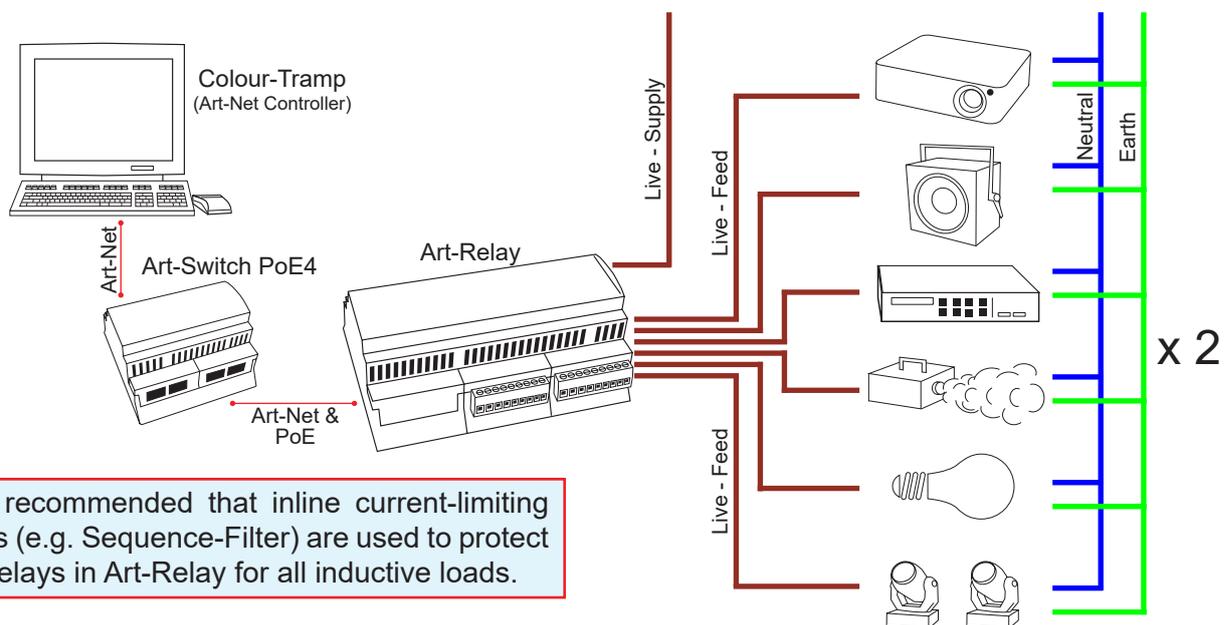
JP0-2	For future use
JP3	HTTP server disabled (e.g. no web page functionality)
JP4	10.x.x.x IP addressing active (ignored when DHCP is active)
JP5	RDM disabled on all outputs
JP6	Inverts the low byte of the IP address
JP7	For future use
ROM Boot	Switch to boot-loader* mode on power cycle

*Factory ROM mode ready for firmware upload. It is not usually necessary to use this procedure as firmware uploads can be initiated directly using DMX-Workshop.

LED/Error Messages

LED State	Description
Power & Art-Net alternately flashing	SRAM / E2Prom Fault (Contact us for help)
Both flash 3 times (informational)	Universe and Sub-Net wheels ignored (device has been configured remotely)
Both flashing continuously (informational)	Boot loader mode

Application Diagram



It is recommended that inline current-limiting filters (e.g. Sequence-Filter) are used to protect the relays in Art-Relay for all inductive loads.

Art-Relay Specification

Mechanical <ul style="list-style-type: none">• Housing: DIN Rail Case• Material: Polycarbonate plastic, UL94-V0 rated• Overall dimensions: 160 mm (W) x 110 mm (H) x 62 mm (D)• Weight: 0.34 kg• Mounting: 35 mm DIN Rail or Surface Mount• Country of manufacture: UK	Outputs <ul style="list-style-type: none">• Type: 12 x changeover relay, volt-free contacts• Connectors: 9-pin screw terminals (4 no.)• Maximum switching voltage: 250 VAC• Maximum peak current: 6A• Rated load (AC1 non-inductive): 1,500 VA• Rated load (AC15 inductive): 400 VA• Rated load (Single phase motor): 0.3 kW• Minimum load: 300 mW• Protection: User supplied external protection• Isolation: 1 kV between relay contacts
Environmental <ul style="list-style-type: none">• Operating temperature: 0°C to 40°C• Storage temperature: -10°C to +50°C• Operating relative humidity (max): 80% non-condensing• IP rating: IP20 indoor use only• Certification: CE, WEEE, RoHS• Warranty: 2-year (return to base)	Control <ul style="list-style-type: none">• Input Protocols: Art-Net, sACN
Power & Electrical <ul style="list-style-type: none">• Input voltage: 24-48 VDC• Input connector: 2-pin pluggable screw terminal• Input power (max): 12 W• Duty cycle: 100% @ 25°C• DC fuse: internal resettable fuse for control electronics	Data Connection <ul style="list-style-type: none">• RJ45 ethernet (1 no.)
Ethernet <ul style="list-style-type: none">• Type: 10BaseT• Isolation: 1 kV• PoE+ (IEEE 802.3at - 2009) supported	LED Indication <ul style="list-style-type: none">• Power / Data Activity
	Configuration <ul style="list-style-type: none">• Remote: Web-browser, DMX Workshop• Manual: Wheels / Jumpers• Configurable settings include:<ul style="list-style-type: none">- Net, Sub-Net, Universe- IP Address (DHCP)- ROM boot, RDM disable
	Package Contents <ul style="list-style-type: none">• Art-Relay• User guide• Jumpers (for configuration pins)
	Ordering Info <ul style="list-style-type: none">• Product code: Art-Relay
	Accessories (not included) <ul style="list-style-type: none">• PSU-24-2.5-DR (powers up to 2 units)• Art-Switch PoE4 & PSU-48-1-DR (powers up to 4 units)

Safety Warning

The unit has not been designed for domestic use. Proper safety precautions need to be followed when installing and using the unit.

When Art-Relay is used for high current or voltages the unit shall be placed within a locked enclosure and shall be connected to the power by a qualified electrician.

All relay connections that are used with high current or voltages shall be externally fused.

CE Compliance



Art-Relay is CE compliant when installed in a shielded and earthed metal case

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

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.



Artistic Licence

Studio 1, Spectrum House
32-34 Gordon House Road
London
NW5 1LP
United Kingdom

Telephone +44 (0) 20 8863 4515
Fax +44 (0) 20 8426 0551
Email: Sales@ArtisticLicence.com
Web: www.ArtisticLicence.com

Customer support and knowledge base:
www.ArtisticLicence.com/support.html

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

