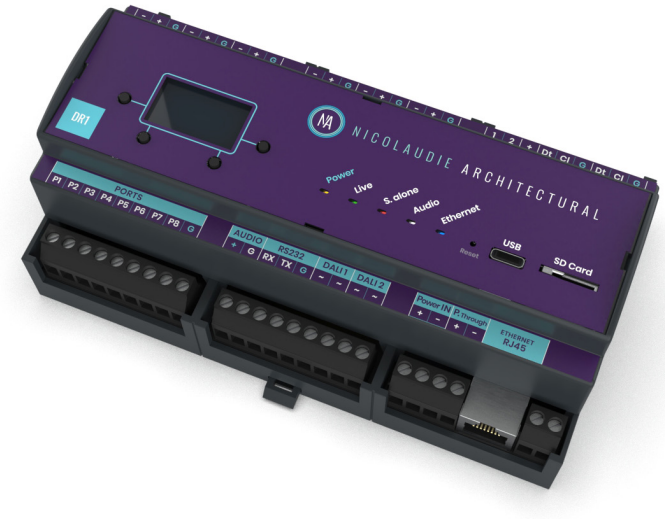
DINA-DR1 / LITE

DIN rail mounted - Advanced lighting controller



Overview

The DINA-DR1 is a lighting controller for the most ambitious of projects, outputting 6 DMX512 universes (3072 channels) in 20 zones, eDMX and DALI simultaneously. Trigger lighting scenes using calendar triggers and conditional rules. Connect to the Nicolaudie Cloud for remote control and management.

Lighting levels, color and effects can be programmed from a PC or Mac. Remote control from iPhone/iPad, Android, Win & Mac.

www.nicolaudie.com/dina.htm

Key Features

- DMX512 / eDMX / LED Pixel Stand Alone controller
- DR1 6x Universes (3072 channels)
  or DR1 LITE 2x Universes (1024 channels)
- Output Universes via DMX512 (up to 6 universes) & Artnet/sACN (up to 12 universes with SUT universe upgrade)
- 2x DALI buses (single-master) *
- SUT Technology allows the device to be upgraded with more universes & used with other Nicolaudie Group software
- USB & Ethernet connectivity
- Stand Alone mode with 2000 scenes & 20 zones
- 16MB flash memory & microSD slot
- 8 dry contact trigger ports
- RDM compatible
- Windows/Mac software for programming
- iPhone/iPad/Android/Mac & Windows apps for remote control
- Compatible with NATouch wall controllers
- Control 2 external relays
- Nicolaudie Cloud * : Remote control and management via internet connection (subscription required)
- Audio triggering / sound-to-light *
- RS232 protocol scene control *
- Direct support for LED Pixel Tape *

* Optional upgrade with DR1 LITE model

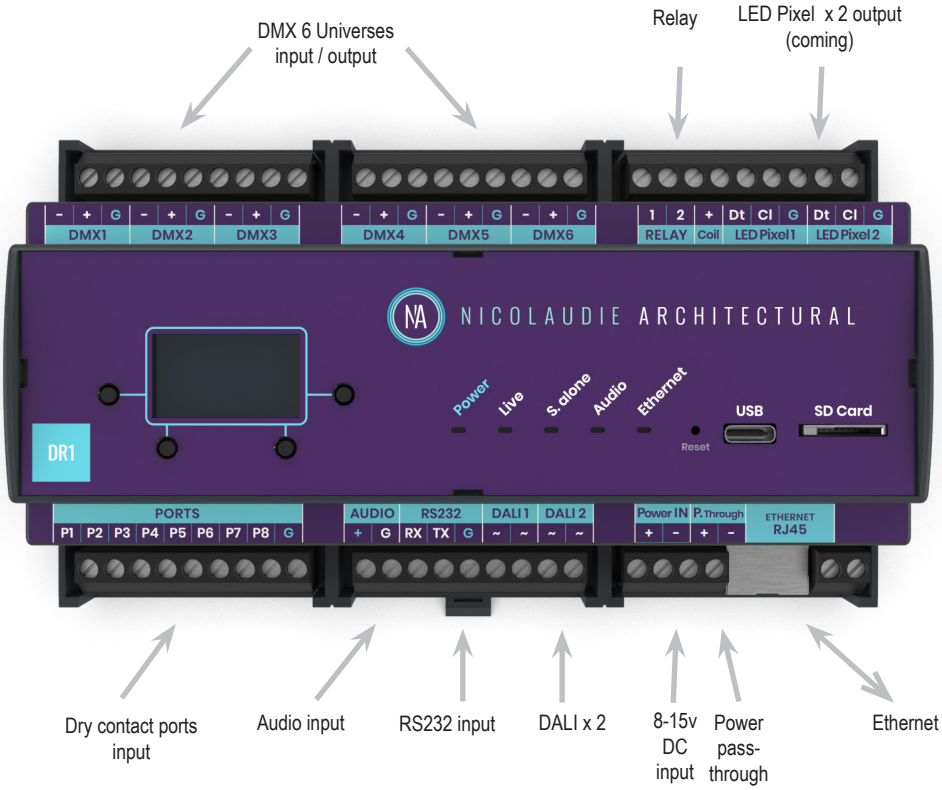
Technical Data

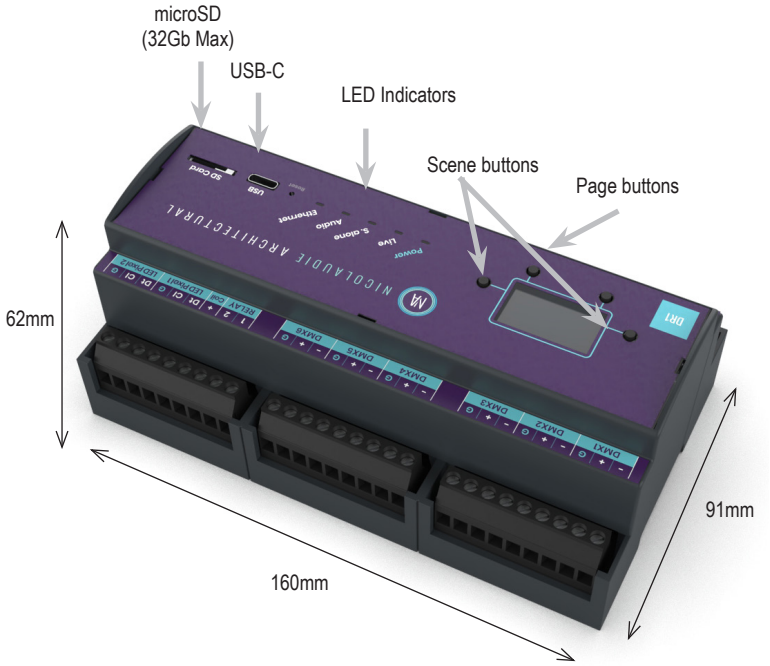
Input Power	12v DC (8-15V range)
Output Protocol	DMX512 (x6), DALI-2, eDMX, LED Pixel (SPIx2)
Programmability	PC, Mac, Android, iOS
Connections	USB-C Ethernet Screw terminals for - 6 DMX / RDM Universes - LED Pixel (coming) - 2 DALI loops - 8 Contact ports - Relay - 12v power-in & pass through - RS232 scene trigger - Audio in Battery holder (LIR2032 3.6v), microSD slot
TCP Connections	10 + 1 cloud
Memory	16MB flash, SD Card (FAT32 or exFAT)
Environment	IP20
Buttons	2 scene, 2 page, 1 reset
Dim / Weight	160 x 91 x 62 mm 317g
OS Requirements	Mac OSX 10.13+, Win 10/11
Standards	ETL, Low voltage, EMC, and RoHS

Optional Accessory 12V AC/DC power supply

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Connections







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Easy Installation

1. Mount a DIN Rail or DIN Rail Enclosure against a wall

2. Connect the wires

POWER: Connect 12V DC ACDC supply. The DINA-DR1 can accept 8v-15v.
Be sure to not invert the + and the ground.

DMX: Connect DMX cables from one of the 6 universes to the lighting receivers.
DALI: Connect DALI cables from DALI1 and DALI2 to your DALI devices.
NETWORK : Connect an Ethernet cable to a network. For Nicolaudie Cloud, an internet connection is required.

3. Clip the DINA-DR1 onto the DIN RAIL

On the back of the interface housing is a channel designed to accept a DIN Rail with a black plastic clip which secures the interface.

To mount: Slide the mounting teeth behind the top of the rail and then rotate downwards to engage the clip.

To dismount: At the lower edge of the interface you will see a plastic clip. Pull this down to release interface from the rail.



Setting up the controller

Programming the Controller

The controller can be programmed from a PC or Mac. All computer software and manuals available at nicolaudie.com/downloads Refer to the corresponding software manual for more information.

Windows / Mac Programming Software

ESA Pro 2 Software (Windows/Mac) Designed for lighting professionals. Includes multi-zone programming, a time-line editor, automations, advanced triggers (TCA), DMX512, DALI, sound-to-light, relays and a standalone mode simulator.
nicolaudie.com/esapro2.htm

ESA2 Software (Windows/Mac) - Single zone, DMX512, step-based programming with time / port triggers. It only requires a few minutes to setup the software and gain full control of any kind of lighting.
nicolaudie.com/esa2.htm

Hardware Manager (Windows/Mac)
Update firmware, set clock & manage device. Use for DALI commissioning.

RDM Manager (Windows/Mac)
Set DMX address and personality. View information about the fixture and sensors.

Remote Control

Arcolis Remote makes life easy, allowing you to control your Nicolaudie interface over a local network or cloud from your iPhone/iPad, Android device, Windows or Mac. nicolaudie.com/arcolis-remote

Arcolis Touch Create a customized remote controller interface using ESA Pro 2.5 software. Available for iPhone/iPad and Android devices. nicolaudie.com/arcolis-touch

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Connections and triggering

DMX512

Connect up to 6 DMX universes to the controller using the DMX connections DMX. Up to 32 DMX devices per DMX512 bus.

DALI

Connect up to 2 distinct DALI buses to the DALI1 and DALI2 connections. These support DALI-2 control-gears (e.g. DALI output drivers) in a single-master configuration with up to 64 addresses per bus. The DINA acts as the master. Neither input devices nor other masters are currently supported. Read the DALI section of the ESA Pro 2 manual for setup.

PORTS

Use up to 8 external trigger ports (dry contacts)
Connect G and P1 to trigger port #1 etc. Program port triggers in the software to start actions. e.g. start scene x

AUDIO / SOUND-TO-LIGHT

The controller has sound-to-light capability running in standalone mode.
- Audio beats are detected using the Line In port.
- The signal should be line or headphone level. For microphone level, the signal will need a pre-amp.
- The audio LED will flash white when a beat is detected.
- Programming/configuration of sound-to-light must be made using ESA Pro 2. Refer to the ESA Pro 2.2 manual.

RS232

Make a cable using the 3 pins : TX, RX and G (GND)
Set the RS232 communication parameters to :
9600bds, 8 bits, no parity, 1 stop bit

Messages should be hexadecimal not decimal
(ie. 1 = 01, 255 = ff etc.)
- To play a scene, send 4 bytes : 1 x y 255
- To stop a scene, send 4 bytes : 2 x y 255
- To pause a scene, send 4 bytes : 3 x y 255
- To release a pause, send 4 bytes : 4 x y 255
- To reset a scene, send 4 bytes : 5 x y 255

When (y)=0, (x) can be set 0 - 255 to trigger scenes 0-255
When (y)=1, (x) can be set 0 -255 to trigger scenes 256-511
... and so on, up to (y)=7) and (x) =208 for scene 2000.
The index of a scene can be found in ESA Pro 2.2 using the *Scene List* button on the Standalone screen.

NICOLAUDIE CLOUD

The Cloud allows remote triggering and management of the controller via the internet. Cloud licence required after free 14 days.

Connect the Ethernet port to a network with internet access. Read the *Nicolaudie Cloud Control* and *Cloud Quickstart* at nicolaudie.com/download in the *User Manuals* section.

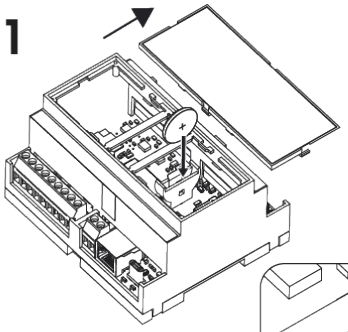
LED INDICATORS

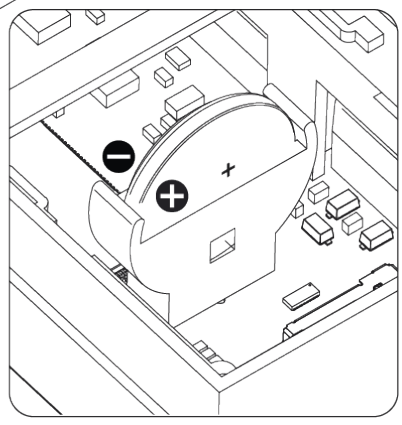
- POWER: orange LED is ON when the interface is powered on
- LIVE MODE: green LED flashes when software is connected
- STANDALONE MODE: red LED is ON when the controllers is running in standalone mode
- AUDIO: white LED flashes when the controller detects a beat or pulse from the microphone or Line In
- ETHERNET: blue LED flashes when the controller is connect to a local network

BATTERY

3.6v rechargeable LIR2032 battery provides power to store date and time and last played scene in case of a power cut.
Warning: Do not replace with a non-rechargeable CR2032 battery as these can leak and cause damage. Battery should not be relied upon for daily power outages due to life of ~500 cycles or relied upon in temps below 0°C.
Please note that the included battery is syored in a separate box within the package. Battery installation instructions are provided below.

1





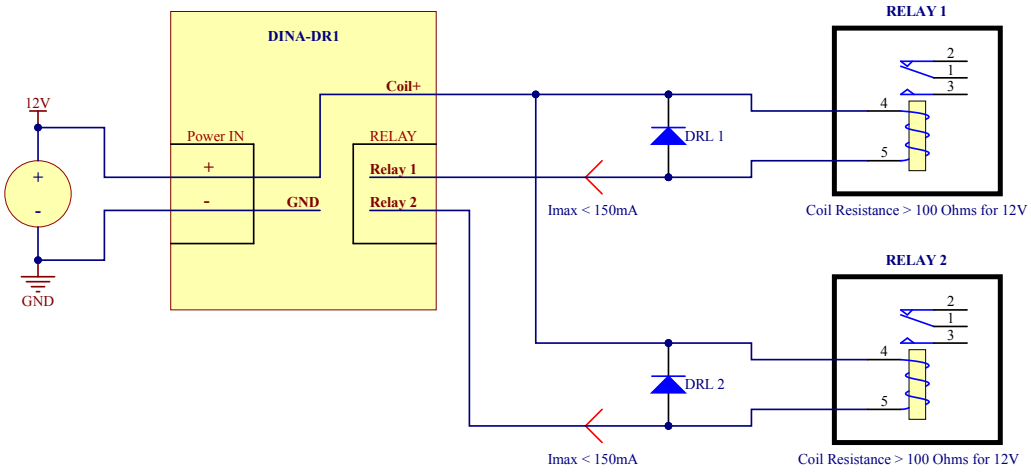
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Connections and triggering

RELAY CONTROL

Two relays can be connected to the DINA between the connections Coil+ and Relay 1 or 2.
Relay 1 and 2 are open drain outputs that allow the current to flow according to the parameters of your scenes. See ESA Pro 2 manual for software programming using Relay time line blocks. These can be used to turn on and off other equipment.



LED PIXEL CONTROL

The DINA is compatible with any LED Pixel strip via the 2x LED Pixel connections which include connections for Data, Clock (if needed) and GND.

ESA Pro 2 includes configuration settings for some common LED Strip ICs (e.g. WS2811, APA102, etc). However, any LED Strip can be supported by changing the timing information. It can support two different LED Pixel Strip types concurrently when connected to the two LED Strip connections. Refer to the ESA Pro 2 manual for programming and configuration.

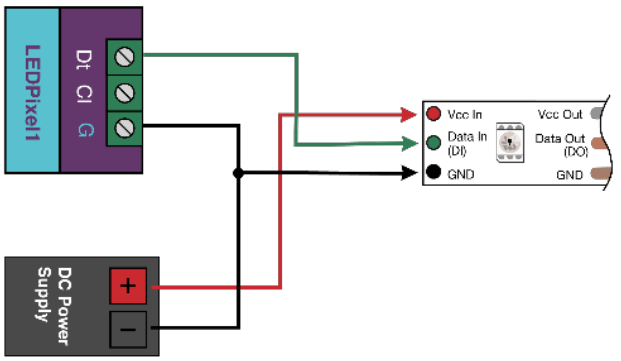
Note: The wires between the LED Pixel connections and the LED Strip must be no more than 1 metre in lenght to avoid flicker. If greater distance is required, use DMX512, Art-Net or sACN instead.

LED Strips can be categorised into 3 basic types:

1. Single Signal Wire

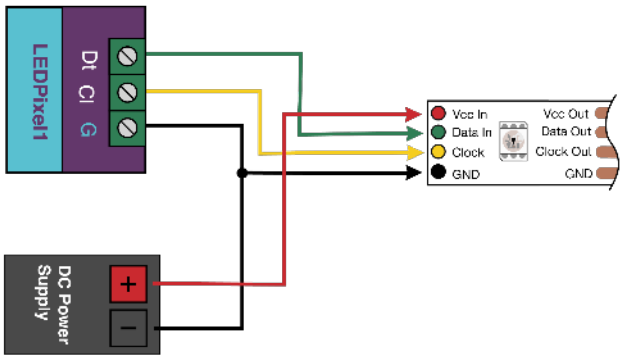
These strips require 3 connections from the controller and power supply.

- Connections: Vcc (Power/V+), DAT / DI (Data In), GND (Ground)
- LED Chips (IC): WS2811, WS2812B, UCS2903, SK6812



2. Two Signal Wires: Clocked / SPI Digital

- Connections: Vcc (Power/V+), DAT / DI (Data In), CLK / CI (Clock In), GND (Ground)
- LED Chips (IC): APA102, APA102C, SK9822



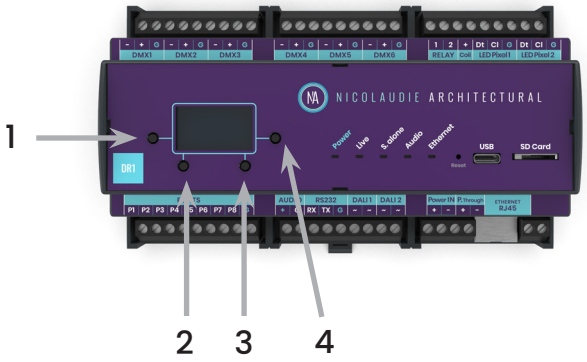
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3. Dual-Signal / Fault-Tolerant Strips (2 Data Wires)

- Connections: +V(Power), GND (Ground), DAT / DI (Primary Data), BI (Backup Data)
- LED Chips (IC): WS2805 (12V / 24V RGBCCT)

Hardware settings display

Press and hold buttons 2 and 3 for 2 seconds to display the controller's settings. Repeat to leave the display mode. Use buttons 1 and 4 to scroll through the screens.
The controller's settings are divided into 8 pages:



1. Info Screen:

- Date and Time: Displays the internal date and time.
- Model Name and Serial Number
- Firmware Version and Date

Note: Firmware and time/Date settings can be updated using the Hardware Manager software installed alongside your PC / Mac programming software.

2. Ethernet Screen:

- DHCP Status: Indicates whether the device is set to automatically obtain an IP address (ON) from a router or is using a manually assigned static configuration (OFF).
- IP Address
- Subnet Mask (MASK): Enables routers to identify which network a device belongs to.
- Gateway (GW): This is typically the IP address of your internet router.
- DNS: Shows the Domain Name System address.
- UPNP: Indicates if Universal Plug and Play is active.

Note: If the IP address displays 0.0.0.0, check the physical Ethernet connection or your DHCP server settings.

3. USB Screen: This setting should be left as Auto.

4. SUT Screen (Licences):

Displays information about the licenses loaded onto the device. For a full list of SUT licences on the device, connect the controller to Hardware Manager and look at the SUT screen.

- Synchronization Date and Time: Last synchronized date and time with our server.
- SA Channels: The number of Standalone DMX channels.
- Authorization (OFF AUTH): Displays the remaining time or
- "NO LIMIT" status for operation without an active server handshake.
- Live Channels: The number of Live DMX channels.
- Ports: Shows if ports are enabled on the device.

5. System Monitor Screen: Displays the CPU load. It is common to see 100% usage.

6. NSA Monitor Screen:

- Rate (Hz): Average frequency of last 50 cycles.
- SL Period: Slowest period of last 50 cycles.
- CPU ($): CPU usage by NSA Engine.
- Stack (%): Memory usage by NSA Engine.

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7. Debug Screen:

- Hardfault: When enabled, if a Hardfault occurs, the device displays debugging information on the screen. The device remains frozen until a button is pressed.
- NSA Log: This refers to the New Stand Alone engine activity log. The Controller supports storing activity logs on the SD card or on a syslog server

8. Cloud Association Screen:

When associating the device with the cloud, this screen will display a temporary security code.

- Relay: Connected or stopped refers to the connection to our relay server.
- Err: If any errors occur, this will be displayed here.

Log management

The controller offers the possibility to store activity logs on the SD CARD or on a syslog server. This option can be activated from Hardware Manager on the Settings tab. We recommend using the 'Store on SD Card' option for debugging only.

SUT Licence Upgrades

Extra hardware features and software compatibility can be unlocked by purchasing upgrades or adding 30 day free software trials at https://store.nicolaudiegroup.com/sut

1. Click + Register a new Interface and download the SUT driver software. Follow the on-screen prompts.

2. Once registered, select your interface on the left. You can buy new features and software compatibility, change the device name or transfer the device to a new owner.

Any licence changes will be automatically synchronised the next time you connect your interface to most Nicolaudie Group software while connected to the internet. Currently installed licences can be checked using HardwareManager on the SUT screen.

Troubleshooting

The controller is not detected by the computer

- Be sure that the latest software version is installed from our website
- Connect by USB and open the Hardware Manager (found in the software directory). If it is detected here, try to update the firmware. If it is not detected, try the method below.

- Bootloader Mode
  Sometimes the firmware update may fail and the device may not be recognized by the computer. Starting the controller in 'Bootloader' mode forces to the controller to start at a lower level and in some cases allows the controller to be detected and the firmware to be written. To force a firmware update in Bootloader Mode:

  1. Power off your interface
  2. Start HardwareManager on your computer
  3. Activate Bootloader by holding down buttons 2 & 3 (under the screen) while connecting power. Instead of connecting power you can also press the reset button. If successful, the green, red and white LED will flash and your interface will appear in Hardware Manager with the suffix _BL.
  4. Update your firmware

The lights are not responding

- Check the DMX +, - and GND are connected correctly
- Check that the driver or lighting fixture is in DMX mode
- Be sure that the DMX address has been set correctly
- Check there are no more than 32 devices in the chain
- Check that the red DMX LED is on or flickering.
- Connect with the computer and open Hardware

Green, red and white LED flashing

The controller is in bootloader mode. This is a special 'startup mode' which is run before the main firmware loads. Try re-writing the firmware with the latest Hardware Manager available from the downloads section of our website.

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