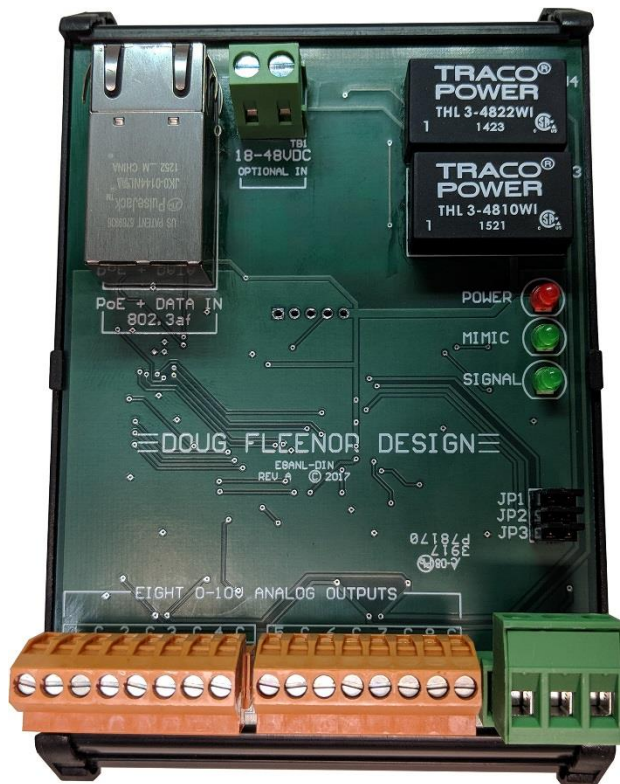# DOUG FLEENOR DESIGN

8 channel Ethernet to analog interface
Web Server Configuration Manual

models: E8ANL-DIN, E8ANL-DIN-JBOX, E8ANL-DIN-JBOX-PS

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Manual Revision 1
April 2019

Product Overview and Document Scope

The E8ANL-DIN is an Ethernet (sACN or ArtNet) interface with 8 analog (0-10V) outputs (each with its own common terminal) and a DMX512 output. Configuration is via a built-in webserver. The standard Ethernet connector (8P8C aka RJ-45) accepts PoE (power over Ethernet) or the user may supply power (18 to 48 VDC) on a two-position terminal block. DMX512 and analog connections are on pluggable terminal blocks. The device mounts on standard 35mm "top hat" DIN rail.

Specifications concerning power, inputs, outputs, and more are available in a separate data sheet.

Configuration Overview

Power is supplied to the E8ANL-DIN via 802.3af PoE (Power over Ethernet), or by an auxiliary 18-48 VDC power input made via direct wiring to a terminal. Once powered, setup begins with a physical connection to a network using the Ethernet RJ-45 connector. Once physically connected, appropriate IP addresses must be set in order to access the web pages and configuration options. The two methods for establishing this web connection are using Dynamic Host Configuration Protocol [DHCP] and Node Discovery, or Static IP addresses. Once connected and configured, the E8ANL-DIN stores the settings, which persist after removing power.

Installers may choose to bench configure these products (typically with Static IP) prior to installation, or place them into networks specified in a way where connection is possible after being physically connected into the system (typically with DHCP and Node Discovery on Windows 7 or higher). Mac and Linux users who require DHCP/Discovery configuration can give us a call at (805) 481-9599.

Ship Time IP Configuration

Unique IP addresses are assigned to each DFD Ethernet product at ship time. The IP Address and Subnet Mask are labeled on each unit. DHCP is also enabled at shipping time. When a new unconfigured E8ANL-DIN is connected to a network that does not have a DHCP server, the IP labeled on the unit is used.

For pages other than the status page, the default Username and Password are:

> **Username: admin**
>
> **Password: dmx512**

Connect using DHCP and Node Discovery

This procedure is valid for PCs using Windows 7 or newer. Mac and Linux users who require assistance can give us a call at (805)481-9599.

1. To begin setup, plug in the E8ANL-DIN and ensure that the red "POWER" LED illuminates.
2. Run a CAT5E (or higher) cable from the Ethernet RJ-45 connector to a router configured to serve DHCP (default for most 'home' routers).
3. Run another cable from the router to a Windows 7 (or newer) PC with an Ethernet card set to use DHCP (standard for most 'home' PCs).
4. Next, download Node Discovery from our webpage at www.dfd.com. To do so, navigate to the Node Discovery Page under the Ethernet Products heading. Node Discovery is a simple application that allows you to find Doug Fleenor Design Ethernet devices on your network. There is no need to install the program, just unzip the file and double-click on NodeDiscovery.exe. Type in your IP and subnet, click Discover, and then double-click on the interface you wish to configure. It opens the device's built-in webserver for configuration. Below is a screenshot that displays the output of a successful Node Discovery.
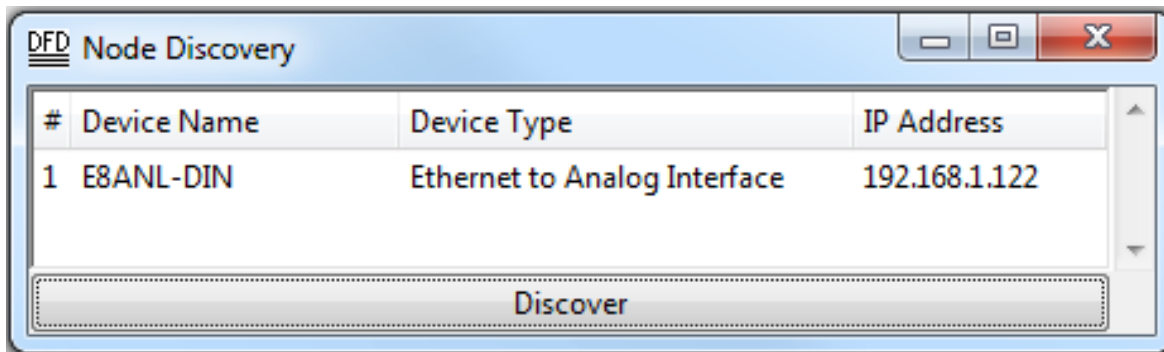
You will be brought to a page in the product's built-in webserver to configure the selected E8ANL-DIN. The username and password are as follows:
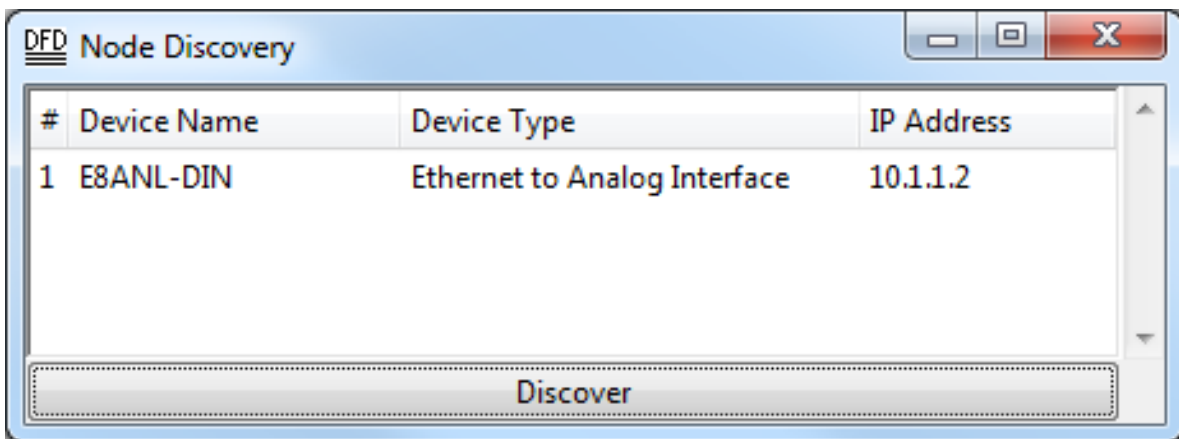
Username: admin

Password: dmx512

Once entered, you can edit your password in the Admin tab.

Connect using STATIC IP

1. To begin setup, plug in the E8ANL-DIN and ensure that the red "POWER" LED illuminates.
2. Run a CAT5E (or higher) cable from the Ethernet RJ-45 connector to the Ethernet port of your computer. The computer's Ethernet interface will need an IP Address set to 10.X.X.X and a Subnet Mask of 255.0.0.0. The X's can be any number between 1 and 255, but cannot be the same as the IP listed on the E8ANL-DIN.
3. Open any web browser and type the IP Address listed on the unit into the address bar. This opens the internal web server of the E8ANL-DIN. Additionally, Node Discovery may be used with a static IP. The above section describes how to download Node Discovery.

4. With the browser open, and the correct IP address in the address bar, you will be brought to a page in the product's built-in webserver to configure your E8ANL-DIN. The username and password are as follows:

Username: admin

Password: dmx512

Once entered, you can edit your password in the Admin tab.

Web Server

DOUG FLEENOR DESIGN | E8ANL

Ethernet To Analog: Status

Device Name:	E8ANL-DIN
Description:	Ethernet to Analog Interface
Firmware:	2.0

DHCP:	Enabled
IP Address:	192.168.1.122
Subnet Mask:	255.255.255.0
MAC Address:	d8:80:39:c1:88:df

sACN:	Enabled
Universe:	1
Start Slot:	1

Artnet:	Enabled
Universe:	0
Subnet:	0
Net:	0
Start Slot:	1

Navigation menu: Status, IP Address, sACN, ArtNet, Admin, Name, Test, Signal Loss

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The Status page displays all of the details of the current setup for the Ethernet to analog interface. This includes its name, description, current version of firmware, DHCP status, IP Address, Subnet Mask, MAC Address, sACN parameters, and ArtNet parameters. Adjustments to these settings can be made in the other pages.

Status
IP Address
sACN
ArtNet
Admin
Name
Test
Signal Loss

Interface Configuration

This page allows the configuration of the board's network settings.

CAUTION: Incorrect settings may cause the board to lose network connectivity. Recovery options will be provided on the next page.

Enter the new settings for the network interface below:

☑ Enable DHCP

Static IP: 10.10.10.10

Static Subnet Mask: 255.0.0.0

[Restart Interface]

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The IP Address page allows you to configure the E8ANL-DIN's network settings. From here, you can enable and disable DHCP, and change both the Static IP and Static Subnet Mask to best fit the needs for your system. Please note that the "Restart Interface" button must be clicked to apply the new settings.

sACN Lighting Protocol

This page allows the configuration of the board's network settings.

CAUTION: New settings will adjust what data streams this device listens to and may cause the analog outputs to toggle on or off.

Enter the new settings for the interface below:

Status
IP Address
sACN
ArtNet
Admin
Name
Test
Signal Loss

Enable sACN: ☑
Universe: 1   (1-63999)
Slot: 1   (1-512)

Apply Protocol Configuration

The sACN page allows you to configure the E8ANL-DIN using the sACN lighting protocol. From this page, you can enable and disable sACN, as well as configure its universe (from 1 to 63,999) and its starting slot (from 1 to 512). New settings are only applied after clicking the "Apply Protocol Configuration" button.

Artnet Lighting Protocol

This page allows the configuration of the board's network settings.

CAUTION: New settings will adjust what data streams this device listens to and may cause the interface outputs to toggle on or off.

Enter the new settings for the interface below:

Status

IP Address

sACN

ArtNet

Admin

Name

Test

Signal Loss

Enable ArtNet: ☑

Universe: 0 (0-15)

Subnet: 0 (0-15)

Net: 0 (0-127)

Slot: 1 (1-512)

Apply Protocol Configuration

The ArtNet page allows you to configure the E8ANL-DIN using the ArtNet lighting protocol. From this page, you can enable and disable ArtNet, as well as configure its universe (from 0 to 15), its subnet (from 0 to 15), its net (from 0 to 127), and its starting slot (from 1 to 512). New settings are only applied after clicking the "Apply Protocol Configuration" button.

Interface Configuration

Status
IP Address
sACN
ArtNet
Admin
Name
Test
Signal Loss

> **CAUTION:** When new password is successfully entered, there will be a redirect to the status page. The new password must be entered again to return to the configuration pages.

Enter the passwords below:

Old Password:	
New Password:	
Retype New Password:	
	Submit

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The Admin page allows you to change the password to access the Ethernet to analog interface. Note that your username is "admin", and that the original password is "dmx512". The new password is only applied after clicking the "Submit" button.

Interface Configuration

Status
IP Address
sACN
ArtNet
Admin
Name
Test
Signal Loss

Enter the names for the interface below:

Long Name:	Ethernet to Analog Interface
Short Name:	E8ANL-DIN
	Submit

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The Name page allows you to adjust the name of the E8ANL-DIN. It provides both a long name and a short name, and both are visible on the Status page. On the Status page, the short name is displayed as the device's name, and the long name is displayed as the device's description. New names are applied after clicking the "Submit" button.

Test and Debug

One channel turns on to full, and all other channels to zero.

- Status
- IP Address
- sACN
- ArtNet
- Admin
- Name
- Test
- Signal Loss

Test Analog Output:

- ○ Force One
- ○ Force Two
- ○ Force Three
- ○ Force Four
- ○ Force Five
- ○ Force Six
- ○ Force Seven
- ○ Force Eight
- ● Stop Test

Submit

The Test page allows you to test the analog output of the E8ANL-DIN. To check the outputs, you can force each one on individually from this page. When you select the "Force One" option and click "Submit", the green "SIGNAL" LED will blink on and off, and the selected output will be set to full (10 V). If the first output is selected, the "MIMIC 1" LED will also be illuminated. Selecting the "Stop Test" option and clicking "Submit" will stop the test and bring the E8ANL-DIN back to network control. This can help you troubleshoot both the E8ANL-DIN and your system's setup.

Signal Loss

Output value setting for all channels on signal loss.

This configuration is overridden by removing the 'Hold Last Look' Jumper JP1

Status
IP Address
sACN
ArtNet
Admin
Name
Test
Signal Loss

Set Signal Loss Mode:

○ Signal Loss to Zero
○ Signal Loss to Full

[Submit]

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The Signal Loss page is used to configure the interface's behavior upon loss of signal. You can configure the Signal Loss Mode to have all the outputs go to Zero or have all the outputs go to Full. In addition, you can overwrite this configuration setting by removing the 'Hold Last Look' Jumper (JP1).

Jumper Settings

The E8ANL-DIN has three jumpers, JP1 through JP3, which select different feature options. The factory default is to have all jumpers installed.

JP1 With JP1 installed, the E8ANL-DIN uses the signal loss configuration to determine its signal loss behavior. When removed, the 'Hold Last Look' function is selected. This overrides the Signal Loss setup option.

JP2 With JP2 installed, the E8ANL-DIN operates normally. When removed, access to the webserver is disabled and configuration changes are not possible. NODE Discovery will still discover the E8ANL-DIN on the network, but the webserver cannot be accessed.

JP3 With JP3 installed, the E8ANL-DIN operates normally. When removed at power up, this jumper resets all default settings to the factory configuration values.

Caution: Removing this jumper will cause you to lose your settings and will reset the E8ANL-DIN's IP Address to 10.10.10.10 and the Subnet Mask to 255.0.0.0.

Input

Both signal and power inputs are made via the same Ethernet RJ-45 connector. The interface is powered by 802.3af PoE (Power over Ethernet) as standard, but the E8ANL-DIN also has an auxiliary 18-48 VDC power input. This auxiliary power connection is made via direct wiring to a terminal. The signal input supports both sACN and ArtNet, and both can be used simultaneously. Levels from the protocols are piled onto each other in a highest-takes-precedence fashion.

Outputs

The E8ANL-DIN has eight separate analog outputs and one DMX512 output. The Ethernet input is isolated from the outputs, but the outputs are not isolated from each other. The eight analog outputs are made via direct wiring to two 8-position pluggable terminal blocks, with each terminal block containing four outputs and four commons. Each of the eight analog outputs carry a 10 mA rating. The DMX512 output is made via direct wiring to the 3-position pluggable Phoenix terminal block.

Limited Manufacturer's Warranty

Products manufactured by Doug Fleenor Design (DFD) carry a five-year parts and labor warranty against manufacturing defects. It is the customer's responsibility to return the product to DFD at the customer's expense. If covered under warranty, DFD will repair the unit and pay for return ground shipping. If a trip is necessary to the customer's site to solve a problem, the expenses of the trip must be paid by the customer.

This warranty covers manufacturing defects. It does not cover damage due to abuse, misuse, negligence, accident, alteration, or repair by other than by Doug Fleenor Design.

Most non-warranty repairs are made for a fixed $50.00 fee, plus shipping.

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