DOUG FLEENOR DESIGN

Entry Station Two Ethernet
Interface Configuration & Owner's Manual

model: ES2ETHER

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Manual Revision
August 2020

PRODUCT OVERVIEW

The Entry Station Two Ethernet (ES2ETHER) wall station plays back snapshots of sACN (E1.31) on four universes. The simple front interface allows the user to control 2,048 individual slots with the push of a button. Static snapshots from any sACN capable console record into the two presets. Snapshot play back may be used as an alternative to a more complex console, or operate along with that same console. Various lockout topologies make the ES2ETHER ideal in venues requiring untrained users to control fixtures typically accessed by a more complex console. The ES2ETHER supports Power over Ethernet (PoE – 802.3af) or a 24-48VDC power input. Station configuration takes place on a rear facing user interface. Multiple stations may act as remote stations with our Preset 10 Ethernet (model PRE10ETHER-A), and stations operating on different universes may operate on the same Local Area Network (LAN)

INSTALLATION

The ES2ETHER installs into a standard two gang electrical wall box. Minimum dimensions on the inside of the electrical box are 2.9"H × 1.4"D × 3.6"W. Data input and output takes place over the RJ45 jack. For best possible data rates, a cable capable of Fast Ethernet (100BASE-TX) is required. The cable must connect the ES2ETHER to an Ethernet LAN that contains the console and receiving devices.

Power may enter the unit using the Ethernet cable when a Power over Ethernet switch or injector are used. When utilizing PoE only one cable is required. Installations not utilizing PoE can use the Auxiliary 24-48VDC input.
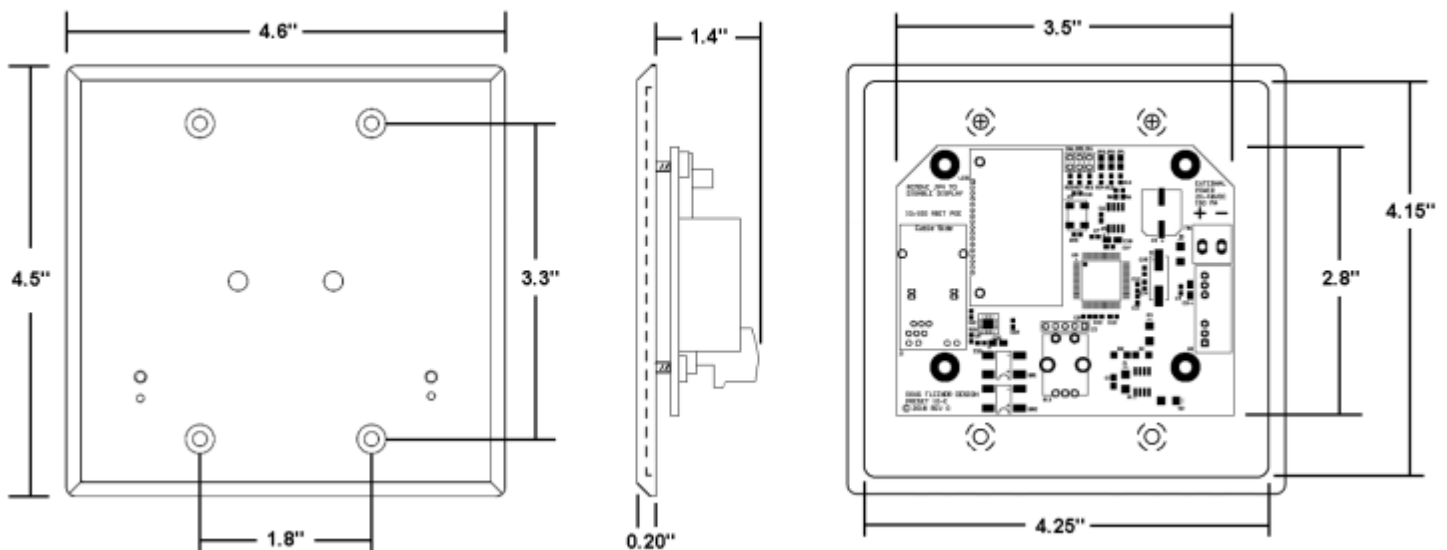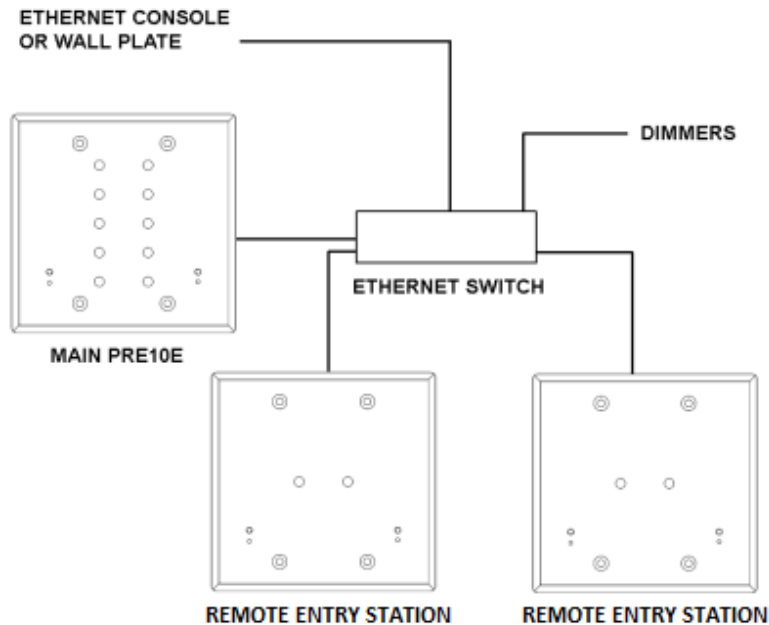
SYSTEM TOPOLOGY

Both Single Station and Multistation system designs are possible with the ES2ETHER. A simple system may consist of a single console, ES2ETHER, and receiving device.
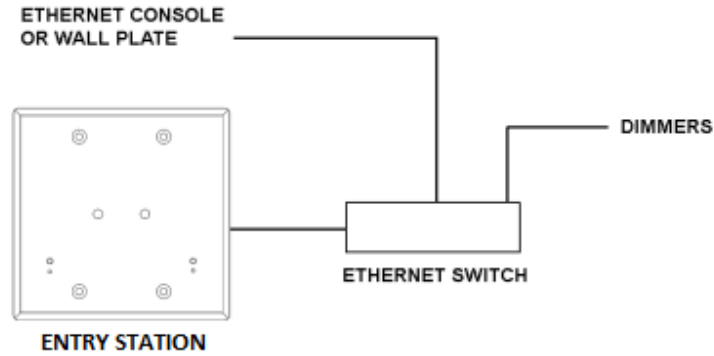
A more complex system may have both PRE10ETHER-A and ES2ETHER stations at multiple locations in a building.

Data transport between each sACN capable device takes place using standard Ethernet hardware that supports multicast traffic. The above diagrams utilize a single Ethernet switch for simplicity. Any network hardware constituting a properly configured LAN may replace the Ethernet Switch blocks above.
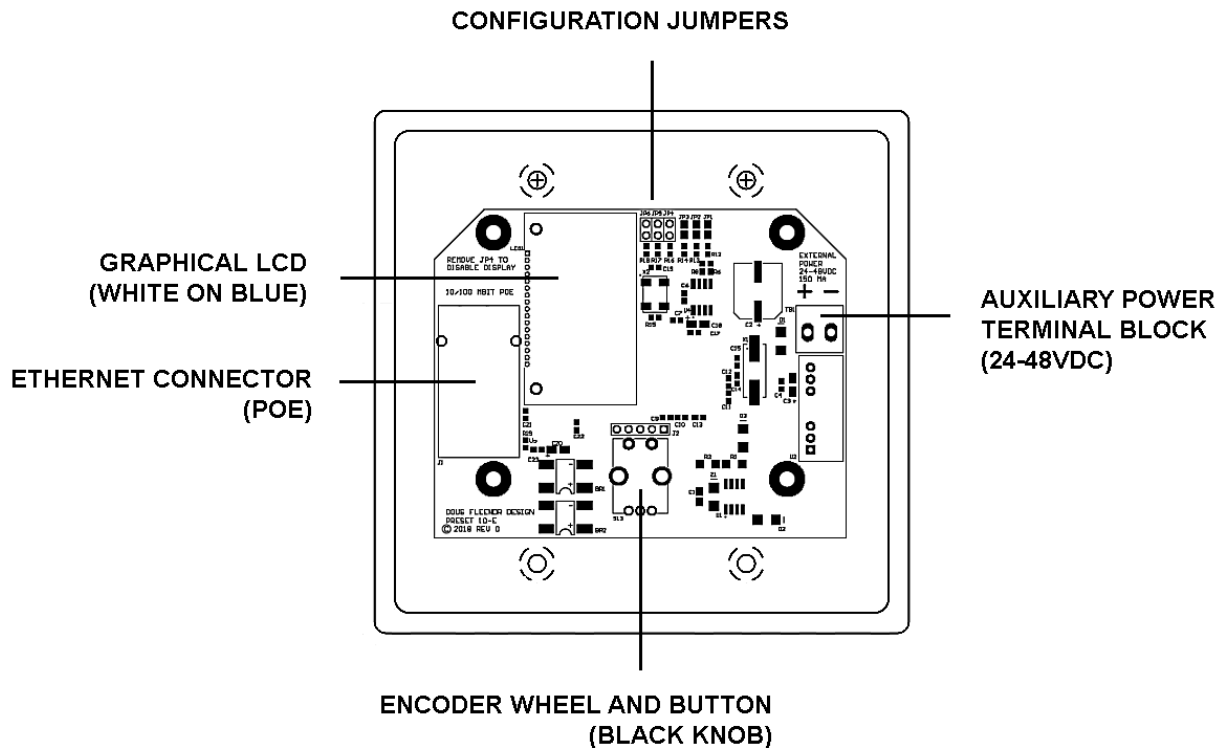
Note:

- Ethernet switches intending to filter multicast traffic will require IGMPv3 for ES2ETHER compatibility.

REAR INTERFACE

The ES2ETHER has a set of rear mounted controls that are accessed during initial commissioning of the wall station. The rear interface changes network settings, lockouts and button behavior. Once setup is complete, this interface remains facing into the two gang wall box and is not accessed by users changing presets on the front interface.

The rear interface has a monochrome graphical Liquid Crystal Display (LCD), and a rotary encoder with a button. The LCD displays the configuration pages which are edited by turning the encoder, and pressing the button. The configuration page changes when the page change symbol is highlighted [< >] and the encoder wheel is turned. Depressing the encoder shaft acts as a button to toggle between the editable fields on the screen. A highlight appears in the background of the editable field, at which point the wheel changes the highlighted value. In addition to the LCD and encoder based configurations, three jumpers select settings that are not accessed in the LCD menus.

CONFIGURATION JUMPERS

GRAPHICAL LCD
(WHITE ON BLUE)

ETHERNET CONNECTOR
(POE)

AUXILIARY POWER
TERMINAL BLOCK
(24-48VDC)

ENCODER WHEEL AND BUTTON
(BLACK KNOB)

Using the LCD, encoder, and jumpers, an installer can commission the ES2ETHER. Initial commissioning consists of setting the following configuration options:

DHCP

Turns Dynamic Host Configuration Protocol (DHCP) On or Off. DHCP servers, such as a router, will issue an IPv4 address to the ES2ETHER when connected on the same Local Area Network. With a DHCP address issued, the ES2ETHER will not be able to alter its own IPv4 address.

IPv4

The Internet Protocol Version Four (IPv4) address is edited here when DHCP is off.

SUBNET MASK

IPv4 Subnet mask bits are set here when DHCP is off.

UNIVERSE

Available sACN universes range from 1 to 63,999. The default starting universe for the ES2ETHER is universe 1, which can be altered in this menu. The selected starting universe is the first of four universes. For example, a starting universe of 6 gives the ES2ETHER control of universes 6, 7, 8 and 9. Since each universe contains 512 slots, this gives the ES2ETHER control of up to 2,048 slots.

PRIORITY

sACN uses a priority value to instruct receiving devices on which stream takes precedence. Receivers may merge equal priority streams if supported. This field becomes useful in conjunction with no lockout mode to allow for 'automatic' switch over when a console powers down. Priority values range from 1 to 200, with 1 being the lowest priority and 200 being the highest priority. The default priority for the ES2ETHER is 100.

LOCKOUT

Two options provided here are Standard, and No Lockout. When the ES2ETHER sees incoming streams on any incoming universe within its addressed universe range, in Standard lockout mode, it stops transmitting on all four universes. In No Lockout mode, transmission does not stop, and priority handling in the fixtures determines which transmitter produces light levels. Default lockout behavior is Standard.

MULTISTATION

SINGLE: Used when only one ES2ETHER is in the system.

MAIN: Used when multiple ES2ETHER's are in one system. A main station transmits the sACN data, holds stored looks and exchanges configuration packets with remote stations. Only the main station may record presets and set times.

REMOTE: When more than one station is on a universe, one must be set as a main, and all others set as remote stations with the same universe number. The remote stations exchange polling information with the main station, allowing button presses at multiple entrances to track through the whole system. The ES2ETHER can act as a remote station for a PRE10ETHER-A main station, with each of the two presets on the ES2ETHER configured to trigger a certain preset on the main PRE10ETHER-A. Remote station mode is the default Multistation setting for the ES2ETHER.

DATA

Displays the value of the first slot of the first universe being received by the ES2ETHER. The Data page does not display data transmitted by the ES2ETHER. This is provided as a system diagnostic and troubleshooting aide.

FADE TIME

A crossfade is a fade where the new preset levels entirely replace the previous levels. The ES2ETHER allows you to alter the fade time for the two presets on this screen. Crossfade times default to two seconds.

Note:

- Crossfade times range from a minimum of 0 seconds to a maximum of 999 seconds (16 minutes and 39 seconds).

- The fade time entered will be the same for both presets.

ON PRESET

The value entered on this screen determines which preset the ON button corresponds to on a compatible Preset Ten Ethernet (PRE10ETHER-A) while acting as a remote station.

OFF PRESET

The value entered on this screen determines which preset the OFF button corresponds to on a compatible Preset Ten Ethernet (PRE10ETHER-A) while acting as a remote station.

JUMPER SETTINGS

The remaining configuration options are not accessed using the LCD and encoder wheel. Instead these options are accessed by removing or applying a jumper.

JP4 - Rear Lockout – Removal of the JP4 Jumper locks out the rear encoder input and display output. The LCD image and backlight turn off. Reapplication of the JP4 Jumper re-enables the LCD and encoder.

JP5 - Force Defaults – All configuration options accessed through the LCD and encoder are set to default by the following process:

1. Power Down ES2ETHER
2. Remove *JP5*
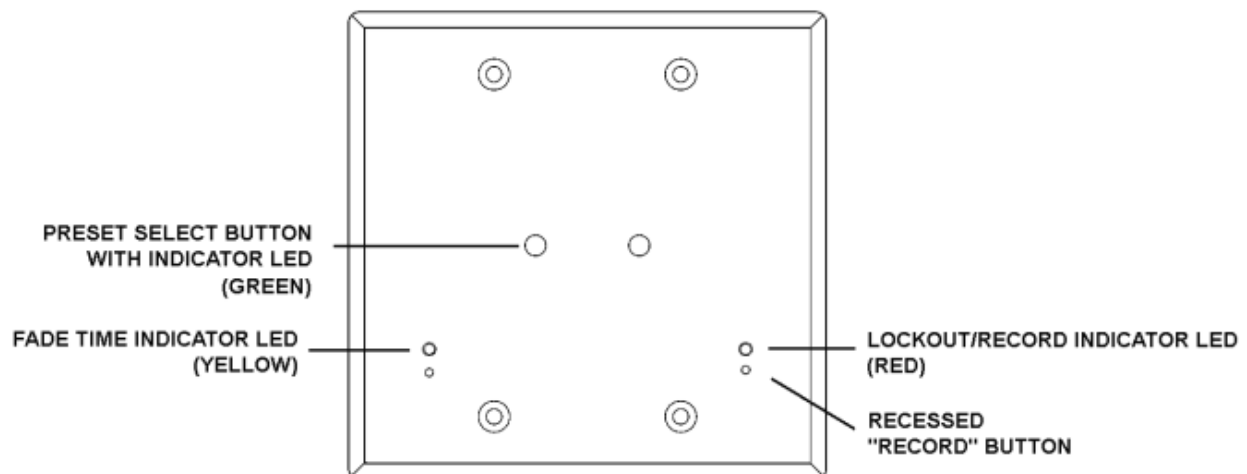3. Power up ES2ETHER
4. Wait 5 seconds
5. Replace *JP5*

For a listing of each default setting, see the table below.

Option	Default Setting
DHCP	True
IPv4	10.10.10.10
Subnet Mask	255.0.0.0
Universe	1
Priority	100
Lockout	Standard
Multistation	Remote
Fade Time	2
On Preset	1
Off Preset	10

JP6 - Record Lockout – With *JP6* removed, the recessed record button on the front panel will no longer allow the recording of presets. With *JP6* installed, the recording of presets take place as described in the front interface section.

FRONT INTERFACE

The ES2ETHER has a front interface where the majority of user interaction takes place. The front interface has buttons and LEDs involving playback and recording. Using the front interface, a user can select an active preset or determine a lockout condition. The recessed *RECORD* button requires a small blunt object, such as a paper clip.

PRESET SELECT BUTTON WITH INDICATOR LED (GREEN)

FADE TIME INDICATOR LED (YELLOW)

LOCKOUT/RECORD INDICATOR LED (RED)

RECESSED "RECORD" BUTTON

PLAYBACK OF PRESETS

The ES2ETHER transmits presets when not locked out. When the ES2ETHER outputs a preset, an associated green indicator LED will illuminate the button cap. In *STANDARD* lockout mode, the ES2ETHER will darken all active preset indicators, and show only a red indicator LED. In *NO LOCKOUT* mode, the playback happens all the time, and the red LED indicates only the receipt of data. When shipped, the ES2ETHER will have its lockout setting as *STANDARD*. Whenever one or more of the indicator LEDs are on, a user can expect playback.

The station will only allow one active preset at a time. Pressing a non-illuminated button will begin a crossfade from the currently active preset to the newly activated preset. The time taken to fade from the current preset to the new preset is taken from the value stored in the FADE TIME screen on the rear user interface. The LED indicator for the new preset becomes illuminated, and the LED indictor for the former preset becomes dark. Once the fade has completed, it will remain in that preset (static) until another preset is selected.

Whenever a fade takes place, the yellow *FADE TIME INDICATOR* led will illuminate.

Note:

- If a preset is active at the time power is lost, the ES2ETHER will return to that last active preset when power is restored. The formerly active preset will fade in completely after eight seconds.

RECORDING PRESETS

In order to record preset levels, the ES2ETHER must be connected to an sACN source. When less than 2,048 slot levels are received, a level of 0% will be stored for all slots above those received.

Note:

- For predictable results, avoid recording when the sACN levels are changing.

- Recording of presets must be done from a station configured as MAIN or SINGLE.

1. Using the primary sACN source, set a "look" to be recorded.

2. Using a small blunt object (e.g. paper clip), momentarily depress the RECORD MODE recessed button located on the bottom most right of the ES2ETHER. The red LED above the recessed button will begin to flash. If you decide after depressing the RECORD MODE button that you do not wish to make an edit, depress the RECORD MODE button a second time. The red LED will no longer flash and no changes will have been made.

3. Momentarily depress the PRESET SELECT button of the preset number you wish to record.

4. Upon releasing the PRESET SELECT button, the red LED will no longer flash. This indicates recording is complete.

Repeat steps 1 through 4 until you have recorded as many presets as required, up to two total.

PRESET OFF – SPECIAL FUNCTION

When the levels stored in the OFF preset are **all zeros**, a special function is enabled. When the OFF preset is selected and the crossfade has completed, the ES2ETHER will stop sending sACN. By ending sACN transmission, many moving lights and dimming systems will enter their standby mode. This feature can be disabled by recording any non-zero level on any of the 2,048 channels into the OFF preset.

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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