Pathway® Connectivity Solutions

CATALOG NUMBER **PWINF DIN NFP**

DATE

PROJECT

DMX INTERFACE
NETWORK FADE PROCESSOR ASCII TO DMX512

Model shown: **PWINF DIN NFP**

WARRANTY

3-year limited warranty. Complete warranty terms located at: https://www.acuitybrands.com/support/warranty

NOTE

Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

OVERVIEW

Pathway DMX Interfaces provide a flexible way of creating custom solutions to DMX control challenges.

The Network Fade Processor receives ASCII text commands from Crestron or other control systems, and converts them to DMX512, as well as network protocols such as Pathport Protocol, Art-Net and E1.31 sACN.

The Network Fade Processor calculates smooth fades as necessary, removing all computational overhead from the controller while ensuring the proper DMX refresh is maintained.

Compact and DIN-rail mountable, the Pathway Network Fade Processor consolidates ASCII string conversion and DMX output into a single device.

FEATURES

- Convert ASCII text commands to DMX512
- Outputs two universes (1024 slots) of DMX512
- Simultaneously, transmit levels to Network DMX protocols
- Simple command structure incorporates slot lists, ranges and concatenation
- New Universe release/port shutdown command
- Commands may be sent individually or as a consolidated text file
- Compatible with any controller capable of sending ASCII text strings via UDP unicast (Crestron and most automation controllers)
- Handles all fade algorithms and maintains DMX refresh
- 1024 simultaneous fades possible
- Fades are linear and calculated in 16-bit
- Fade times from 20ms to 49days
- Fades are always "Last Action"; slot levels are maintained and will fade from their current value to new commanded value
- Multiple Network Fade Processors may reside on the same network with or without additional Pathport gateways
- Indicators LEDs for Power, Ethernet link activity, and Identify
- Operates on 802.3af Power-over-Ethernet (PoE) or 18-48VDC auxiliary input

ORDERING INFORMATION

PWINF				**EXAMPLE: PWINF DIN NFP**
PWINF		**DIN**		**NFP**
Series		**Form Factor**		**Control Type**
PWINF	Pathway DMX Interface	**DIN**	DIN-mount	**NFP** 2 Universe Network Fade Processor (4.5")

Accessories

PWPWR DIN TERM 100W 48VDC	Power Supply, Desktop, Compression Fit Terminal, 100 Watts, 48 Volts DC	**PWENC MED HOR**	DIN System Enclosure, Medium 10" x 23" x 4.5" , Horizontal Rails
PWENC SHELF HOR	DIN System Enclosure, 2-RU Shelf unit with 2x16.5", Horizontal Rails	**PWENC LRG VER**	DIN System Enclosure, Large 18.5" x 31.5" x 6.25", Vertical Rails
PWENC SML VER	DIN System Enclosure, Small 10" x 13" x 4.5", Vertical Rails	**PWCON SPARE IDC5 Q4**	Connector, Spare, 5-Pin Insulation Displacement Contact Connector, (Qty 4)
PWENC MED VER	DIN System Enclosure, Medium 10" x 23" x 4.5" , Vertical Rails	**PWCON SPARE CSC5 Q4**	Connector, Spare, 5-Pin Compression Screw Connector, (Qty 4)
PWENC SML HOR	DIN System Enclosure, Small 10" x 13" x 4.5", Horizontal Rails		

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SPECIFICATIONS

Electrical

Input Ratings
PoE Class 1 device
18-48VDC auxiliary power input
4W maximum power consumption

Isolation & Fault Protection
60V fault protection on DMX ports

Mechanical

Dimensions
4.5" W x 4" H x 1.85" D (114mm W x 103mm H x 47mm D)

Weight
0.4 lbs (0.18 kg)

Mounting Interface
35mm x 7.5mm DIN rail

Environmental

Operating Temperature
14°F to 113°F (-10°C to 45°C)

Relative Humidity
5-95%, non-condensing

General

Compliance
ANSI E1.11 DMX512-A R2013
ANSI E1.31 sACN - Streaming ACN, Art-Net, Strand ShowNet, Pathway ssACN
IEEE 802.3af Power-over-Ethernet
Class 2 Low Voltage
California Title 1.81.26, Security of Connected Devices

PART NUMBER CROSS-REFERENCE

PREVIOUS	NEW	
Part Number	**Catalog Number**	**Description**
6829	PWINF DIN NFP	DMX Interface, DIN-mount, 2 Universe Network Fade Processor (4.5")

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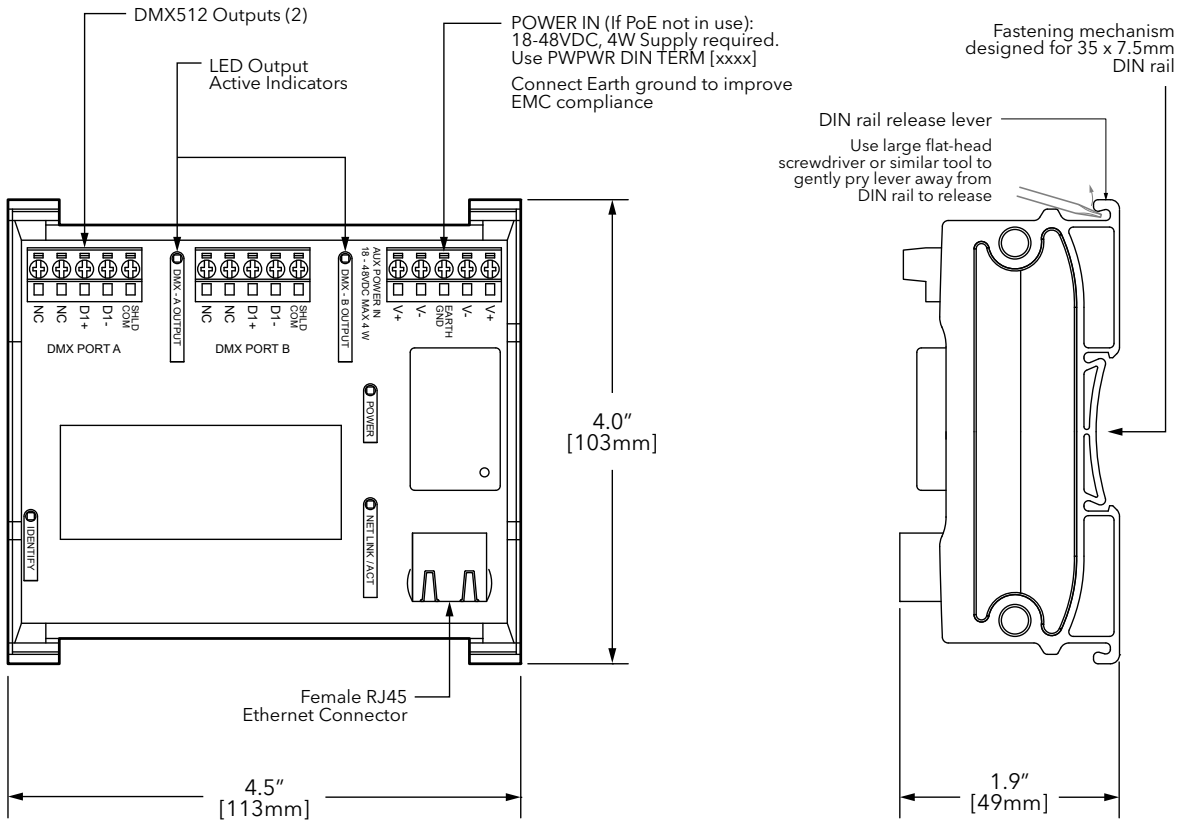
WIRING

DMX512 / RDM PINOUT		
Purpose	**XLR / Terminal Block Pin #**	**RJ45 PIN # and Wire Color**
Shield / Common	1	7 - White / Brown
Data - (complement)	2	2 - Orange
Data + (true)	3	1 - White / Orange
Not Used	4	6 - Green
Not Used	5	3 - White / Green
Not Used - Do Not Connect	N/A	4 - Blue
Not Used - Do Not Connect	N/A	5 - White / Blue
Not Used - Do Not Connect	N/A	8 - Brown

DIMENSIONS



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DEVICE MODE OF OPERATION

- The NFP processes a proprietary command syntax (specified below) and initiates timed fades directly on DMX slots (and in turn Network DMX Slots)
- **Commands** are sent to the NFP in standard UDP datagrams (AKA "packets").
- Packets containing commands are sent to the NFP on **UDP port 3793**
- The NFP will accept a packet containing up to 1400 characters of command data.
- Packets can contain multiple commands.
- If multiple commands in a single packet specify the same slot or slots, only the last command received for that slot will be executed.
- Wait times between commands are not possible

COMMAND SYNTAX

The automation controller sends a text string via UDP to port 3793 of the Network Fade Processor. Strings may be consolidated into a single text file (2kB maximum) prior to sending. The Network Fade Processor calculates the fade described by the command generates corresponding DMX512 slot and Ethernet protocol data. The levels are transmitted from the specified DMX port of the device, and are also transmitted onto the Ethernet network.

Use Pathscape to assign a specific network DMX transmit universe.

Command Syntax

Commands consist of (in order):

a **Port Letter**,
a **Slot Specification**,
a **Slot Value**,
an [optional] **Fade Time**,
and a **Terminator**.

A **Port Letter** can be "A" or "B", matching the port designator on the device.

A **Slot Specification** can be:

A Comma, or "+" separated list of Slot Numbers from 1 to 512:

E.g.: "**1,2,3,4,5**": This denotes Slots 1 thru 5, inclusive

E.g.: "**1+2+3+4+5**": This also denotes Slots 1 thru 5, inclusive

A Range Specification using "-" (dash or hyphen) as the "Thru" token:

E.g.: "**1-5**": This denotes Slots 1 thru 5, inclusive

Multiple Comma-Separated Lists of Slot Numbers or Range Specifications separated with "+" or "-". Comma and "+" are interchangeable:

E.g.: "**1,2,3,4,5,18-30**": This denotes Slots 1 thru 5, AND slots 18 thru 30

A **Slot Value** is:

The "*" (asterisk) character, followed by a single decimal number, specifying the raw 8-bit DMX value, between 0 and 255.

E.g.: "***127**": This denotes a value of 127, or 50%

[optional] **Fade Time** is:

The Forward Slash, or "/" character, followed by a decimal number specifying the number of milliseconds, between 1 and 4.26 million.

E.g.: "/5000": This specifies a time of 5000 milliseconds, or 5 seconds.

Note: when a command is issued without a time specification, the slots will SNAP to the specified level instantly. In other words, the "default" fade time is 0 mS.

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COMMAND SYNTAX

A **Terminator** is:

A "newline" (hex 0x0A) or "carriage return" (hex 0x0D), or both.

COMMAND EXAMPLES

To test on Linux or macOS, you can type "bash" at a command line and echo directly out a port.

For example:

```
bash-3.2$ echo 'A1-512*127/1000' > /dev/udp/10.0.81.158/3793
```

Or put all the commands into a text file, and then:

```
cat commands.txt > /dev/udp/10.0.80.148/3793
```

Command Examples

Note: ("<cr>" denotes the non-printable "carriage return" character, which can be replaced with any valid Terminator token [0x0A or 0X0D, or both])

Example: Fade slots 1,2, and 3 on Port A to 127 (50%) over 5 Seconds:

A1,2,3*127/5000<cr>
A1+2+3*127/5000<cr>
A1-3*127/5000<cr>

Example: Fade all slots on Port B to 0 in 0.5 seconds:

B1-512*0/500<cr>

Example: Fade a slot list on both ports at once, with Port A fading in 15 seconds and Port B fading in 20 seconds:

A20,21,40,41,50,51*127/15000<cr>
B100,101,102,103,201,202,203*0/20000<cr>

PORT RELEASE

If necessary, it is also possible to "release" all control on a Port. This will stop all DMX and network communication for that Port, and will cleanly turn off that port's DMX. It will not fade the DMX to zero automatically before turning the port off.

A **Port Release** command consists of:

a **Port Letter,**
the **Port Release** character, "." (period),
and a **Terminator**.

E.g.: To release Port A:

A.<cr>

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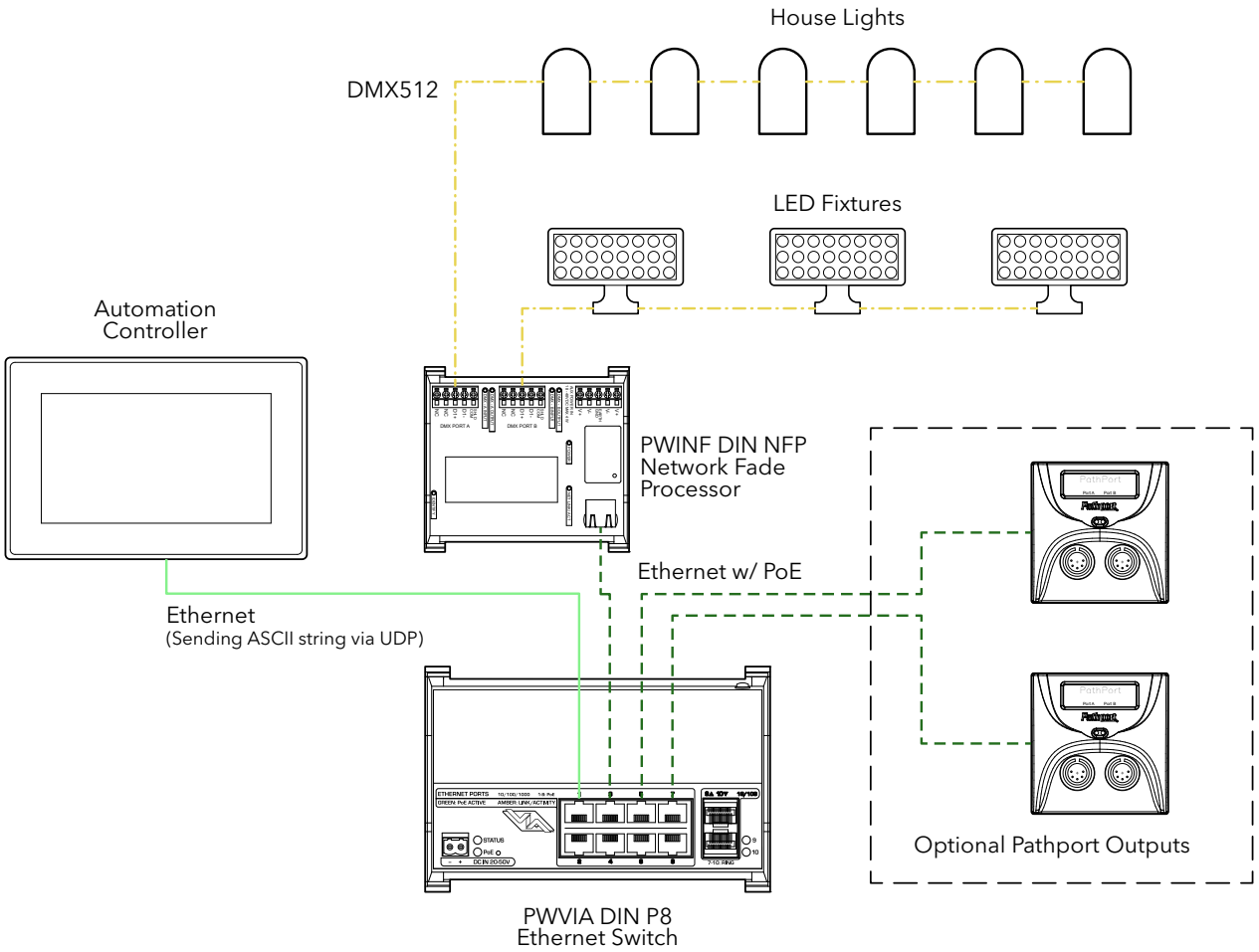
APPLICATION RISER



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