Pathway Connectivity Solutions

Typical Application

CAUTION! ⚠

eDIN modules are designed to work on voltages from 9-30 volts AC or DC only. DIN rail power supplies are readily available from Pathway and most electrical suppliers.

Each eDIN opto consumes 5 watts of power.

DMX Termination

If only one eDIN Opto-Splitter is used, and nothing is connected to the DMX THRU connector, the termination switch must be set in the ON position to terminate the incoming DMX signal from the console. If several eDIN optos are connected together using the DMX THRU connector on each unit, only the last eDIN opto in the chain is terminated, all the others are not terminated (switch in the OFF position).

DMX receiving devices such as dimmers or scrollers are generally provided with a termination switch, termination jumper or other means of connecting the required termination resistance across the DMX line. Always make sure that the last receiving device connected to any output line is properly terminated.

Indicators

The **POWER** LED on the face of your eDIN Opto-Splitter will illuminate when power is connected to the unit. There is no on/off switch.

The **DATA IN** LED will illuminate and flicker rapidly to indicate that DMX data is being received.

Each DMX output has an associated LED to show that the output is operational and DMX data is being transmitted.

Specifications

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Required Power Supply:	9-30V AC/DC, 5W
Connections:	Two-part screw terminals
Isolation:	2500V Opto-isolation
Protection:	Up to 250VAC/DC on all port pins
Protocols:	DMX512 , DMX512-A, or any EIA422 /485 based protocol
Size:	4.64 x 4.5 x 1.5" (118 x 113 x 38 mm)
Unit Weight:	0.5 lbs. (0.25 kg)

eDIN Model Descriptions

1002	eDIN 4-Way Opto Splitter
1001	eDIN 15W power supply
1102-30	Additional 12" (30cm) DIN mounting rail
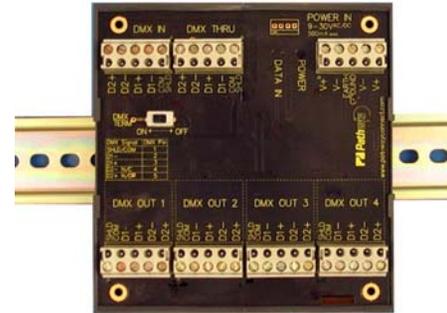
An essential component of any DMX512 distribution system, the eDIN Opto-Splitter permits star wiring installations while isolating and protecting connected equipment from harmful electrical faults. Pathway eDIN optos feature self-healing protection devices on all ports to prevent internal damage when severe faults of up to 250V are accidentally applied to the connected DMX cabling.

Operational Philosophy

To ensure trouble free operation, DMX512 standards require that DMX devices be installed in a daisy chain, with no tees, wyes or stars in the DMX wiring. However, site conditions may make star wiring desirable or even mandatory. A Pathway eDIN Opto-Splitter permits star wiring by making each branch of the star function electrically as its own entity, unaffected by the other branches of the star. Additionally, opto-isolation circuitry prevents ground loops or accidental damage to control consoles from fault voltages on DMX lines.

DMX Basics

- All wiring must be in a continuous run, daisy-chained, no "Tees" are permitted
- "Stars" are permitted only in conjunction with a repeater
- Cable shield may be earth-grounded at one end only: at the control console output and the eDIN opto outputs
- Maximum length of one cable segment is 1,800 ft. (550m).
- Receiving devices have male connectors, transmitters have female
- The last DMX device on the line must be terminated with a termination switch or resistor with a value of 100 to 120 ohms between pins 2 and 3.
- 5 pin XLR type DMX connectors are standard:
  - Pin 1: *Common*
  - Pin 2: *Data (-)*
  - Pin 3: *Data (+)*
  - Pin 4: *Optional Data (-)*
  - Pin 5: *Optional Data (+)*
- 3 pin XLR type connectors are a non-standard alternative:
  - Pin 1: *Common*
  - Pin 2: *Data (-)*
  - Pin 3: *Data (+)*
- Wire must be Belden 9842 (120Ω), 9829 (100Ω), ISO/IEC 11801 (Cat5) or equivalent
- A maximum of 32 DMX receiving devices can be present on a single DMX line

DMX512-A Compliance

This product complies with the DMX512-A standard, under the non-compatible connector (NCC) provision.

All ports are DMX512-A protected to 250V.

Location

eDIN optos are designed for installation in an application appropriate NEMA enclosure.

DIN Rail Mounting

The eDIN Opto-Splitter is designed to be mounted on a section of 35mm DIN rail secured to the inside of an appropriate enclosure. The DIN rail included with the eDIN opto can be used if only one eDIN opto is being used. If several eDIN devices are being mounted, you can use a longer section of 35mm DIN rail, readily available from Pathway as well as most electrical suppliers.

eDIN modules have no mounting restrictions with regards to positioning within an enclosure. Modules can be mounted side-by-side in a continuous row or spaced out. Clearances between the modules and the side of the enclosure are similarly strictly a matter of available space and personal preference. It's up to you.

Attach either your own or the enclosed section of 35 mm DIN rail to the inside of your enclosure. Secure the eDIN module(s) by first engaging the top of the eDIN module on the DIN rail. Then, while pressing both of the release tabs on the underside of the module, press the bottom of the module into place. When properly engaged, the module should clearly 'snap' into place. Check to ensure that the module as installed is straight on the rail and the front of the module should be parallel with the back of the panel. If not squeeze the release tabs hard while pulling up on the bottom of the module. Once the module is free, repeat the installation process until the module is correctly and securely installed.

Alternate Mounting

If you do not wish to take advantage of the DIN rail mounting system, the eDIN module can be mounted in a more conventional manner by installing it without the plastic DIN case. To remove the plastic case, simply pry the right (or left) end cap off of the case. You may have to work the end back and forth to get it apart. Once the end cap is removed, the circuit board should slide out.

Use four 0.5" standoffs mounted on 4 x 3.75" centers to install the circuit board in your enclosure. Make sure that the components on the underside of the circuit board do not come in contact with your panel.

Connection Wire

Be sure to use the appropriate wire for all connections.
DMX Connections: Belden 9829, 9842, Cat5 or equivalent.
Power Connections: Insulated #18-16 AWG wire, stranded or solid.

DMX Connections

Typically, Pathway DMX Opto-Splitters are used in the following configuration:

- **DMX IN** is connected to the control console DMX output

- **DMX OUTs** are connected to the remote DMX devices or receptacles for the equipment receiving the console signal. These may be dimmers, scrollers or moving lights, for example.

- **DMX THRU** passes the console signal to additional eDIN DMX opto-splitters or other similar devices, and would in turn be connected to DMX IN on the next unit in line.

WARNING!

All DMX input/output ports must only be connected to low-voltage data lines. Do not connect high voltage sources to these connectors.

Recommended Wiring Practice

Keep all DMX cabling away from high voltage/power cables to maintain data integrity. Wire must be Belden 9842 (120Ω), 9829 (100Ω), ISO/IEC 11801 (Cat5) or equivalent.

Power Connections

eDIN modules require 9-30 volts, AC or DC. Each eDIN Opto-Splitter consumes 5 watts of power, so size your power supply accordingly.

With the external power supply turned off, connect the power leads to one pair of V+ and V- terminals. Polarity should be observed if a DC supply is used.

If additional DIN modules are powered from the same supply, the power may be daisy-chained using the second pair of V+ and V- terminals as a 'thru' connection.