

# eDIN Model 1009 • DMX/RDM Splitter Manual

## OVERVIEW

Pathway eDIN DMX/RDM Splitters support the bi-directional communications necessary for E1.20 Remote Device Management in DMX512 installations requiring star-wiring. Full opto-isolation between all ports adds maximum protection against common mode voltages or ground faults for connected equipment.

## CONNECTIONS

The eDIN DMX/RDM Splitter features terminal strips that can be removed from the card to facilitate easy wiring installation or replacement. Make the following connections, **WITH THE POWER TURNED OFF**, and observe ESD precautions by ensuring the installer is properly grounded before handling the module.

### POWER

The DMX/RDM Splitter is designed to run on a range of voltages from 9-30 volts DC. Each DMX/RDM Splitter module requires 6 watts. Observe the correct polarity when connecting to V+ and V-. A second set of terminals are provided as a DC power-through connection to other eDIN modules. The EARTH GND terminal must be connected to the enclosure's chassis or electrical ground terminal to ensure EMC compliance.

### DMX

DMX connections consist of a shield and a data pair. An optional second auxiliary data pair is also occasionally employed. DMX IN usually comes from a control console, Pathport® node, architectural controller or opto-splitter. DMX THRU provides a means to daisy-chain DMX to other eDIN modules.

Connect DATA+ and DATA- to D1+ and D1- on the DMX IN terminal. Connect the cable shield or common to the SHLD COM terminal. Observe the same polarity convention throughout the system while connecting the four outputs.

Connect wires for DATA2+ and DATA2- to D2+ and D2-, if desired. It is not necessary to connect these wires for DMX or RDM to function.



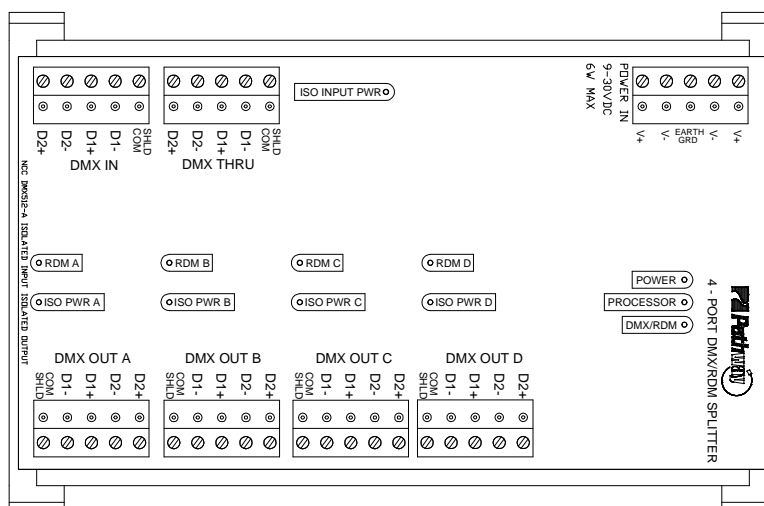
## STATUS INDICATORS

- POWER IN** *Blue.* Glowing steadily indicates power supply OK; off indicates no power.
- PROCESSOR** *Green.* Glowing steadily indicates processor is OK; off when POWER IN is lit indicates processor failure.
- DMX INPUT** *Amber.* Glowing steadily indicates data signal received; off indicates no signal present.
- ISO POWER IN** *Red.* Internally isolated power supply for input processing working correctly. Off means no power.
- ISO POWER A/B/C/D** *Red.* Internally isolated power supply to that output port is working correctly. Off means no power to that port.
- RDM A/B/C/D** *Amber.* Flickering indicates presence of RDM data packets. Off indicates no RDM activity on the network.

## RDM CONTROLLER

A compliant RDM controller must be used to get and set RDM information and commands. The eDIN DMX/RDM Splitter does not provide controller functions, but simply allows RDM messages within a star-wiring network.

A Pathport node and suitable software can be used to provide RDM controller functions.



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## DMX TERMINATION

The eDIN DMX/RDM Splitter is internally terminated and does not require any further termination at the module.

However, the last DMX device on each output leg must still be properly terminated in accordance with the E1.11 DMX512-A standard, to ensure correct device operation.

## DMX THRU CONNECTOR

The DMX Thru connector is an active pass through and fully supports RDM. In effect, it is a fifth output port. If power is lost to the module, the DMX Thru connector will no longer function.

Due to timing restrictions in the RDM standard, no more than seven (7) eDIN DMX/RDM Splitters may be daisy-chained together in one run.

## E1.20 REMOTE DEVICE MANAGEMENT

ANSI E1.20 Remote Device Management (RDM) is an open standard data protocol that provides DMX512-A networks with the option of bi-directional communications (aka 'talkback'). By using half-duplex data communications, RDM operates over the same wire pair (pins 2 and 3) as DMX, ensuring backwards compatibility with all DMX installations.

## SYSTEM TOPOLOGY

System layout is critical for successful use of the RDM standard. Wire type and installation methodology must be correct as the timing restrictions required by RDM are much stricter than for DMX.

RDM devices are classified as 'controllers', 'responders' or 'in-line' devices. Only one controller may be active on a given network. When the controller issues a command, it listens for a response within a prescribed time. During this period, 'in-line' devices like the eDIN DMX/RDM Splitter prepare to pass data back to the controller.

Due to timing constraints imposed to ensure integrity of the DMX signal, a maximum of seven in-line devices are allowed between the controller and an output with a responder attached.

The eDIN DMX/RDM Splitter is considered an 'in-line' device. The signal path may never include more than seven eDIN DMW/RDM Splitters. Anything greater will prevent devices further downstream from being able to respond.

**WARNING:** Do not install other RDM responders between the controller and the #1009 DMX/RDM Splitter, or between the Thru connector on one Splitter and the DMX IN on the next.

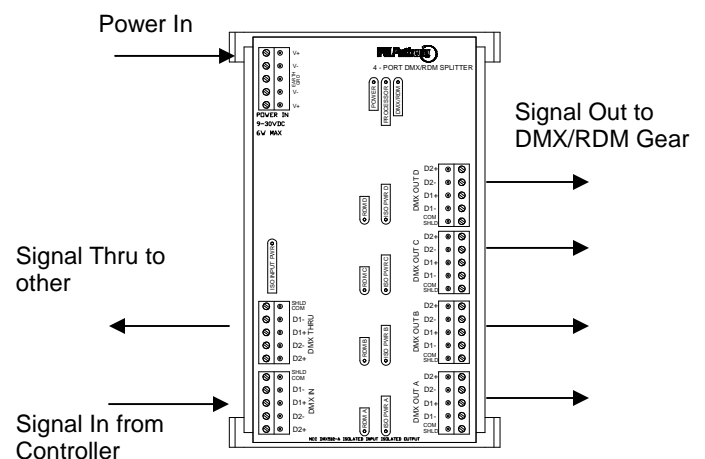
## DMX WIRING PIN OUT REFERENCE

### Standard RS422/485 Conductor Pin Outs (ie Belden, Proplex, etc)

Terminal Pin	Wire Color	Manufacturer Specific
Pin 1	Shield	
Pin 2	Data – (pair 1 complement)	
Pin 3	Data + (pair 1 true)	
Pin 4	Optional Data – (pair 2 complement)	
Pin 5	Optional Data + (pair 2 true)	

### Cat5, Cat5e and Cat6 Wiring Pin Outs

Wire Color and #	Function	Pin Number
White/orange (1)	Data +	3
Orange (2)	Data –	2
White/green (3)	Optional Data +	5
Green (6)	Optional Data –	4
Blue (4)	Unused/unconnected	
White/blue (5)	Unused/unconnected	
White/brown (7)	Data signal common	1
Brown (8)	Data signal common	1



## SPECIFICATIONS

POWER SUPPLY:	9-30 VDC, 6W
INPUT SIGNAL:	ANSI E1.11 DMX512-A, ANSI E1.20 RDM
OUTPUTS:	ANSI E1.11 DMX512-A, ANSI E1.20 RDM
CONNECTIONS:	Two piece compression screw terminals, 16 - 24 AWG
SIZE:	3.5" x 6.25" x 1.25" (90mm x 160mm x 35mm)