

eDIN Model 1009 • DMX/RDM Splitter Manual

OVERVIEW

Pathway eDIN DMX/RDM Splitters allow 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 eDIN module requires 6 watts. Observe the correct polarity when connecting to V+ and V-. A second set of terminals are provided as a thru 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.

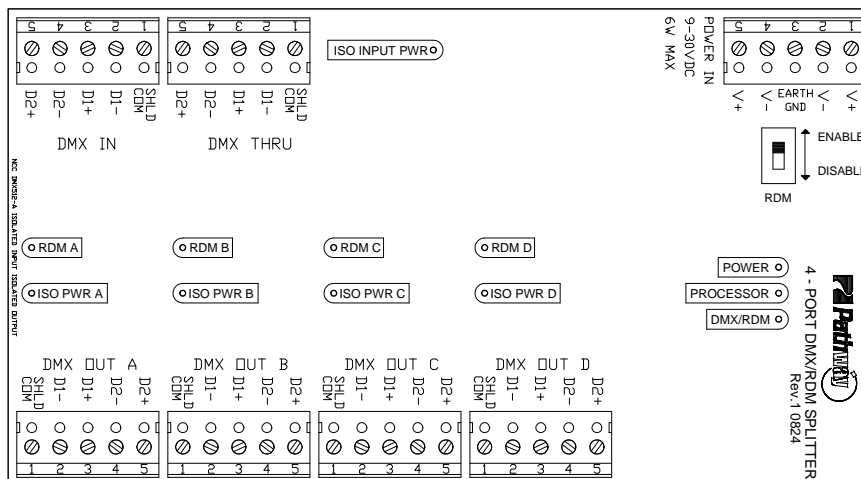
Connect DATA+ and DATA- to D1+ and D1- on the DMX IN terminal. Connect the cable shield or common to the SHLD COM terminal. Observe the same polarity convention throughout the system while connecting the four outputs.



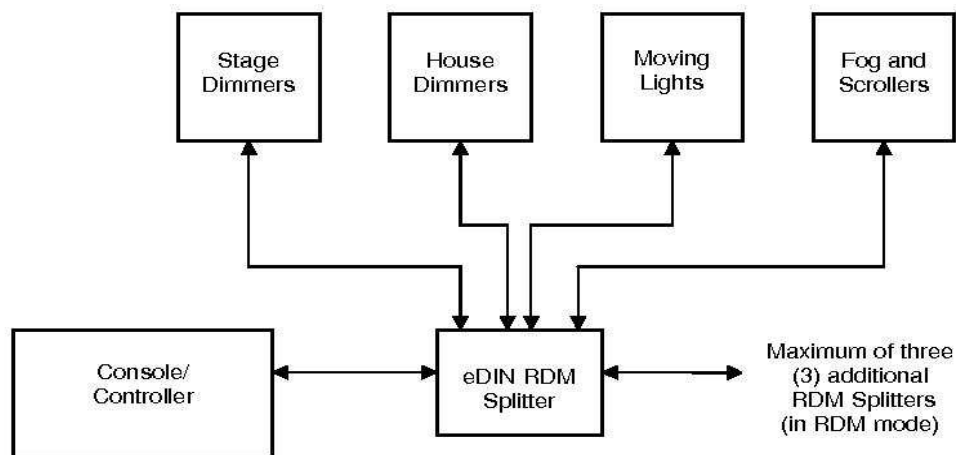
Connect wires for DATA2+ and DATA2- to D2+ and D2-, if desired. It is not necessary to connect these wires for DMX or RDM to function.

STATUS INDICATORS

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



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Typical System Layout

DMX TERMINATION

The eDIN DMX/RDM Splitter is internally terminated, to comply with the RDM standard, and does not require the user to provide any further termination.

The DMX THRU connector, as well as each output leg, begins a new DMX output run that requires termination at the other end. Proper termination is a 120 Ω resistor between pins 2 and 3 (D- and D+)

DMX THRU CONNECTOR

The DMX Thru connector is an active pass through and fully supports RDM. Due to timing restrictions in the RDM standard, no more than four (4) eDIN DMX/RDM Splitters may be daisy-chained together in one run. If RDM is disabled on all cards, up to eight (8) modules may be daisy-chained

RDM ENABLE/DISABLE

Some legacy DMX equipment does not check the start code of data packets on the network and may treat RDM data as if it were DMX levels. When the RDM switch is in the 'disable' position, the eDIN DMX/RDM Splitter will filter out all RDM packets, preventing downstream legacy equipment from acting unpredictably. The module should have the power cycled whenever the RDM switch is returned to the 'enable' position.

RDM RESPONDER FEATURES

The eDIN DMX/RDM Splitter is fully compliant with ANSI E1.20 as a responder device. An RDM controller, such as the Pathway *DMX Repeater Pro* will discover and retrieve the module's unique identifier (UID) and its firmware version. The module is fully discoverable and configurable even with the RDM switch in the 'disable' position.

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 fully 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.

RDM devices are classified as 'controllers' or 'responders'. 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, opto-splitters like the eDIN DMX/RDM Splitter must be prepared to pass data back to the controller.

RDM data packets differ from DMX data packets by using a different start code. The eDIN DMX/RDM Splitter detects this different start code and uses it as a cue to change data direction. Because of the processing involved in changing direction, the RDM standard specifies a maximum of four (4) splitters between the controller and the last responding device. This limit does not apply to systems with RDM disabled.

Individual 'responder' devices should not be installed between the eDIN DMX/RDM Splitter and the controller. RDM 'responders' should only be installed downstream of the eDIN DMX/RDM Splitter.

The RDM standard does not currently support a method of firmware upgrade for responders.

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) |



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