



### Operational Philosophy

The DMX512-A standard requires that DMX devices be installed in a daisy chain, with no tees, wyes or stars in the data wiring. However, site conditions may make star wiring desirable or even mandatory. A Pathway DMX Repeater permits star-wiring layouts by making each output a separate electrical entity, thereby protecting connected equipment from harmful electrical faults and ground loops.

### Data Connections

Pathway DMX Repeaters are typically used in the following configuration:

**DMX INPUT:** connected to the DMX output of the control console

**DMX OUTPUTS:** connected to the remote output receptacles and/or DMX-controlled devices receiving the console signal.

**DMX THRU:** passes the console signal to additional DMX Repeaters or similar devices when connected to DMX INPUT on the next unit in line. This passive, unisolated connection will work after loss of power to the DMX Repeater.

### XLR Connector Pin-out

| 5 Pin XLR Connectors (Standard)     |                   |
|-------------------------------------|-------------------|
| Pin 1                               | Common            |
| Pin 2                               | Data (-)          |
| Pin 3                               | Data (+)          |
| Pin 4                               | Optional Data (-) |
| Pin 5                               | Optional Data (+) |
| 3 Pin XLR Connectors (Non-Standard) |                   |
| Pin 1                               | Common            |
| Pin 2                               | Data (-)          |
| Pin 3                               | Data (+)          |

### Screw Terminal Connections

Model 9015 uses pluggable screw terminal connectors on the rear panel. The pinout arrangement is the same as 5 pin XLR connectors.

### RJ45 Connectors

Model 9017 and 9018 use RJ45 Ethercon® connectors. The following is the ANSI standard wiring pin-out for DMX-over-Category wire.

| ANSI E1.27-2—Wiring Standard for DMX-over-Cat5/6 |                    |                |
|--|--------------------|----------------|
| Wire# -Color                                     | Function           | XLR equivalent |
| 1 - White/orange                                 | Data +             | 3              |
| 2 - Orange                                       | Data -             | 2              |
| 3 - White/green                                  | Optional Data +    | 5              |
| 6 - Green  | Optional Data -    | 4              |
| 4 - Blue   | Unused/unconnected | -              |
| 5 - White/blue                                   | Unused/unconnected | -              |
| 7 - White/brown                                  | Data signal common | 1              |
| 8 - Brown  | Data signal common | 1              |

### LED Status Indicators

|                   |   |
|-------------------|---|
| <b>MAIN POWER</b> | Blue. Located next to the INPUT port. Steady glow indicates the main power input OK. Off indicates no power.                                    |
| <b>PORT POWER</b> | Blue. Located next to each port. Steady glow indicates port power OK. Off indicates problem with internal, port power supply .                  |
| <b>DMX IN</b>     | Amber. Located above Main Power LED. Steady glow or glow with flicker indicates valid DMX input. Off indicates no DMX input.                    |
| <b>DMX OUT</b>    | Green. Located next to each port. Steady glow or glow with flicker indicates DMX output by that port. Off indicates no DMX output at that port. |

## DMX Basics

- Star-wiring is permitted only in conjunction with a repeater
- All cabling must be a continuous daisy-chain; no "Tees" are permitted
- Cable shield is earth-grounded at one end only, preferably at the control console
- Maximum length of one cable segment is 1,800 ft. (550m)
- The last DMX device on the line must be terminated with a 100 or 120 ohm resistor between pins 2 and 3
- Cable must be Belden 9842 (120Ω), 9829, 9729 (100Ω), ISO/IEC 11801 (Cat5) or equivalent
- Keep all DMX cabling away from high voltage or power cables to maintain data integrity

## DMX Termination

If a DMX Repeater has nothing connected to the DMX THRU port, the termination switch must be set to the 'ON' position (pushed in and latched).

If several DMX Repeaters are connected together using the DMX THRU connector, only the last DMX Repeater in the chain is terminated. All the others are not terminated (switch in the 'out' position).

As well, always ensure that the last receiving device connected to any output line is properly terminated.

## DMX512-A Compliance

When equipped with 5-pin XLR connectors, this product complies with the current ANSI E1.11 DMX512-A standard and all previous standards to DMX512 (1990).

Terminal-strip and RJ45-equipped models are compliant with E1.11 DMX512-A under the non-compatible connector (NCC) provision. RJ45-equipped models are intended for installation in restricted-access equipment rooms and should not be used as portable gear. Accidental connection to data switching or other equipment may cause equipment damage and/or personal injury.

All DMX ports are protected to 250V with self-healing circuitry.

## Installation Instructions

DMX Repeaters are intended for desktop use, or may be mounted in a standard 19" equipment rack, using the rack ear kit included.

Truss-mount adaptors (#9002) and wall-mount kits (#9003) are also available.

The DMX Repeater is intended for installation in a dry, indoor location. Operating conditions: 0°C - 40°C; 10-90% relative humidity, non-condensing.

**Warning:** The AC socket outlet shall be installed near the equipment and shall be easily accessible.

**Warning:** This equipment relies upon building installation primary overcurrent protection.

**Warning:** Except for the IEC chassis plug marked for AC input, all ports on the DMX Repeater Pro are intended for low voltage data lines only. Attaching anything other than low voltage sources to the data ports may result in severe equipment damage, and personal injury or death.

## Model Descriptions

### Rear-mounted Connectors

|               |  |
|---------------|--|
| <b>9014</b>   | 1 in - 8 out <b>DMX Repeater</b> , 5 pin XLR           |
| <b>9014-3</b> | 1 in - 8 out <b>DMX Repeater</b> , 3 pin XLR           |
| <b>9015</b>   | 1 in - 8 out <b>DMX Repeater</b> , terminal connectors |
| <b>9017</b>   | 1 in - 8 out <b>DMX Repeater</b> , RJ45 Ethercon       |

### Front-mounted Connectors

|               |  |
|---------------|--|
| <b>9016</b>   | 1 in - 6 out <b>DMX Repeater</b> , 5 pin XLR     |
| <b>9016-3</b> | 1 in - 6 out <b>DMX Repeater</b> , 3 pin XLR     |
| <b>9018</b>   | 1 in - 6 out <b>DMX Repeater</b> , RJ45 Ethercon |

## Specifications

|                      |   |
|----------------------|---|
| <b>Power Supply:</b> | Universal input (90-260V, 50/60Hz), 0.75A                                       |
| <b>Connections:</b>  | 5 pin XLR, 3 pin XLR, terminals, or RJ45  |
| <b>Isolation:</b>    | 2500V Opto-isolation on DMX lines<br>4000V Mains isolation                      |
| <b>Protection:</b>   | Up to 250VAC/DC on all port pins  |
| <b>Protocols:</b>    | ANSI E1.11 DMX512-A, DMX512 (1990), or any EIA422 or 485 based simplex protocol |
| <b>Size:</b>         | 17 x 6 x 1.75" (432 x 152 x 44mm)   |
| <b>Unit Weight:</b>  | 5.0 lbs. (1.86 kg)  |



Pathway Connectivity Solutions  
103-1439 17 Avenue SE Calgary AB Canada T2G 1J9  
tel (403) 243-8110 fax (403) 287-1281

support@pathwayconnect.com  
www.pathwayconnect.com