DMX TROUBLESHOOTING STEPS (All LED Types)

ISSUE	DMX Luminaires are not properly responding to DMX commands, generally malfunctioning, or are not discoverable on the network.
ACTIONS	First confirm the integrity of the DMX cabling, fix any issues, and then concentrate on individual Luminaire function.
FRIENDLY REMINDER	All DMX daisy chain runs require a 120 ohm terminating resistor at the location of the last luminaire in the run (connected across the Data – and Data +), provided by others.

To Ensure DMX Wiring Integrity, Follow These Steps Before Troubleshooting Luminaires

1. Inspect the integrity of Data - & Data + cabling.
    a. Initiate from the start of the home run, detaching from the controller.
    b. Identify the three wires: Drain, Data –, and Data +.
    c. Use an Ohms meter to gauge resistance across Data – and Data +.
    d. Acceptable range: 100 to 190 ohms.
    e. Caution against K ohms or M ohms readings indicating no resistor or line discontinuity.
    f. Validate during both powered and unpowered states; abnormal readings may require AC voltage/amperage assessment (less than 2vac is acceptable).

2. Switch to continuity mode to inspect shorts between data lines and drain.
    a. Data (+) and Data Shield: Check for continuity (should read open).
    b. Data (-) and Data Shield: Check for continuity (should read open).
    c. Check each line individually for shorts to build ground:
    d. Data (+) and Ground: Check continuity (should read open).
    e. Data (-) and Ground: Check continuity (should read open).
    f. Drain wire and Ground: Check continuity (should read open).
    g. Note: While not definitive, this electrical test identifies potential DMX wiring issues.

3. For pinpointing wiring problems, consider this “halving” approach:
    a. Divide the line in half and assess each section's reading.
    b. Example: add a terminating resistor to the end of the first half, then measure at the start.
        i. Good value implicates the second half's issue.
        ii. Poor value prompts second half inspection (measure at midpoint).
    c. Repeat halving strategy until the problematic area is narrowed down and identified
        i. Measure half of one of the halves (1/4 of run), repeat as needed.

Troubleshooting Luminaires

1. Individually connecting luminaires one at a time to the master controller, with no other luminaires or cabling connected to the controller, can reveal proper or malfunctioning operation of an individual luminaire.

2. If luminaires function well up until a point in the DMX cabling, concentrate on that area if the halving approach isn't utilized.