

**Description**

The 710 Bus Splitter/Repeater allows you to expand the typical LX-Bus installation both in the number of devices and the length of the wire used. As a splitter, the 710 provides superior mechanical wire connecting capability for up to three additional LX-Bus circuits. This makes the 710 module an excellent junction box when installing many LX-Bus devices at one location.

As a repeater, the 710 module can be installed at the end of an LX-Bus circuit to allow an additional circuit to be added thus increasing the total wire length.

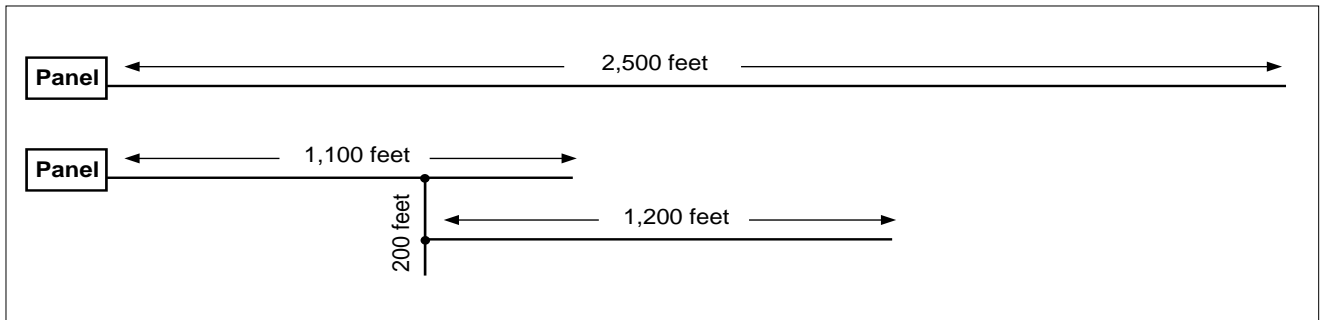
**LX-Bus™ Installation Specifications**

Three factors determine the performance characteristics of the DMP LX-Bus™: the *length* of wire used, the *number* of devices connected, and the *amount* of current required by the devices. The three specifications to keep in mind when planning an LX-Bus installation are:

1. **Maximum distance** for any one LX-Bus circuit is 2,500 feet.
2. **Maximum number of devices** per 2,500 feet is 40.
3. **Maximum voltage drop** between the panel (or auxiliary power supply) and any device is 2.0 VDC.

**Maximum distance**

The maximum cumulative distance for wiring on one LX-Bus circuit is 2,500 feet regardless of the gauge of wire. This distance can be in the form of one long wire run or multiple branches with all wiring totalling no more than 2,500 feet. See Figure 1.

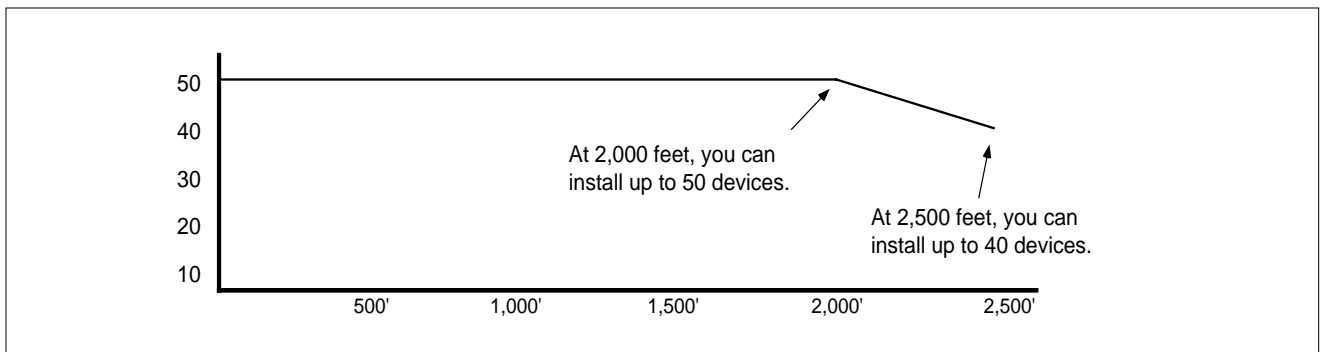


**Figure 1:** Maximum distance of one LX-Bus circuit.

**Maximum number of devices**

You can install up to 40 LX-Bus devices on each 2,500 feet of wire. This number can be increased to 50 if the wire run remains under 2,000 feet.

The graph below shows the maximum number of devices for each 2,500 foot circuit.



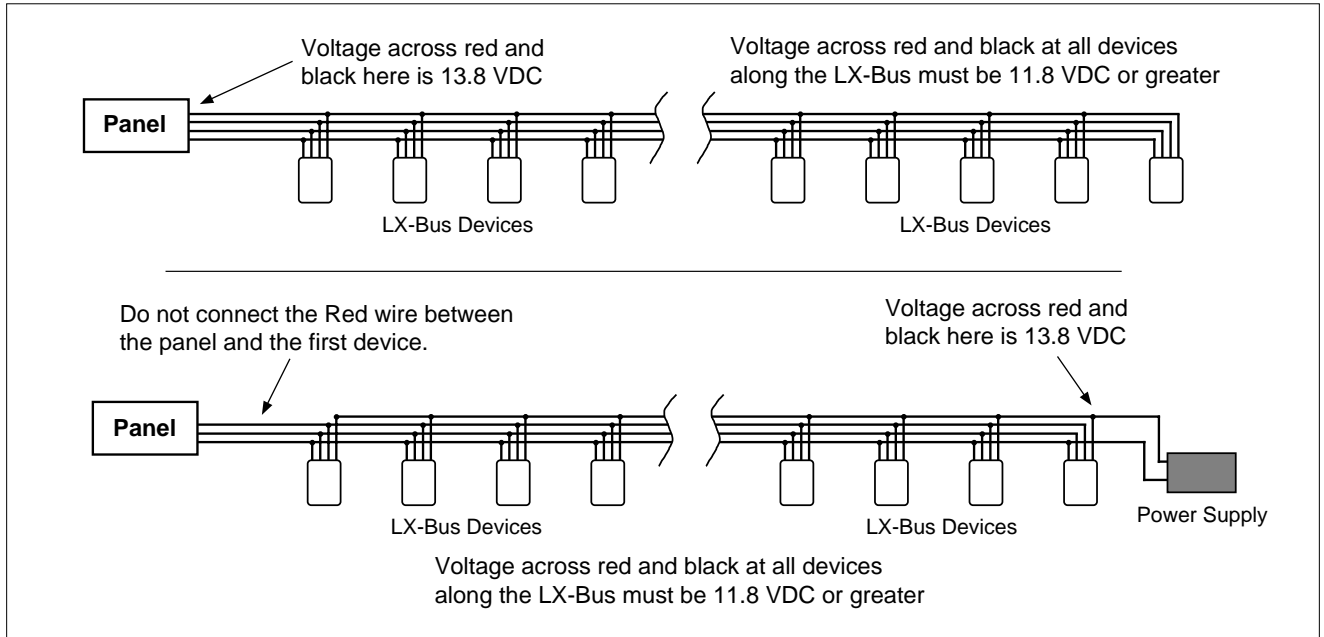
**Figure 2:** Maximum number of devices according to wire distance.

# LX-Bus™ Installation Specifications continued

## Maximum voltage drop

The maximum allowable voltage drop between the Command Processor panel and any device connected to the LX-Bus is rated at 2.0 VDC. As an example of the voltage drop, if the voltage across the red and black wires at the panel is 13.8 VDC the voltage measured at each device on the circuit must be equal to or greater than 11.8 VDC.

If the voltage at any device, including a 710 module, is less than the required level, an auxiliary power supply should be added at the end of the circuit. (The voltage drop can be reduced by increasing the gauge of wire used on the circuit.) The 2.0 VDC rule applies to LX-Bus circuits powered either by the panel or by an auxiliary power supply.



**Figure 3:** Voltage drop cannot exceed 2.0 VDC at any point on LX-Bus.

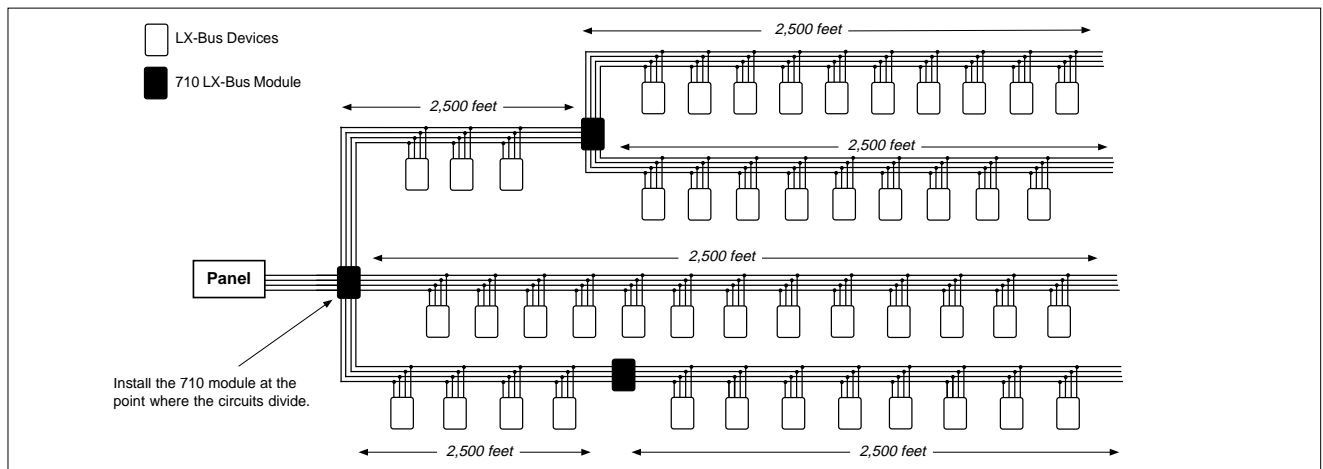
## Installing the 710 Bus Splitter Module

This section details the various wire configurations in which multiple LX-Bus circuits can be installed.

### Multiple LX-Bus circuits

In this example, the first 710 module is in close proximity to the panel. At this point, the 710 is used to branch the LX-Bus into three separate circuits. Each of these circuits can be run a distance of 2,500 feet. At the end of the 2,500 feet, another 710 module can be installed to add another 2,500 feet of LX-Bus capability. See Figure 4.

**Note:** The total distance of all circuits cannot exceed 15,000 feet.

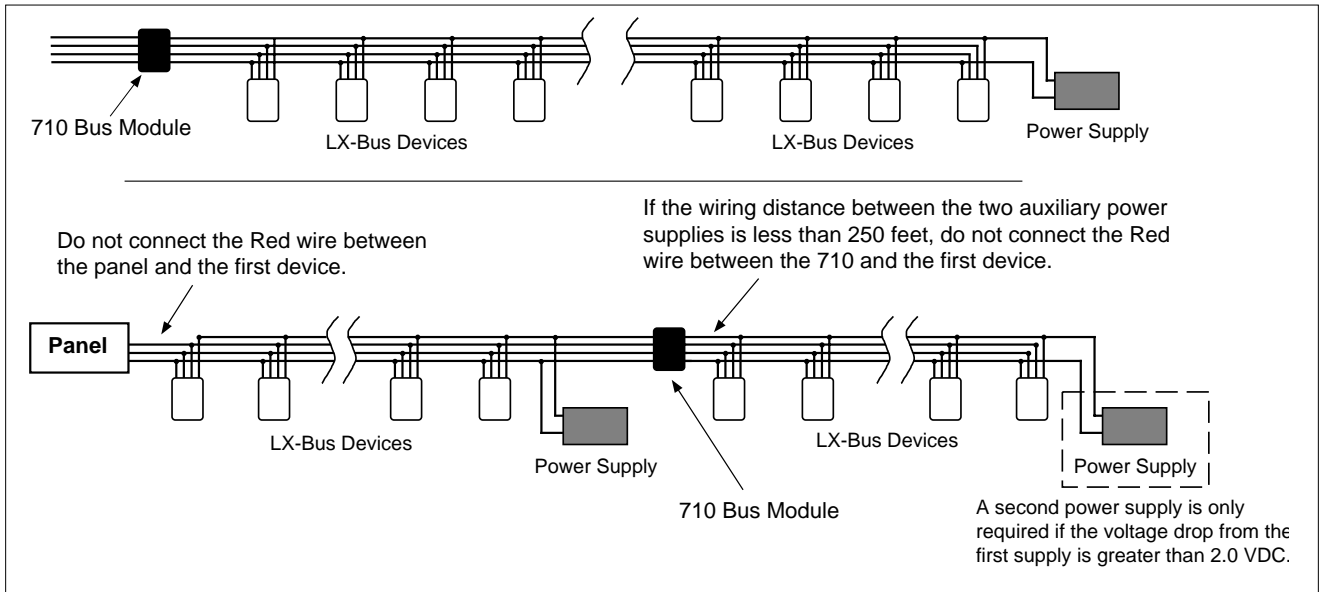


**Figure 4:** Multiple LX-Bus circuits.

## Installing the 710 Bus Splitter Module continued

### Locating optional power supplies on the LX-Bus™

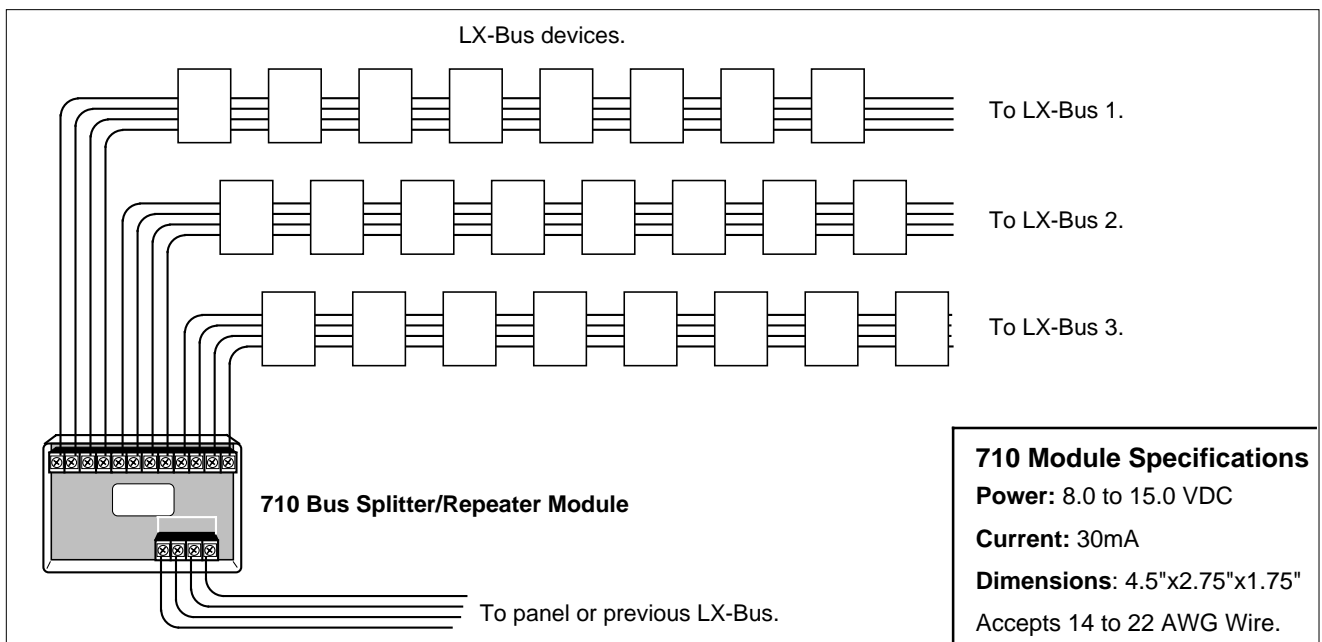
If auxiliary power supplies are needed to meet the 2.0 VDC maximum voltage drop rule, they should be added at each 710 module on the end of each circuit.



**Figure 5:** Power supply locations at end of LX-Bus.

### Additional use of the 710 module

The 710 module is an ideal device to add to the LX-Bus circuit close to any large grouping of LX-Bus devices. In this application, the 710 makes wiring multiple devices easier by providing a means to connect three separate wire runs to the main LX-Bus. In this application, wire nuts or other mechanical connectors are not required as all wiring terminates on the 710 screw terminals.



**Figure 6:** Using the Model 710 as a convenient junction box.