

710 Bus Splitter/Repeater Module

Description

The 710 Bus Splitter/Repeater Module expands the typical LX-Bus™, Keypad bus or Wireless bus installation both in the number of devices and the length of wire used. The 710 Bus Splitter/Repeater Module is suitable for listed burglary and fire applications.

As a splitter, the 710 provides superior mechanical wire connecting capability for up to three additional 12 VDC LX-Bus or Keypad bus circuits. This makes the 710 module an excellent junction box when terminating multiple LX-Bus/Keypad bus runs at one location. As a repeater, the 710 module can be installed at the end of an LX-Bus or Keypad bus circuit to allow the addition of a circuit to increase the total wire length.

Wiring Specifications for Keypad and LX-Bus

Several factors determine the performance characteristics of the DMP LX-Bus and Keypad bus: the *length* of wire used, the *number* of devices connected, and the *voltage* at each device. When planning an installation, keep in mind the following four specifications:

1. DMP recommends using 18 or 22-gauge **unshielded** wire for all keypad and LX-Bus circuits. **Do not** use twisted pair or shielded wire for LX-Bus and keypad bus data circuits. All 22-gauge wire must be connected to a power-limited circuit and jacket wrapped.
2. On keypad bus circuits, to maintain auxiliary power integrity when using 22-gauge wire do not exceed 500 feet (152.4 meters). When using 18-gauge wire do not exceed 1,000 feet (304.8 meters). To increase the wire length or to add devices, install an additional power supply that is listed for Fire Protective Signaling, power limited, and regulated (12 VDC nominal) with battery backup.
Note: Each panel allows a specific number of supervised keypads. Add additional keypads in the unsupervised mode. Refer to the panel installation guide for the specific number of supervised keypads allowed.
3. Maximum distance for any one bus circuit (length of wire) is 2,500 feet (762 meters) regardless of the wire gauge. This distance can be in the form of one long wire run or multiple branches with all wiring totaling no more than 2,500 feet (762 meters). As wire distance from the panel increases, DC voltage on the wire decreases. Maximum number of LX-Bus devices per 2,500 feet (762 meters) circuit is 40.
4. Maximum voltage drop between the panel (or auxiliary power supply) and any device is 2.0 VDC. If the voltage at any device is less than the required level, add an auxiliary power supply to the circuit. When voltage is too low, the devices cannot operate properly.

For additional information refer to the panel installation guide and LX-Bus/Keypad Bus Wiring Application Note (LT-2031).

Maximum Circuit Distance for Data

The maximum cumulative distance for wiring on one LX-Bus/Keypad bus circuit is 2,500 feet (762 meters), regardless of the wire gauge. This distance can be in the form of one long wire run or multiple branches with all wiring totaling no more than 2,500 feet (762 meters). See Figure 1.

Maximum Number of Devices per Circuit

Install up to 40 devices on every 2,500 feet (762 meters) of wire. The device number can increase up to 50 devices if the wire run remains less than 2,500 feet (762 meters).

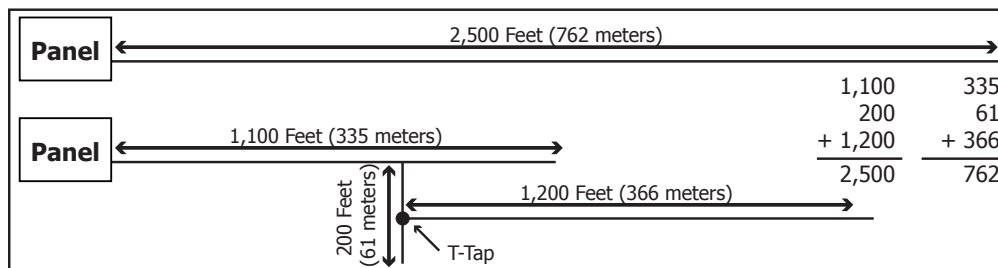


Figure 1: One Circuit Maximum Distance

Maximum Voltage Drop

The maximum allowable voltage drop between the panel and any device connected to the LX-Bus or Keypad bus is 2.0 VDC. A voltage drop example is when the voltage across the red and black wires at the panel reads 13.8 VDC, the voltage measured at each device 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, add an auxiliary power supply to the circuit. Increasing the wire gauge used on the circuit can reduce the voltage drop. The maximum voltage drop rule applies to LX-Bus circuits and Keypad data bus circuits powered either by the panel or by an auxiliary power supply.

Note: To troubleshoot voltage drop, read the voltage at the last device on the LX-Bus or Keypad bus.

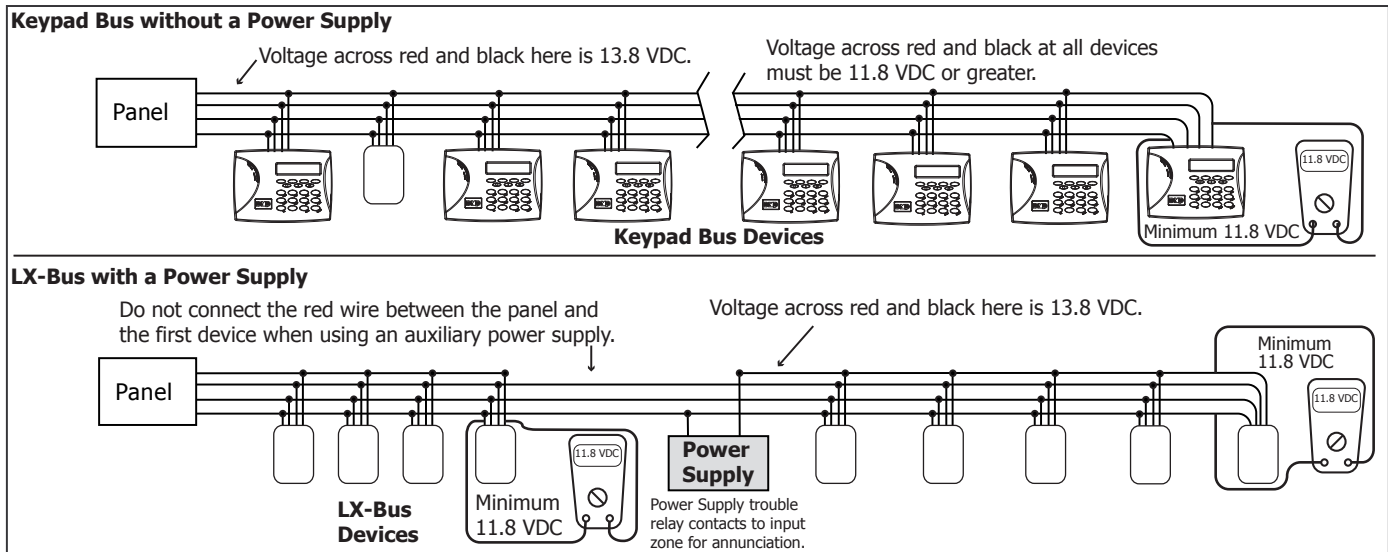


Figure 2: LX-Bus™/Keypad Bus Voltage

Installing the 710 Bus Splitter Module

This section details the various wire configurations used to install multiple LX-Bus/Keypad bus circuits. Figure 3 below illustrates the 710 Bus Splitter/Repeater basic wiring.

Wiring the 710 Bus/Splitter Repeater

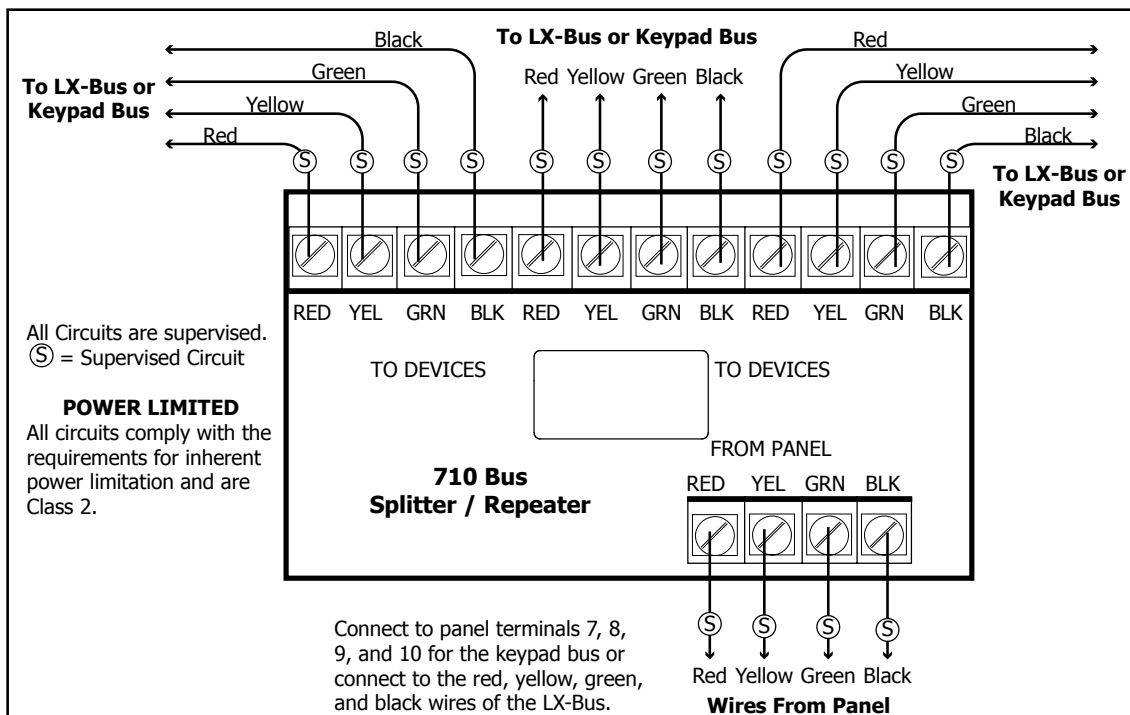


Figure 3: 710 Wiring Diagram

Multiple 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/Keypad bus into three separate circuits. Each of these circuits can be run a distance of 2,500 feet (762 meters). At the end of the 2,500 feet (762 meters), install another 710 module to add another 2,500 feet (762 meters) of LX-Bus/Keypad bus capability. See Figure 4.

Note: The total combined distance of all circuits cannot exceed 15,000 feet (4572 meters).

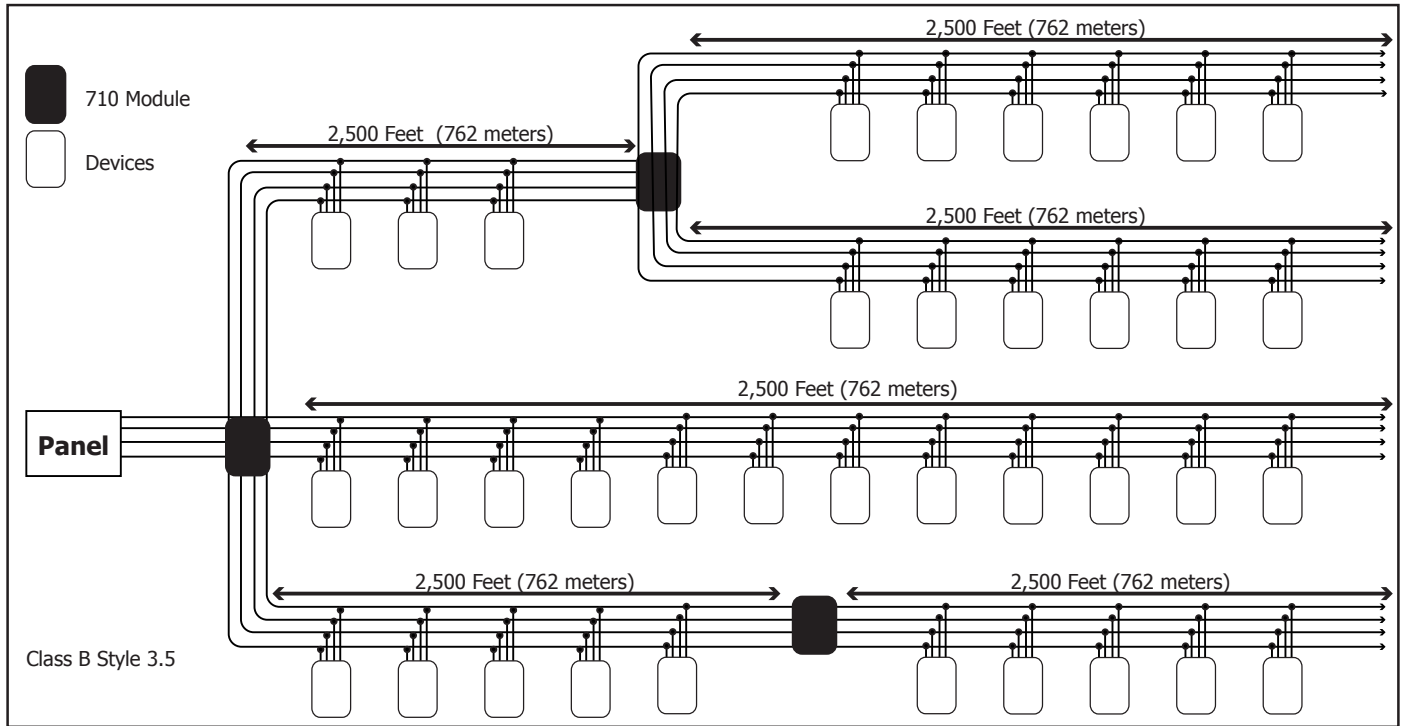


Figure 4: Multiple Circuits

Locating Optional Power Supplies

Add auxiliary power supplies on the end of each 710 module circuit to meet the 2.0 VDC maximum voltage drop rule.

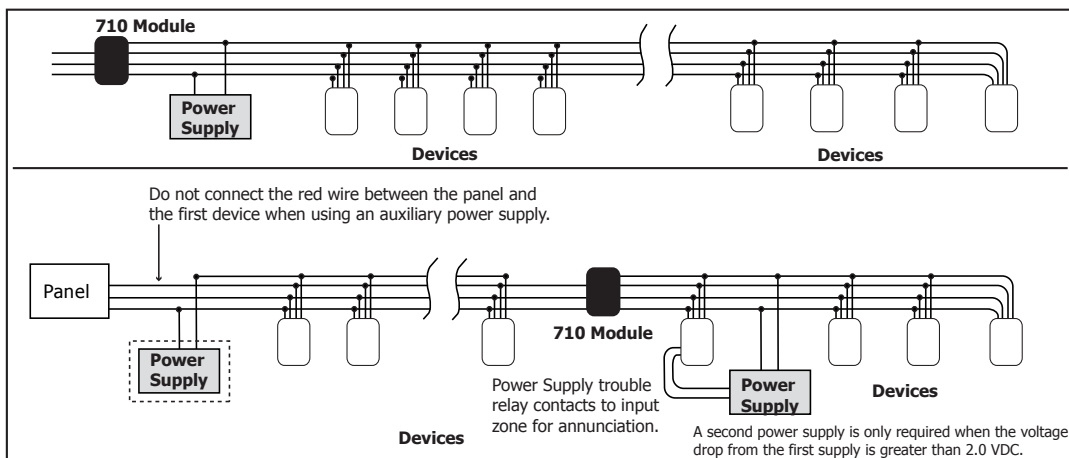


Figure 5: Additional Power Supplies

Additional Use of the 710 Module

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

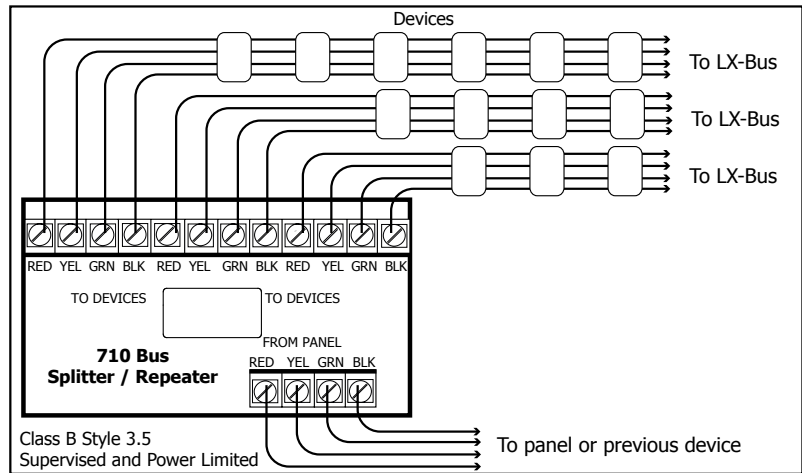


Figure 6: 710 as a Junction Box

Documentation

Specifications

Current Draw	
Voltage Range	8 VDC to 14.5 VDC
710 Module	32mA
Dimensions	4.5" W x 2.75" H x 1.75" D
	11.4 W x 7 H x 4.5 D cm
Wire Specification	Accepts 12 to 22 AWG wire

Compatibility

XT30/XT50 Series panels
 XR100/XR500 Series panels
 XR150/XR350/XR550 Series panels
 XT30INT panel
 XR150INT/XR550INT Series panels

Certifications

California State Fire Marshal (CSFM)	
New York City (FDNY COA #6167)	
ANSI/UL 365	Police Station Connect Burglar Alarm Systems
ANSI/UL 609	Local Burglar Alarm Units & Systems
ANSI/UL 864	Fire Protective Signaling Systems
ANSI/UL 985	Household Fire Warning System
ANSI/UL 1023	Household Burglar Alarm System Units
ANSI/UL 1076	Proprietary Burglar Alarm Units & Systems
ANSI/UL 1610	Central Station Burglar Alarm Units
ANSI/UL 1635	Digital Alarm Communication System Units

ULC/ORD-C1023 Household Burglar
 ULC/ORD-C1076 Proprietary Burglar
 CAN/ULC S304 Central Station Burglar
 CAN/ULC S545 Household Fire

International Certifications

Security Grade:	3
Environmental Class:	II
Intertek (ETL)	
EN 50130-4	EMC Product Family Standard: Immunity Requirements for Components of Fire, Intruder and Social Alarm Systems
EN 50130-5	Environmental Standards
EN 50131-1:2006+A1	Intrusion and hold-up systems
EN 50131-3:2009	Control and Indicating Equipment
EN 50133-1:1997	Access Control Systems
EN 61000-3-2	Limits - Limits for Harmonic Current Emissions (Equip. Input Current up to and Including 16 A per Phase) Includes A1 & A2 July 1, 2009
EN 61000-3-3	Limitation of Voltage Fluctuations & Flicker in Low-Voltage Supply Systems for Equip. with Rated Current Less Than or Equal to 16 A per Phase & Not Subject to Conditional Connection
EN 61000-6-4	Generic Standards - Emission Standard for Industrial Environments



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