

BASrouterLX

BACnet® Multi-Network Router

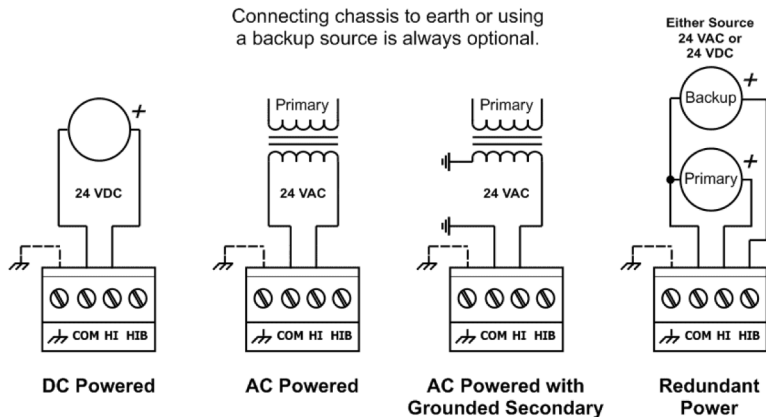
The BASrouterLX is a high-performance BACnet router providing stand-alone routing between BACnet networks such as BACnet/IP, BACnet Ethernet, and BACnet MS/TP. Besides its high-speed processor, it has advanced features such as MS/TP slave proxy support (allowing auto-discovery of MS/TP slaves) and diagnostic MS/TP frame capture and storage for use with Wireshark®. Up to 50 BBMD and 147 FDR entries can be made. The BASrouterLX has two physical communication ports — a 10/100 Mbps BACnet/IP Ethernet port and an optically isolated EIA-485 port for MS/TP. Router configuration is accomplished using a resident web page.

- Optically isolated MS/TP port
- MS/TP baud rate range from 9.6–115.2 Kbps
- MS/TP capture using Wireshark®
- BACnet/IP Broadcast Management Device (BBMD)
- Foreign Device Registration (FDR)
- 50 BBMD entries, 147 FDR entries
- MS/TP Backbone
- Whitelist
- Backward Routing

Installation

Power Connection

The BASRTLX-B requires 24 VAC or 24 VDC while drawing no more than 10 VA of power. The recommended conductor size is 16–18 AWG. COM is directly connected to zero volts and the chassis is DC isolated from zero volts. Input connections are reverse-polarity protected. See figure below for power options.



WARNING: Internally, this device utilizes a half-wave rectifier and therefore can only share the same AC power source with other half-wave rectified devices. Sharing a common DC power source is also possible. Sharing AC power with full-wave rectified devices is NOT recommended. Devices powered from a common AC source could be damaged if a mix of half-wave and full-wave rectified devices exists.

Installation Guide

Electrical (Class 2 Circuits Only)

INPUT	DC	AC
Voltage (±10%):	24 V	24 V
Power:	6 W	10 VA
Frequency:	N/A	47-63 Hz

Environmental

Operating temperature:	0°C to 60°C	
Storage temperature:	-40°C to +85°C	
Relative humidity:	10–95%, non-condensing	

Functional

	Ethernet	MS/TP
Physical Layer:	10BASE-T 100BASE-TX	EIA-485
Cable length limit:	100 m	1200 m
MS/TP data rate (Kbps):	9.6, 19.2, 38.4, 57.6, 76.8, 115.2 Kbps	
MS/TP node limit:	254 devices total, 31 full-load devices per segment	



MS/TP Physical Layer Bias and Termination

End-of-Line termination (120Ω) is normally applied at both ends of the MS/TP bus, especially when using long cable segments and faster data rates. Fail-safe voltage bias (200mV) ensures stable MS/TP operation. The BASrouterLX is shipped with fail safe voltage bias and EOL termination applied. Depending on the application, these can be configured by removing jumpers inside of the case.

End Device – In a router application where the location of the router is at the end of the MS/TP bus segment – both bias and EOL termination must be applied.

Middle Device – In a router application where the location of the router is anywhere between the end MS/TP devices (in the middle of the bus), termination jumper should be removed. Fail-safe voltage bias jumpers could be left in place depending on whether other devices on the MS/TP bus are providing additional bias or not.

Three configuration jumpers are located inside BASrouterLX's case near the MS/TP connector. Removing the BASrouterLX cover provides access to the 6-pin jumper block.

- U Install jumper to apply pull-up bias.
- T Install jumper to terminate bus.
- D Install jumper to apply pull-down bias.

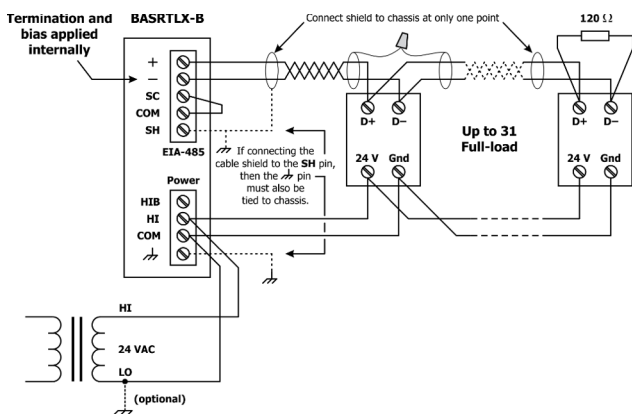


(all jumpers are installed by default)

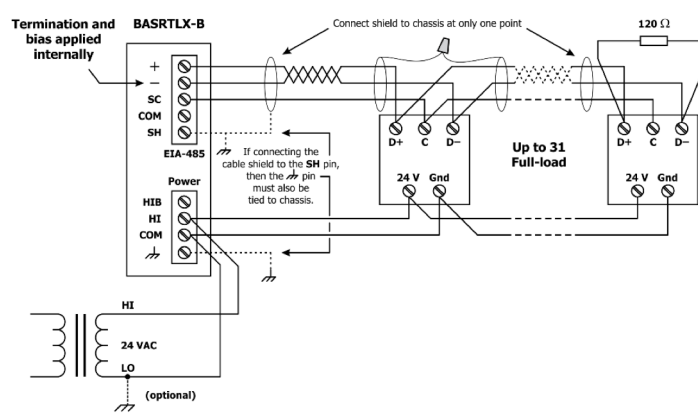
MS/TP Physical Layer Connection Options

For MS/TP devices that share a power source with the BASRTLX-B

2-wire MS/TP Bus with Shared Power Source

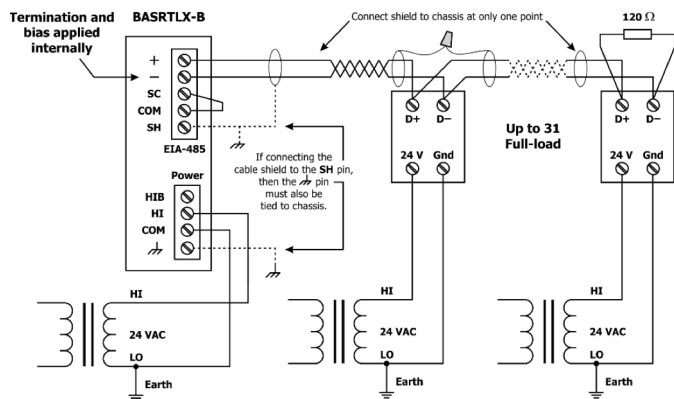


3-wire MS/TP Bus with Shared Power Source

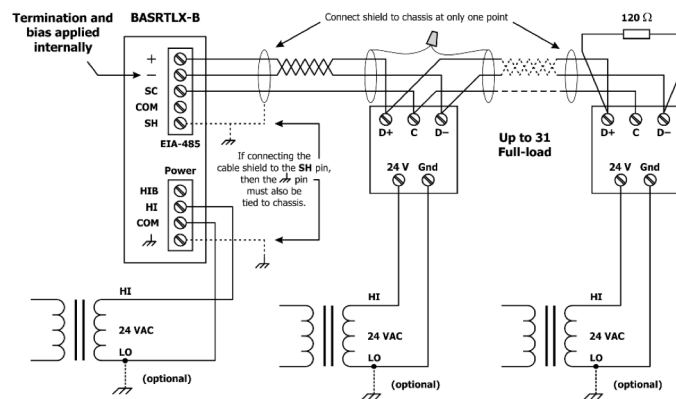


For MS/TP devices that use a power source separate from the BASRTLX-B

2-wire MS/TP Bus with Separate Power Sources



3-wire MS/TP Bus with Separate Power Sources



Web Page Configuration

The BASrouterLX contains an interactive web server accessible from any Internet-compatible PC on the local network with recent versions of most standard web browsers such as Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, or Google Chrome installed.

To configure the router initially, connect it to your Windows PC using an Ethernet cable and set the PC's IP and subnet mask in Local Area Connection → Properties. In the Internet Protocol Version 4 (TCP/IPv4) settings of your Windows PC, specify an IP address and a Subnet mask in the same subnet as the BASrouter (e.g. 192.168.92.5 /24).

BASrouterLX's factory-programmed: Default IP address is **192.168.92.68** and a Class C subnet mask of **255.255.255.0 (/24)**
User Name is: **admin** and Password is: **admin**

Reset IP switch is located on the front, underneath Power LED. Press and hold the **Reset IP** button using a paper clip for at least 5 seconds while the router is powered. Remove power and restore power again to complete the reset IP, User ID, and Password procedure to factory-programmed defaults. For complete datasheet and details on BASrouterLX, support, or compliance information, please download our BASrouterLX User Manual at: <https://www.ccontrols.com/basautomation/basrouterlx.php> and click on the Support tab under More Information.

