

# BASrouter Portable

## BACnet® Multi-Network Router

The BASrouter portable provides stand-alone routing between BACnet networks such as BACnet/IP, BACnet Ethernet, and BACnet MS/TP – thereby allowing the system integrator to mix BACnet network technologies within a single BACnet internetwork. The BASrouter portable is housed in a compact durable case. It connects to a PC or laptop computer’s USB port for power – 5 VDC using USB type B cable provided in the box. There are three physical communication ports on the BASrouter portable – a 10/100 Mbps Ethernet port with auto-negotiation and Auto-MDIX using a shielded RJ-45 connector, an optically isolated EIA-485 port for MS/TP connection, and an RJ-11 port for an alternative MS/TP connection. Three LEDs – one each for power, Ethernet, and MS/TP receive-traffic provide visual indication of proper operation. DHCP client feature can be enabled for easy IP addressing and reduced network administration. Configuration is accomplished via BASrouter internal web page. MS/TP status web page provides diagnostic information about BACnet MS/TP bus. Routing status page provides a routing table of devices on the network.

### Installation

#### Power Connection

The BASRTP-B is powered by a USB cable with Type B plug – cable is included in the box. It requires 5 VDC from the host computer, while drawing 300 mA of current. It can be powered from a USB hub, if desired. No special Windows driver is needed—ignore Windows error message, “USB device not recognized.”

#### Ethernet Port

The shielded RJ-45 connector used for Ethernet connection supports auto-negotiation and Auto-MDIX. It automatically matches its duplex setting, flow control, data rate and signal polarity to whatever is supported by the attached equipment. Thus, the provided CAT5 cable is the only cable needed for the Ethernet connection.

#### MS/TP Parameters

**MS/TP MAC address (Default Value = 00).** This is the 8-bit (0–127) MAC address of the router’s MS/TP port, in decimal.

**MS/TP Baud Rate (Default Value = 9600).** The data rate of the MS/TP bus can be set to: 9600, 19200, 38400 or 76800 bps. All devices must use the same data rate.

**MS/TP Network (Default Value = 2001).** This 16-bit decimal network number (1–65534) must be unique for all BACnet networks within the BACnet internetwork. No other networks, regardless of type, can have the same network number.

**Max Masters (Default Value = 127).** Only master nodes participate in the MS/TP token-passing process. The highest master MAC address (in decimal) in the MS/TP bus is 127. You should use 127 if you are unsure of other MS/TP device addresses.

### Installation Guide

#### Electrical

|               |                   |
|---------------|-------------------|
| INPUT         | <b>USB type B</b> |
| Voltage:      | 5 VDC             |
| Power:        | 1.5 W             |
| Current draw: | 300mA             |

#### Environmental

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

#### Functional

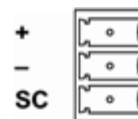
|                        | <b>Ethernet</b>  | <b>MS/TP</b>     |
|------------------------|--|------------------|
| Physical Layer:        | 10BASE-T<br>100BASE-TX                                 | EIA-485<br>RJ-11 |
| Cable length limit:    | 100 m  | 1200 m           |
| MS/TP data rate (bps): | 9600, 19200, 38400, 76800                              |                  |
| MS/TP node limit:      | 254 devices total,<br>31 full-load devices per segment |                  |



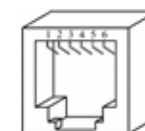
#### MS/TP Physical Layer

BASrouter portable has two MS/TP port connections to its isolated EIA-485 transceiver – a removable 3-pin connector and an RJ-11 jack. Either connector can be used for MS/TP line. The EIA-485 transceiver’s + and – lines are tied to + and – pins of both connectors. The SC pin ties to the circuit ground of the EIA-485 transceiver and is isolated from both the USB and Ethernet ports. You must connect the SC pin to the signal common of the MS/TP segment — or MS/TP communication will fail.

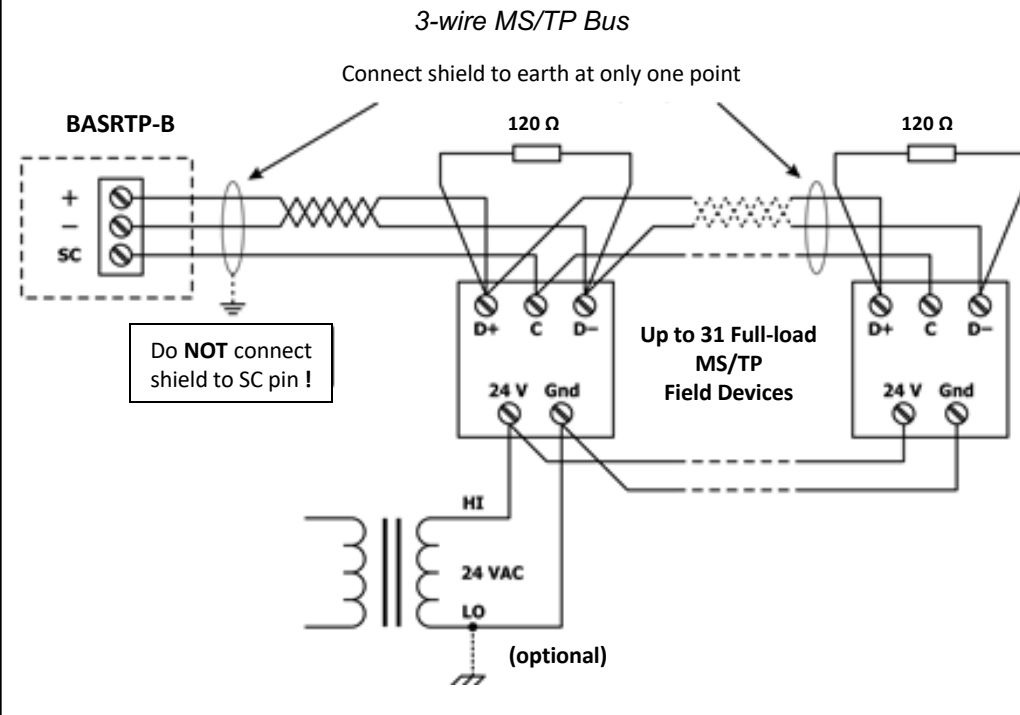
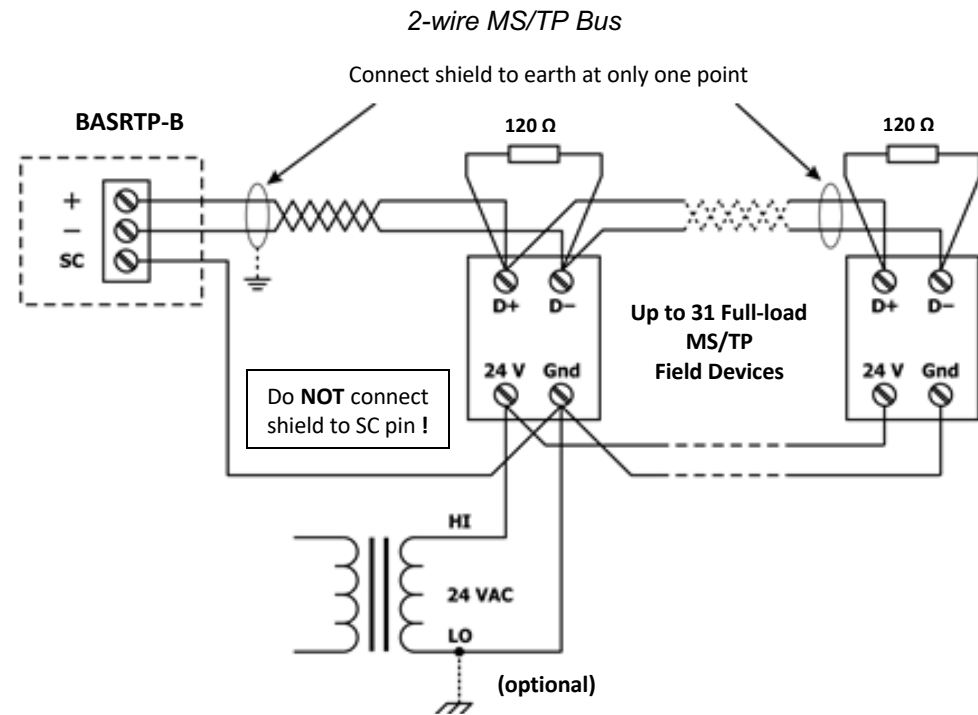
#### 3-pin (MS/TP) Pin Assignments



#### RJ-11 (MS/TP) Pin Assignments



**Note:** No end-of-line termination is provided on the BASrouter portable, giving it the ability to be inserted between any nodes of the MS/TP bus.



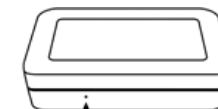
**Web Page Configuration**

The BASrouter is configured using a web server accessible from any PC on the local network with recent versions of any standard web browser 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).

*BASrouter'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*

**ATTENTION: The default login credentials must be changed before the BASrouter system configuration can be altered. Please change the password to an 8-10 character alphanumeric value (at least one letter and one number). This ensures authorized access to the router only.**

**Reset IP** switch is located on the side of the unit. Press and hold the *Reset IP* button using a paper clip for at least 3 seconds while the router is powered by USB cable. Remove USB power cable and then restore power again to complete the reset IP, User ID, and Password procedure to factory-programmed defaults.



Reset Switch



For complete datasheet and details on BASrouter, support, or compliance information, please download our BASrouter User Manual at: <https://www.ccontrols.com/basautomation/basportable.php> and click on the Support tab under More Information.