

# CONTEMPORARY CONTROLS®

## BASrouterSX

### BACnet Multi-Network Routing with SSL and Wireshark® Capture with Optional GSA Compliance

The BASrouterSX is a high-performance BACnet router that provides stand-alone routing between BACnet networks such as BACnet/IP, BACnet Ethernet (ISO 8802-3), and BACnet MS/TP. Besides a high-speed processor, it has advanced features such as MS/TP Backbone, Backward Routing, Allowlist option for enhanced security, MS/TP slave proxy support (allowing auto-discovery of MS/TP slaves) and MS/TP frame capture and storage for use with Wireshark®. As a BACnet/IP Broadcast Management Device (BBMD), up to 50 BDT and 147 Foreign Device Registration (FDR) entries can be supported. The BASrouterSX 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 via web pages using HTTPS (HTTP over SSL). The BASrouterSX-GSA is a GSA-compliant model which has been tested and approved for use in U.S. government buildings.

#### Versatile Routing Between...

- BACnet/IP and BACnet MS/TP
- BACnet Ethernet and BACnet MS/TP
- BACnet/IP and BACnet Ethernet
- BACnet/IP and BACnet Ethernet and BACnet MS/TP
- Two BACnet/IP networks (between two UDP ports)

#### IP Network Support

- Web server for commissioning and troubleshooting
- MS/TP capture using Wireshark
- 50 BBMD entries, 147 FDR entries

#### Flexible Communications

- 10/100 Mbps Ethernet with auto-negotiation and Auto-MDIX
- MS/TP slave auto-discovery and proxy support
- MS/TP Backbone
- Backward Routing
- Allowlist
- Optically-isolated MS/TP port
- MS/TP baud rates from 9.6–115.2 kbps

#### Convenient Installation

- 24 VAC/VDC ( $\pm 10\%$ ), 47–63 Hz input voltage
- DIN rail mount



## BACnet/IP Network Security

Although the BACnet MS/TP network is secure by nature, the BACnet/IP network could contain security weaknesses. The BASrouterSX can optimize BACnet/IP network security by utilizing an Allowlist. By configuring the Allowlist, only specific BACnet/IP devices can communicate to the BACnet internetwork. The BASrouterSX-GSA is a GSA-compliant model which has been tested and approved for use in U.S. government buildings.

### MS/TP Backbone

MS/TP backbone allows BACnet communication to occur in some special cases, for example when two routers are connected via MS/TP. The BACnet/IP devices on either side of the routers in this case have no idea of the MS/TP link in between and this results in the messages being dropped because of smaller size of the Max APDU on the MS/TP side. Enabling this feature allows the BACnet/IP devices to work properly.

### BACnet MS/TP capture using Wireshark

MS/TP Traffic capture is continuously stored to a buffer in the BASrouterSX. By clicking the Generate button, the buffer is written into a Wireshark compatible file. The file can then be viewed on a PC with the free Wireshark tool.

### Broadcast I-Am

In normal operation, the router forwards broadcast I-Am messages received from the BACnet/IP side to the BACnet/MSTP side. For MS/TP devices with small memory, this may cause an issue if they receive a flood of I-Am messages. When this feature is enabled, the router does not forward the broadcast I-Am messages to the MS/TP side.

The screenshot displays the 'CONTEMPORARY CONTROLS' web interface for the 'BASrouterSX High-Performance BACnet® Router'. The top navigation bar includes 'Setup', 'Administration', 'Advanced', 'Status', 'Save & Reboot', and 'Logout'. The main content area is titled 'BACnet Allowlist' and features a table for configuring the allowlist. The 'Allowlist Status' is set to 'Enable'. The table has columns for 'BACnet Allowlist IP Address' and 'Enabled'. Below the table, the 'MS/TP Backbone' section is visible, with 'Enable' selected. To the right, there are checkboxes for 'Block Broadcast I-Am to MS/TP Network' and 'Block Full Range Who-Is Broadcast to MS/TP Network', both set to 'Disable'. At the bottom, there is a 'Generate MS/TP Traffic Wireshark File' button. A modal dialog box is open, providing instructions on how to view the traffic snapshot using Wireshark.

**BACnet Allowlist**

Allowlist Status: ☒ Enable ☐ Disable

| BACnet Allowlist IP Address | Enabled                  |
|-----------------------------|--------------------------|
| <input type="text"/>        | <input type="checkbox"/> |
| <input type="text"/>        | <input type="checkbox"/> |
| <input type="text"/>        | <input type="checkbox"/> |
| <input type="text"/>        | <input type="checkbox"/> |
| <input type="text"/>        | <input type="checkbox"/> |
| <input type="text"/>        | <input type="checkbox"/> |
| <input type="text"/>        | <input type="checkbox"/> |
| <input type="text"/>        | <input type="checkbox"/> |

MS/TP Backbone: ☐ Enable ☒ Disable

Block Broadcast I-Am to MS/TP Network: ☐ Enable ☒ Disable

Block Full Range Who-Is Broadcast to MS/TP Network: ☐ Enable ☒ Disable

Apply Cancel

Generate MS/TP Traffic Wireshark File

To view the snapshot of MS/TP traffic, first click the **Generate MS/TP Traffic Wireshark File** button and then click **View MS/TP Traffic** button. It may take a few seconds for this button to appear. The Traffic is continuously stored to a buffer in the BASrouterSX. When you press the Generate button the buffer is written into a Wireshark compatible file. You must have Wireshark installed on your PC to view this file.

## Ordering Information

| Model         | RoHS | Description                                    |
|---------------|------|------------------------------------------------|
| BASRTSX-B     |      | BACnet/IP to MS/TP to Ethernet Router with SSL |
| BASRTSX-B-GSA |      | BACnet/IP to MS/TP to Ethernet Router for GSA  |

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