

Models

- RPB11** (1 BACnet port)
- RPB12** (2 BACnet ports)

Description

The RPB BACnet router interconnects the different BACnet network technologies such as BACnet MS/TP and BACnet IP/Ethernet to form a BACnet internetwork. It is available with 1 or 2 BACnet MS/TP ports and a RJ45 connection for IP services. All the network management settings can be configured via the embedded web server.

Features

Power

- 24Vac or 24Vdc supply

Installation

- Up to 32 or 64 BACnet devices without the use of additional line drivers
- Simple web-based configuration for BACnet IP and MS/TP communication
- Connect using expansion slot to convert CMMB100E and CMMB102E as IP I/O cards
- Support up to 3 mini I/O cards in any combination and make them IP ready while maintaining the MS/TP ports for BACnet routing



RPB Series

Network Communication

- BACnet MS/TP, IP or Ethernet
- Select MAC address via DIP switch or via network

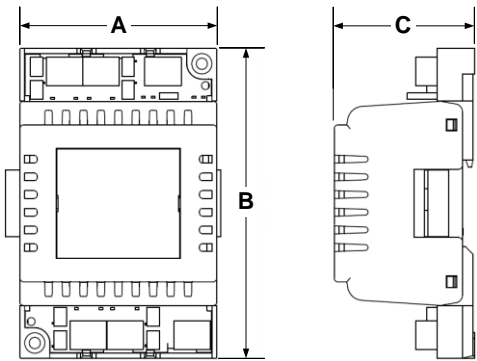
BACnet MS/TP

- MS/TP @ 9600, 19200, 38400, 57600, 76800 or 115200 bps
- Automatic baud rate detection
- Automatic device instance configuration

BACnet IP / BACnet Ethernet

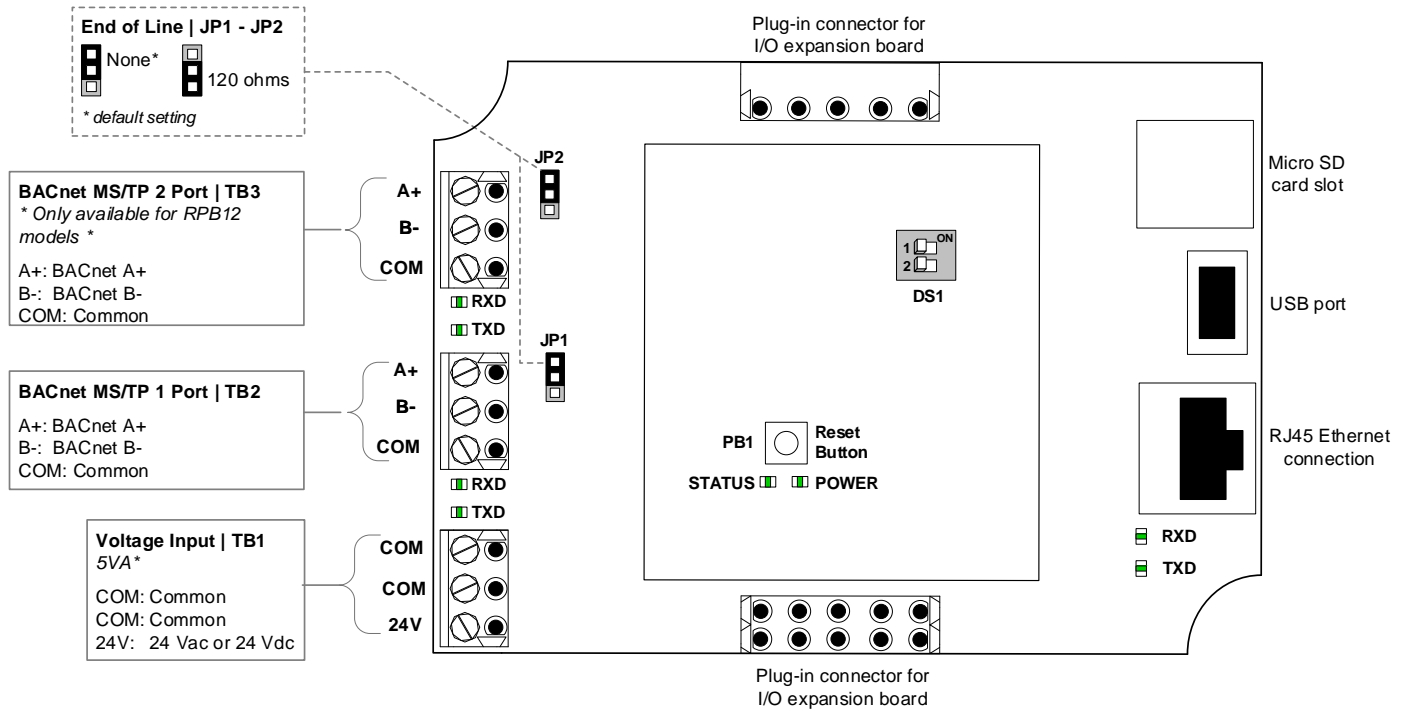
- All IP / Ethernet configuration via on board web page.
- Supports DHCP or fixed/static addressing

Technical Specifications

Specifications	RPB Series
Input Voltage	24Vac or 24Vdc
Consumption	5VA
BACnet	BACnet® MS/TP @ 9600, 19200, 38400, 57600, 76800 or 115200 bps
Communication Connections	24 AWG twisted-shield cable (Belden 9841 or equivalent)
Electrical Connections	0.8 mm ² [18 AWG] minimum
Operational Temperature	0°C to 50°C [32°F to 122°F]
Storage Temperature	-30°C to 50°C [-22°F to 122°F]
Relative Humidity	5 - 95% non condensed
Weight	0.2 kg [0.4 lb]
Dimensions A = 3.18" / 81 mm B = 4.93" / 125 mm C = 2.27" / 58 mm	

Connections and Configurations

Please note that all jumper settings must also be set to the same value through BACnet.



LEDs

Power

On = Input voltage normal
 Off = No power

Status

Flashing = Normal operation (watchdog)

RX/TX (BACnet)

Flashing = Receiving (RX) and/or transmitting (TX) data.

Network Settings



CAUTION: Connect the device to a secure network with a strong firewall protection, in order to prevent unauthorized access to the system.

All settings for network management can be made through the local web page of the router.

The default IP address of the router is **192.168.1.100**.

- If the newly set address is lost or the currently assigned IP address of the device cannot be remembered, reset the router using the push button on the top board.



Web Page Configuration

Using the currently assigned IP address, load the local web page.

- Using the Login button, access the Login screen and enter the password **8432** to access all of the properties of the module.
- Under the **General Settings** tab, information about the Physical IO, Network, Communication and System can be accessed.

The screenshot displays the web configuration interface for a BACnet Router. The page is titled "neptronic BACnet Router" and includes a "Log In" button in the top right corner. On the left side, there is a "Main Screen" sidebar with device information:

- DeviceName: BACnet Router
- Location: Default Location
- Description: BACnet Router
- DeviceInstance: 153010
- ModelName: BACnet Router
- SerialNumber: BACnetR20191120
- Core Version: 2.02.202206271521
- Application Version: 0.06.20220627
- LocalDateTime: 2022-11-21 09:26:57
- SystemStatus: Operational

The main content area is titled "General Settings" and contains a table with columns "Object name" and "Present Value". The table is organized into several expandable sections:

- Physical IO:**
 - Dip Switch 1 (AV.42): 1
 - Dip Switch 2 (AV.43): 3
 - Reset Button (BL.1): Off
 - Status LED (BO.2): Priority tab
 - Power LED (BO.1): Priority tab
- Network:**
 - DeviceInstance (PIV.1): 153010
 - BACnetMSTP1:**
 - MSTP1RxValid (PIV.16): 0
 - MSTP1RxInvalid (PIV.17): 0
 - MSTP1RxLost (PIV.18): 0
 - MSTP1Tx (PIV.19): 2887
 - MSTP1TxLost (PIV.20): 0
 - BACnetMSTP2:**
 - MSTP2RxValid (PIV.41): 0
 - MSTP2RxInvalid (PIV.42): 0
 - MSTP2RxLost (PIV.43): 0
 - MSTP2Tx (PIV.44): 2883
 - MSTP2TxLost (PIV.45): 0
 - BACnet IP:**
 - IPDRxValid (PIV.21): 8
 - IPDRxInvalid (PIV.22): 0
 - IPDRxLost (PIV.23): 0
 - IPDTx (PIV.24): 8
 - IPDTxLost (PIV.25): 0
- Communication:**
 - DHCP Enable (BV.9): Inactive
 - StaticAddress (CSV.26): 192.168.001.125
 - ActualAddress (CSV.30): 192.168.001.125
- System:**
 - SystemStatus (MV.1): Operational
 - VendorName (CSV.2): Neptronic
 - ModelName (CSV.3): BACnet Router
 - Core Version (CSV.4): 2.02.202206271521
 - Application Version (CSV.5): 0.06.20220627
 - SerialNumber (CSV.8): BACnetR20191120
 - ProfileName (CSV.9): Default
 - MCULoad (AV.10): 10.5%
 - MemoryLoad (AV.11): 46.9%
 - System Reset Reason (MV.4): Pin
- Extended Configuration:**
 - UTCOffset (AV.2): -300min
 - DaylightSavingsStatus (BV.1): No
 - LocalDateTime (DTV.2): Time Synchron



Integration

Under the **Integration** tab, information about all the network settings can be accessed.

neptronic BACnet Router Log Off

Main Screen

DeviceName: BACnet Router
 Location: Default Location
 Description: BACnet Router
 DeviceInstance: 153010

ModelName: BACnet Router
 SerialNumber: BACnetR20191120
 Core Version: 2.02.202206271521
 Application Version: 0.06.20220627

LocalDateTime: 2022-11-21 09:27:44
 SystemStatus: Operational

Active Alarms:

Info: 0
 MSTP1MAC: 0
 MSTP2MAC: 0

General Settings | **Integration** | Super User

Object name	Present Value
▼ Network	
▼ Device	
DeviceName (CSV.1)	BACnet Router
Location (CSV.6)	Default Location
Description (CSV.7)	BACnet Router
DeviceInstance (PIV.1)	153010
▼ HttpServer	
Http Server Units (MV.7)	Metric
▼ BACnetServer	
Ethernet enable (BV.26)	enable
▼ BACnetMSTP1	
MaxMaster (AV.24)	127
MaxInfoFrames (AV.25)	1
Network (AV.27)	1
Auto Baud Rate (BV.6)	No
Baud Rate (MV.11)	19200
MSTP1MAC (AV.44)	0
▼ BACnetMSTP2	
MaxMaster (AV.159)	127
MaxInfoFrames (AV.160)	1
Network (AV.162)	4
Auto Baud Rate (BV.25)	No
Baud Rate (MV.43)	19200
MSTP2MAC (AV.45)	0
▼ BACnet IP	
Network Number (AV.30)	2
BacnetIP Port (PIV.50)	47808
▼ BACnet Ethernet	
▼ Communication	
▼ IP Settings	
DHCP Enable (BV.9)	Inactive
Reset IP Settings (BV.10)	No
StaticAddress (CSV.26)	192.168.001.125
StaticSubnetMask (CSV.27)	255.255.255.000
StaticDefaultGateway (CSV.28)	192.168.001.001
StaticDnsServer (CSV.29)	192.168.010.050
ActualAddress (CSV.30)	192.168.001.125
ActualSubnetMask (CSV.31)	255.255.255.000
ActualDefaultGateway (CSV.32)	192.168.001.001
ActualDnsServer (CSV.33)	192.168.010.050
▼ Ethernet Settings	
EthernetMacAddr (CSV.35)	00:04:A3:8E:85:16
▼ System	

Baud Rate (MV.11)	19200
MSTP1MAC (AV.44)	0
▼ BACnetMSTP2	
MaxMaster (AV.159)	127
MaxInfoFrames (AV.160)	1
Network (AV.162)	4
Auto Baud Rate (BV.25)	No
Baud Rate (MV.43)	19200
MSTP2MAC (AV.45)	0
▼ BACnet IP	
Network Number (AV.30)	2
BacnetIP Port (PIV.50)	47808
▼ BACnet Ethernet	
▼ Communication	
▼ IP Settings	
DHCP Enable (BV.9)	Inactive
Reset IP Settings (BV.10)	No
StaticAddress (CSV.26)	192.168.001.125
StaticSubnetMask (CSV.27)	255.255.255.000
StaticDefaultGateway (CSV.28)	192.168.001.001
StaticDnsServer (CSV.29)	192.168.010.050
ActualAddress (CSV.30)	192.168.001.125
ActualSubnetMask (CSV.31)	255.255.255.000
ActualDefaultGateway (CSV.32)	192.168.001.001
ActualDnsServer (CSV.33)	192.168.010.050
▼ Ethernet Settings	
EthernetMacAddr (CSV.35)	00:04:A3:8E:85:16
▼ System	
Reset Factory (BV.56)	No
UpdatePackageFile (FIL.2) No file chosen	<input type="button" value="Upload file"/> 673152
nsnf_coreProgram.2.02.202206271521	Running
BACnetServerProgram.1.07.202206141617	Running
BACnet RouterProgramRouter.1.00.202206060945	Running
WebServerProgram.3.10.202204291132	Running
DatabaseProgram.1.0.202206131404	Running
▼ Passwords	
Password Level 6 (PIV.5)	6655
Password Level 5 (PIV.6)	5544
Password Level 4 (PIV.7)	4433
Password Level 3 (PIV.8)	3322
Password Level 2 (PIV.9)	2222



Super User

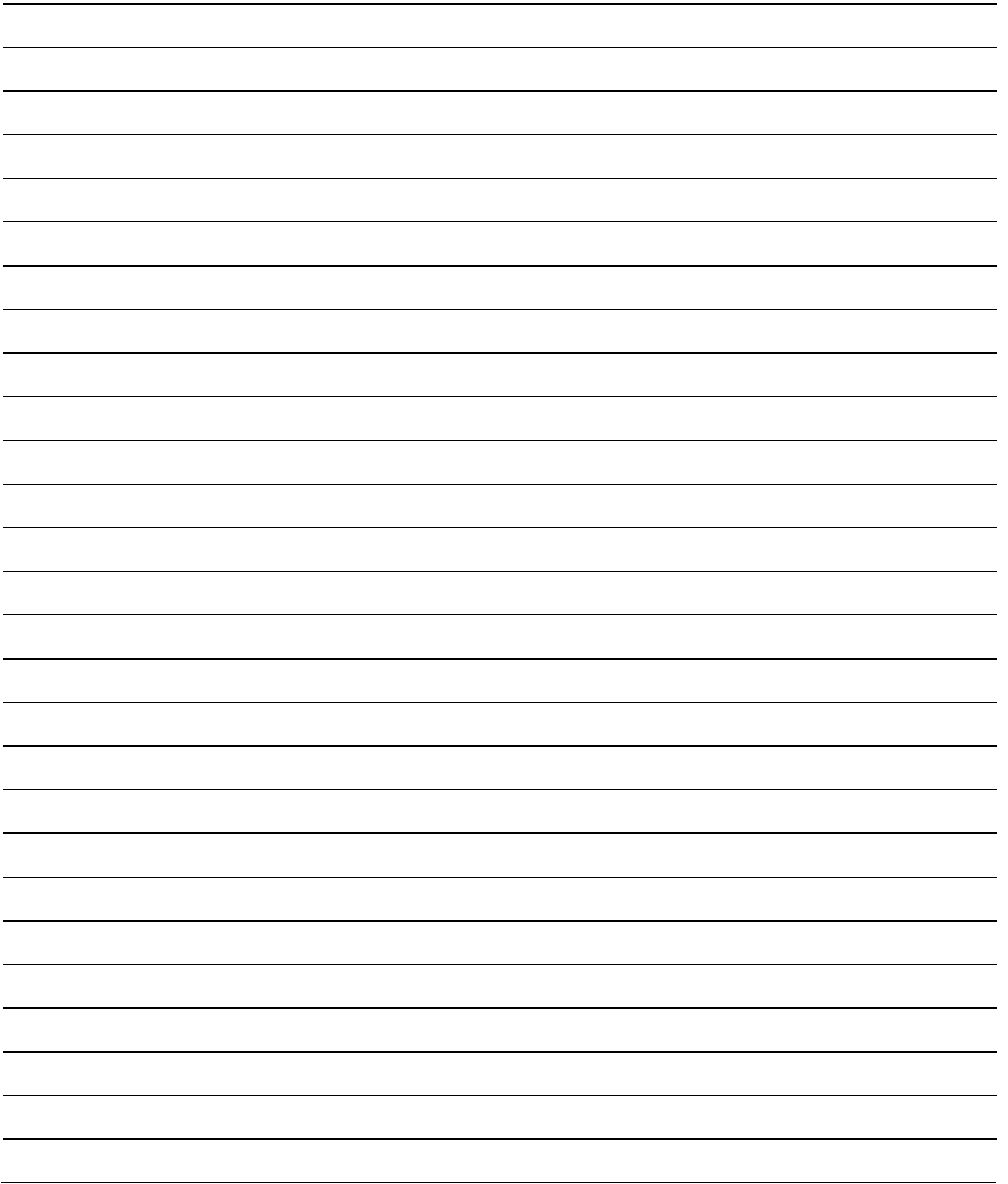
Under the **Super User** tab, information about the Diagnostic, Quick Configuration, Network and Communication settings can be accessed.

The screenshot shows the 'Super User' tab in the BACnet Router configuration tool. On the left is a 'Main Screen' sidebar with device information. The main area displays a table of configuration objects:

Object name	Present Value
Diagnostic	
System Reboot Count (AV.12)	7
System WWDG Reset (AV.13)	0
System POR Reset (AV.14)	3
System BOR Reset (AV.15)	0
System PIN Reset (AV.16)	2
System SPT Reset (AV.17)	2
System WWDG Reset (AV.18)	0
System LPW Reset (AV.19)	0
SD Mount Fail Count (AV.20)	0
USB Mount Fail Count (AV.237)	0
Memory Card (BV.3)	Ok
USB Device (BV.64)	Ok
Quick Configuration	
SystemLogVerboseLevel (MV.6)	Debug
SystemLogInterface (CSV.18)	IP1:192.168.100.100:2971
Network	
BACnetServer	
BACnetServerEventQ (PIV.26)	30
BACnetMSTP1	
IsRouting (BV.5)	Yes
BACnetMSTP2	
IsRouting (BV.24)	Yes
BACnet IP	
Is Routing (BV.7)	Yes
BACnet Ethernet	
Communication	
UART1	
BaudRate (MV.15)	19200
WordLength (MV.16)	8 bit
StopBits (MV.17)	1
Parity (MV.18)	None
UART2	
BaudRate (MV.19)	19200
WordLength (MV.20)	8 bit
StopBits (MV.21)	1
Parity (MV.22)	None
UART3	
Baudrate (MV.23)	38400
WordLength (MV.24)	8 bit
StopBit (MV.25)	1
Parity (MV.26)	None
System	
Device	

This screenshot provides a detailed view of the configuration settings:

- SystemLogInterface (CSV.18):** IP1:192.168.100.100:2971
- Network:**
 - BACnetServer
 - BACnetServerEventQ (PIV.26): 30
 - BACnetMSTP1: IsRouting (BV.5) = Yes
 - BACnetMSTP2: IsRouting (BV.24) = Yes
 - BACnet IP: Is Routing (BV.7) = Yes
 - BACnet Ethernet
- Communication:**
 - UART1: BaudRate (MV.15) = 19200, WordLength (MV.16) = 8 bit, StopBits (MV.17) = 1, Parity (MV.18) = None
 - UART2: BaudRate (MV.19) = 19200, WordLength (MV.20) = 8 bit, StopBits (MV.21) = 1, Parity (MV.22) = None
 - UART3: Baudrate (MV.23) = 38400, WordLength (MV.24) = 8 bit, StopBit (MV.25) = 1, Parity (MV.26) = None
- System:**
 - Device: VendorIdentifier (AV.1) = 153, VendorName (CSV.2) = Neptronic, ModeName (CSV.3) = BACnet Router, SerialNumber (CSV.8) = BACnetR20191120, Save Factory (BV.57) = No, Password Level 8 (PIV.3) = 8432, Password Level 7 (PIV.4) = 7654
 - Extended Configuration: ManufacturingDate (DV.1) = 2017-01-01, WarrantyRegistered (DV.3) = 2017-01-01, WarrantyActivated (DV.4) = 2017-01-01





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