

**KMC CONTROLS
BAC-5051AE
BACnet Router**



KMC CONTROLS BAC-5051AE BACnet Router Owner's Manual

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KMC CONTROLS BAC-5051AE BACnet Router



Product Information

Specifications:

- **Model:** BAC-5051AE
- **Description:** BACnet Router
- **Dimensions:** 3.16 in x 1.25 in x 5.65 in (80 mm x 32 mm x 143 mm)
- **Weight:** 5.96 in x 6.31 in x 6.00 in (151 mm x 160 mm x 152 mm)
- **Mounting:** .19 in (5 mm) DIN rail mounting, Surface mount
- **Power:** AC supply voltage, DC supply voltage, Required power 8 VA
- **Network Connections:** BACnet Ethernet and IP, Two 10/100BaseT, RJ-45 connectors, USB-A connection
- **Operating Humidity:** 0 to 95% relative humidity, non-condensing
- **Timekeeping:** BACnet time master device with options for time broadcast
- **Agency and Regulatory Approvals:** BTL UL, RoHS CE FCC

Product Usage Instructions

1. Routing Install:

Install the BAC-5051AE for BACnet IP, Ethernet, and MS/TP routing. Ensure compliance with BACnet Standard 134-2012, Annex J.

2. Browser Configuration:

Configure the BAC-5051AE using any HTML5-compliant Internet browser without the need for special software.

3. Diagnostics:

Access embedded metrics for network diagnostics including device counts, frame analysis, and error detection.

4. MS/TP Diagnostics Capture:

Troubleshoot MS/TP issues by capturing and analyzing network traffic using industry-standard .pcap files.

5. Network Learning:

The router automatically learns and configures routing for discovered networks.

6. Enable and Disable Routing:

Use the router as a diagnostic tool to monitor traffic without routing it.

7. VAV Airflow Balancing:

Utilize the router with an Internet browser as an airflow balancing tool for VAV controllers.

8. AFMS Configuration:

Set up an Airflow Measurement System (AFMS) using the router.

9. Zone Configuration:

Configure a BAC-120063CWZEC zoning Flexstat with the router.

Frequently Asked Questions (FAQ):

- **Q: What browsers are supported for configuring the BAC-5051AE?**

A: Normal configuration is supported from internally served browser pages using HTML5-compliant versions of Microsoft Internet Explorer, Chrome, or Firefox.

- **Q: Does the BAC-5051AE support timekeeping functionalities?**

A: Yes, the router can act as a BACnet time master device and maintain time with or without an SNTP server.

DESCRIPTION

The KMC Controls BAC-5051AE is a multi-port BACnet router. It is powerful enough for heavy network traffic and small enough to use as a control technician's service tool.

- **Routing** Install the BAC-5051AE for BACnet IP, Ethernet, and MS/TP routing. IP routing is fully compliant with BACnet Standard 134-2012, Annex J.
- **Browser Configuration** Configure the BAC-5051AE using only an Internet browser. There is no special software to learn or load.
- **Flexible Mounting** Two mounting choices for permanent installations—DIN rail or surface mount.
- **Diagnostics** Embedded metrics include a total number of devices, frame counts, frames in error, data frames, duplicate MAC addresses, token passing, and poll-for-master count.
- **MS/TP Diagnostics** Capture Troubleshoot MS/TP issues by capturing, saving, and analyzing network traffic. Data is saved in industry-standard .pcap files.
- **Automatically Learns Networks** Detects and configures routing for the actual discovered networks.
- **Enable and Disable Routing** Use the router as a diagnostic tool to monitor traffic without routing traffic.
- **VAV Airflow Balancing** Use an Internet browser as an airflow balancing tool for BAC-8000 and BAC-9000 series VAV controllers.
- **AFMS Configuration** Use the router to set up an Airflow Measurement System (AFMS).
- **Zone Configuration** Use the router to set up a BAC-120063CW-ZEC zoning Flexstat.

SPECIFICATIONS

Configuration Tools

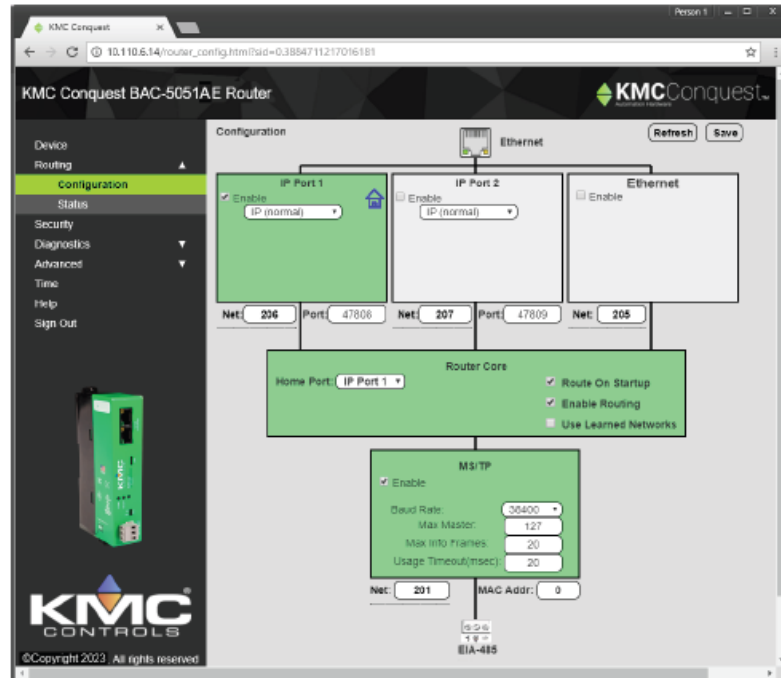
Normal configuration from internally served browser pages. Requires HTML5-compliant versions of Microsoft Internet Explorer, Chrome, or Firefox.

MODEL

DESCRIPTION	MODEL
BACnet router	BAC-5051AE

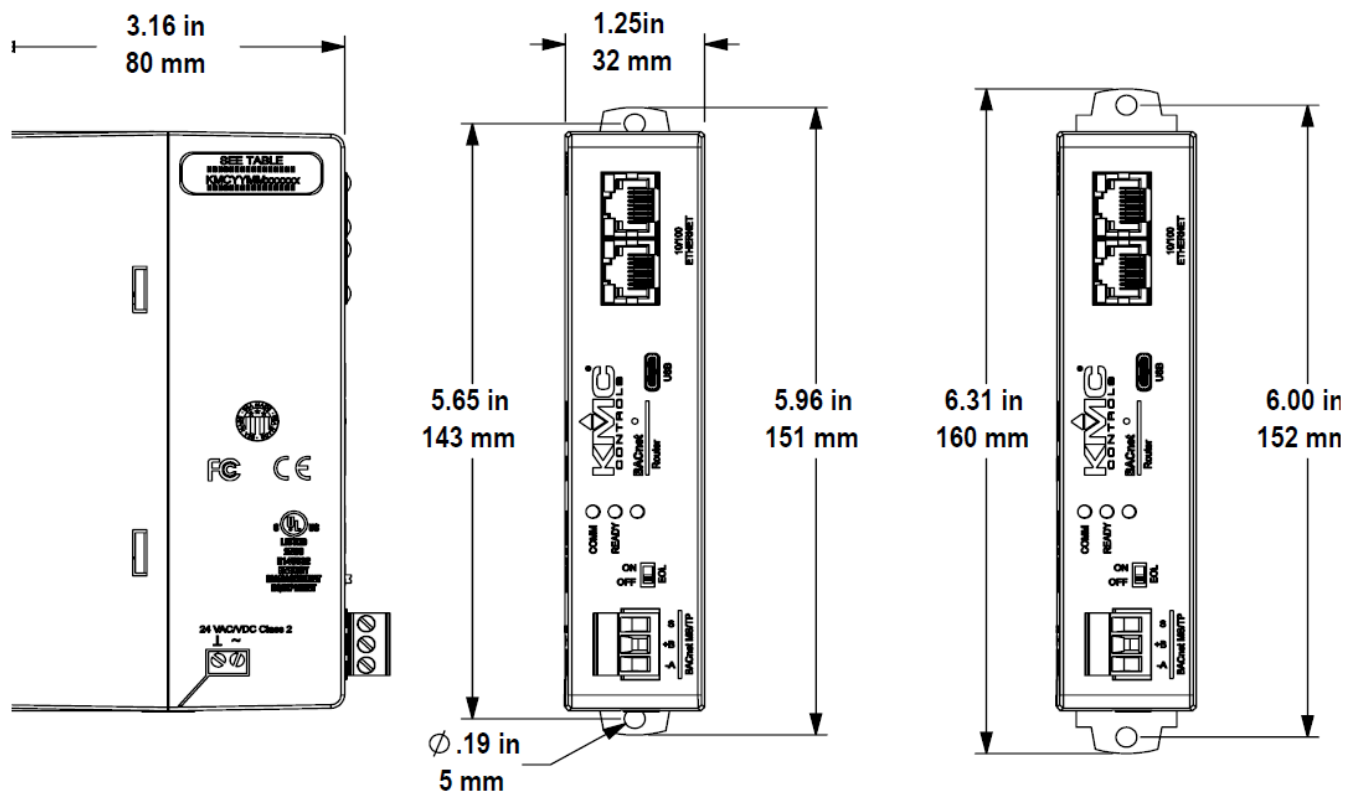
Routing Protocols

- One MS/TP network
- One BACnet Ethernet
- Two IP ports that can be set up for any of the following protocols:
 - Normal BACnet IP network routing
 - BACnet broadcast management device with network and port address translation
 - Foreign device registration with BACnet broadcast management devices (BBMD)
 - PAD (packet assembling/disassembling) routing



Router network configuration

Dimensions



35 x 7.5 mm DIN rail mounting Surface mount

Hardware Features

Processor and Memory

- Processor 32-bit ARM® Cortex-M7
- Memory Configuration parameters and diagnostics are stored in nonvolatile memory; auto restart on power failure

Indicators

- Power
- MS/TP communication
- Ethernet status

Installation

Power

- AC supply voltage
 - 24 volts AC (–15%, +20%), 50/60 Hz, Class 2 only; non-supervised
 - All circuits, including supply voltage, are power-limited circuits.
- DC supply voltage 24 volts DC (–15%, +20%) 5 volts DC through USB connection for temporary service connection
- Required power 8 VA

Enclosure and Mounting

- Weight 5.4 ounces (154 grams)
- Case material Green and black flame-retardant plastic
- Mounting Surface mount or 35 × 7.5 mm DIN rail

Environmental Limits

- Operating 32 to 120° F (0 to 49° C)
- Shipping –40 to 160° F (–40 to 71° C)
- Humidity 0 to 95% relative humidity, non-condensing

Network connections

BACnet Ethernet and IP

- Two 10/100BaseT, RJ-45 connectors

BACnet MS/TP

- One MS/TP port supports speeds from 9,600 to 115,200 baud
- Removable three-screw terminal block, 12–22 AWG wire
- Switched end-of-line termination

USB

USB A connection for power and communication to use as a service tool.

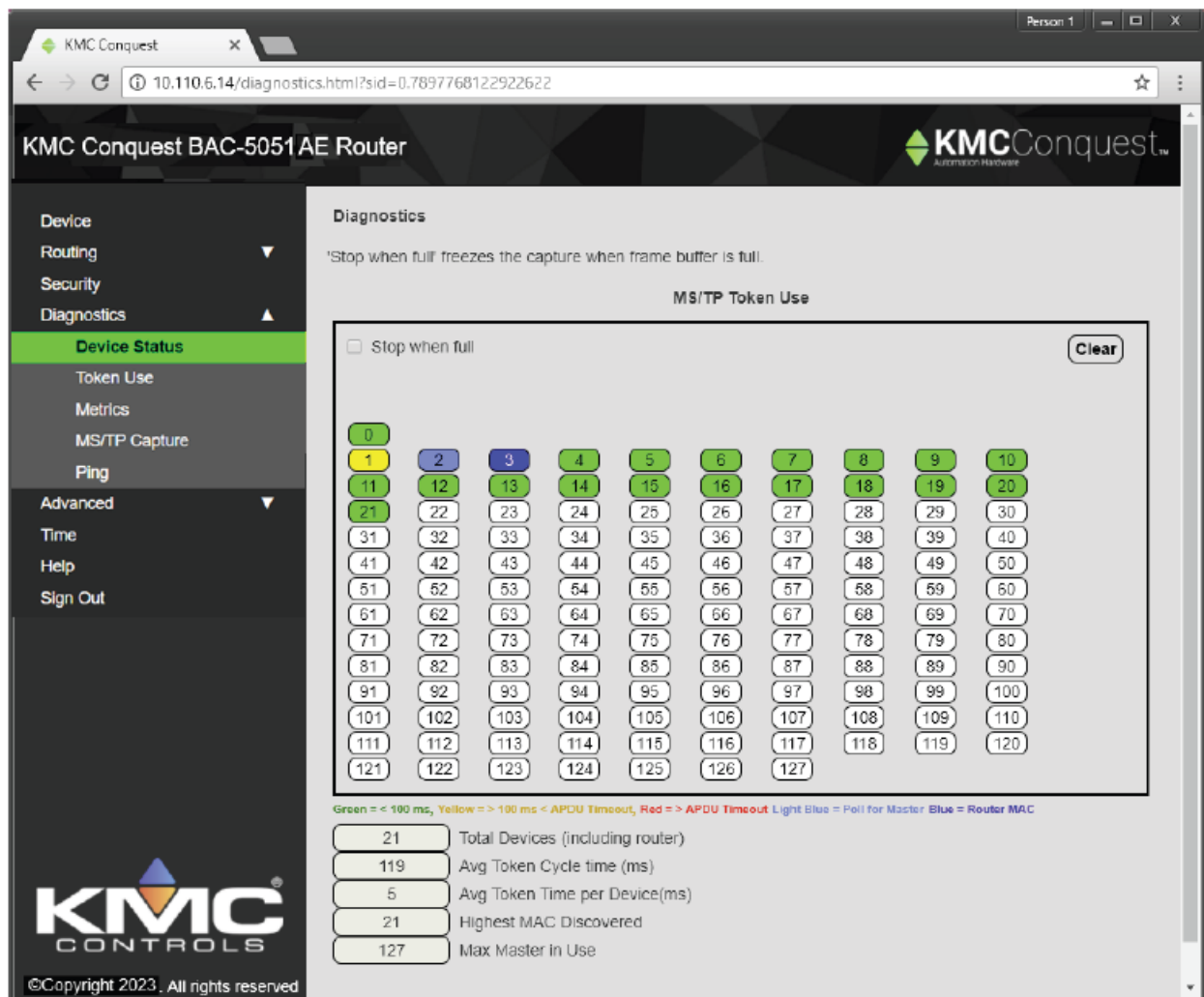
Timekeeping

The router is a BACnet time master device that can maintain time with or without an SNTP server. Time messages can be broadcast daily, weekly, or monthly to all or selected networks. Time messages are formatted as UTC, local, or both.

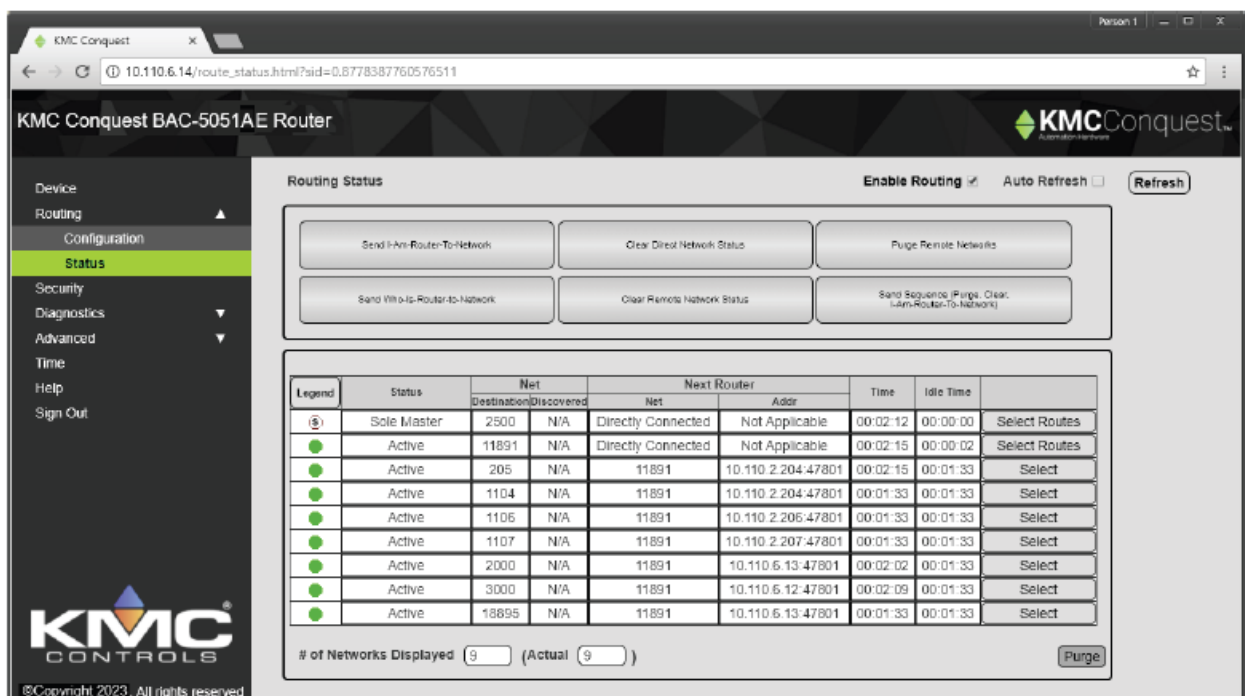
Agency and Regulatory Approvals

- BTL Pending
- UL UL 916 Energy Management Equipment
- RoHS RoHS compliant
- CE Pending
- FCC FCC Class A, Part 15, Subpart B and complies with Canadian ICES-003 Class A*

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



MS/TP network diagnostics



BACnet routing status

ACCESSORIES


- **KMD-5567** MS/TP network surge suppressor
- **XEE-6111-050** 50 VA, single-hub transformer
- **XEE-6112-050** 50 VA, dual-hub transformer
- **HSO-9001** Ethernet patch cable, 50 feet
- **HSO-9011** Ethernet patch cable, 50 feet, plenum-rated

SUPPORT

Additional resources for installation, configuration, application, operation, programming, upgrading, and much more are available on the web at www.kmccontrols.com. To see all available files, log in to the KMC Partners site.

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Documents / Resources



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BAC-5051AE, BAC-5051AE BACnet Router, BACnet Router, Router

References

- [KMC Controls | Building Automation and Control Solutions](#)
- [User Manual](#)

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