

# BAC-7401 and BAC-7401C Advanced Application Controllers for Heat Pump Units

## Description and application

The BAC-7401 and BAC-7401C are native BACnet, fully programmable, controllers designed for heat pump unit applications. Use these versatile controllers in stand-alone environments or networked to other BACnet devices. As part of a complete facilities management system, the BAC-7401 and BAC-7401C controllers provide precise monitoring and control of connected points.

- ◆ BACnet MS/TP compliant
- ◆ Automatically assigns the MAC address and the device instance
- ◆ Supplied with programming sequences for heat pump units
- ◆ Easy to install, simple to configure, and intuitive to program
- ◆ Controls compressor, fan, reversing valve and optional auxiliary heating



Still ... Made in the U.S.A.

## Specifications

### Inputs

- ◆ 4 universal inputs each of which is programmable as an analog, binary or accumulator object; accumulators limited to three in one controller
- ◆ Standard units of measure
- ◆ Pull-up resistors for switch contacts and other unpowered equipment; switch selects none or 10K ohms
- ◆ Removable screw terminal block, wire size 14-22 AWG
- ◆ 10-bit analog-to-digital conversion
- ◆ Pulse counting to 16 Hz
- ◆ 0-5 volts DC analog input range
- ◆ Overvoltage input protection
- ◆ Compatible with KMD-1160/1180 series NetSensors

### Triac Outputs,

- ◆ 4 Optically isolated triac outputs.
- ◆ Maximum switching 30 volts AC at 1 ampere
- ◆ Removable screw terminal block, wire size 14-22 AWG

### Supplied application programs

KMC Controls supplies the BAC-7401 controllers with programming sequences for heat pump units:

- ◆ Setpoints and changeover based on occupancy
- ◆ Compressor, reversing valve and fan operation
- ◆ Auxiliary heat control

### Programmable features

- ◆ 10 Control Basic program areas
- ◆ 40 analog and 40 binary value objects
- ◆ 4 PID loop objects
- ◆ Real time clock with power backup for 72 hours (BAC-7401C only)
- ◆ See PIC statement for supported BACnet objects

### Schedules

- ◆ 8 Schedule objects
- ◆ 3 Calendar object

### Alarms and events

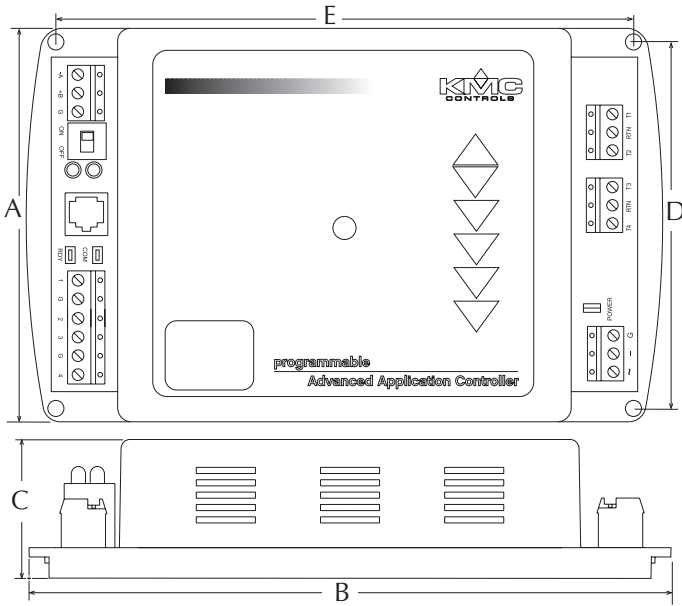
- ◆ Supports intrinsic reporting
- ◆ 8 Notification class objects

### Trends

- ◆ 8 Trend objects

## Specifications (continued)

### Dimensions



A	B	C	D	E
4.36 in.	6.79 in.	1.42 in.	4.00 in.	6.00 in.
111 mm	172 mm	36 mm	102 mm	152 mm

### Memory

- ◆ Programs and program parameters are stored in nonvolatile memory.
- ◆ Automatically restarts after a power failure.

### Communications

- ◆ MS/TP operating up to 76.8 kilobaud with automatic baud detection.
- ◆ Automatically assigns MAC addresses and device instance numbers
- ◆ NetSensor compatible through modular jack

## Installation

### Supply voltage

24 volts AC (-15%, +20%),  
50-60 Hz, 8 VA minimum,  
15 VA maximum load, Class  
2 only, non-supervised (all  
circuits, including supply  
voltage, are power limited  
circuits)

### Case material

Green and black flame  
retardant plastic

### Regulatory

- ◆ UL 916 Energy Management Equipment
- ◆ FCC Class B, Part 15, Subpart B
- ◆ BACnet Testing Laboratory listed
- ◆ CE Compliant
- ◆ SASO PCP Registration KSA R-103263

### Environmental limits

Operating	32° to 120° F (0° to 49° C)
Shipping	-40° to 140° F (-40° to 60° C)
Humidity	0 to 95% relative humidity (non-condensing)

### Software compatibility

Requires the current version of BACstage  
or TotalControl for full configuration and  
programming features.

## Accessories

### Power transformer

XEE-6111-40	Single-hub 120 volt transformer
XEE-6112-40	Dual-hub 120 volt transformer

## Models

BAC-7401C	BACnet controller with real-time clock
BAC-7401	BACnet controller without real-time clock

MS/TP automatic MAC addressing is protected  
under United States Patent Number 7,987,257.

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