



# KMC CONTROLS BAC-1x0063CW FlexStat Controllers Sensors User Guide

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**KMC CONTROLS BAC-1x0063CW FlexStat Controllers Sensors**



Use this document to facilitate FlexStat model selection according to desired applications and options. For additional specifications, see the BAC-12xxxx/13xxxx Series FlexStat Data Sheet (914-035-01). Additional award-winning resources for configuration, application, operation, programming, upgrading and much more are available on the KMC Controls web site ([www.kmccontrols.com](http://www.kmccontrols.com)). To see all available files, you will need to log-in to the KMC Partners site.

## Model Code

- **BAC-120036C** (No Optional Sensors or Communication, 3 Relays, 6 Analog Outputs, Light Almond)
- **BAC-120163CEW** (Optional Humidity Sensor, 6 Relays, 3 Analog Outputs, Optional Ethernet/ IP Communication, White)
- **BAC-121136CW** (Optional Humidity and Motion Sensors, 3 Relays, 6 Analog Outputs, White)

## Sensor Options

### Temperature (Standard)

- Internal temp. sensor standard on all models.
- Optional remote temperature sensor (connected to IN7) allows configuration for onboard (internal), remote, averaging of the two, the lowest reading, or the highest reading.

### Humidity

- BAC-1xx1xxC.
- For optional dehumidification (AHU, RTU, HPU, or 4-pipe FCU) or humidification (AHU, RTU, or 4-pipe FCU).
- Comes standard when optional CO2 sensor (BAC-13xxxxC) is ordered.

### Motion/Occupancy

- BAC-1x1xxxC.

- For optional occupancy standby and/or override.

## **CO2 with DCV (Demand Control Ventilation)**

- BAC-12xxxxC = No internal sensor, but has built-in DCV sequences and IN9 can be configured for remote CO2 sensor.
- BAC-13xxxxC = Internal sensor (with ABC Logic) for applications where concentrations will drop to outside ambient conditions at least three times in a 14 day period. The BAC-13xxxx series (only) has been certified to comply with CA Title 24, Section 121(c), as well as sub-paragraph 4.F.

**NOTE:** DCV is only available when using an AHU, RTU, or HPU application with a modulating economizer option enabled. For additional important information about the CO2 sensors and DCV, see the FlexStat Data Sheet and FlexStat Operation Guide!

## **Application Options**

- Supported AHU, FCU, HPU, and RTU options depend on whether the FlexStat is a BAC- 1xxx36C (3 relays and 6 analog outputs) or a BAC-1xxx63C (6 relays and 3 analog outputs).
- See Applications and Models on page 4.



## **BACnet Network Communication Options**

### **MS/TP (Standard)**

- Integral peer-to-peer BACnet MS/TP LAN network communications standard on all models, including those with Ethernet/IP option.
- Screw terminal blocks accept twisted-pair wire size 14–22 AWG, and a data port on the underside of the case enables easy temporary computer connection to the BACnet network (access with a KMD-5624 cable—requires use of KMD- 5576 or third-party interface).

### **IP/Ethernet**

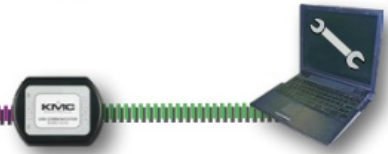
- BAC-1xxxxxCE.
- “E” versions add BACnet over Ethernet, BACnet over IP, and BACnet over IP as Foreign Device.
- “E” versions add RJ-45 jack for Ethernet cable.



**MS/TP or IP/Ethernet Communication with Other BACnet Network Devices and Remote Monitoring**



**Quick (Temporary) Network Access (MS/TP) Through Computer Data Port**



## Color Options

### White (Standard)

- BAC-1xxxxxCW.
- Standard on all models.



### Light Almond

- BAC-1xxxxxC (W removed).
- Optional on all models.



## Applications and Models

Applications and Options		
	6 Relays and 3 Analog Outputs	
	BAC-1x0063CW	BAC-1x0163CW
<b>Packaged Unit (Air Handling Unit and Roof Top Unit)</b>		
1 Heat and 1 Cool		
1 or 2 Heat and 1 or 2 Cool	In all BAC-1xxx63 models, bu	
1 or 2 Heat and Modulating Cool		
Modulating Heat and 1 or 2 Cool		
Modulating Heat and Modulating Cool	In all BAC-1xxx63 models, bu	
Optional Outside Air Damper, Modulating	✓	✓
Optional Outside Air Damper, 2 Position	In all BAC-1xxx63 models, bu	
Optional Fan Speed Control		
Optional Dehumidification (with Humidity Sensor)		✓
Optional Humidifier (with Humidity Sensor)		
Optional Motion/Occupancy Sensor		
Optional CO <sub>2</sub> Sensor with DCV (Demand Control Ventilation)		
Optional IP/Ethernet BACnet Communications		
<b>FCU (Fan Coil Unit)</b>		
2 Pipe, Modulating	✓	✓
2 Pipe, 2 Position	✓	✓
4 Pipe, Modulating	✓	✓
4 Pipe, 2 Position	✓	✓
Optional Dehumidification (4 pipe only)		✓
Optional Humidifier (4 pipe only)		
Optional Motion/Occupancy Sensor		
Optional CO <sub>2</sub> Sensor with DCV (Demand Control Ventilation)		
Optional IP/Ethernet BACnet Communications		
<b>HPU (Heat Pump Unit)</b>	1 or 2 compressors with au	
Optional Outside Air Damper, Modulating	✓	✓
Optional Dehumidification		✓
Optional Motion/Occupancy Sensor		
Optional CO <sub>2</sub> Sensor with DCV (Demand Control Ventilation)		
Optional IP/Ethernet BACnet Communications		

KMC Controls FlexStat Models and Outputs					
		3 Relays and 6 Analog Outputs			
BAC-1x1063CW	BAC-1x1163CW	BAC-1x0036CW	BAC-1x0136CW	BAC-1x1036CW	BAC-1x1136CW
		✓	✓	✓	✓
t appears in RTU menu only					
		✓	✓	✓	✓
		✓	✓	✓	✓
t appears in AHU menu only		✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
t appears in RTU menu only		✓	✓	✓	✓
		✓	✓	✓	✓
	✓		✓		✓
			✓		✓
✓	✓			✓	✓
BAC-13xxxx; BAC-12xxxx has no CO <sub>2</sub> sensor					
Add an E to the model number: BAC-1xxxxCEx (see <a href="#">Model Code on page 2</a> )					
With 3-speed fan		With 3-speed fan			
✓	✓	✓	✓	✓	✓
✓	✓				
✓	✓	✓	✓	✓	✓
✓	✓				
	✓		✓		✓
			✓		✓
✓	✓			✓	✓
DCV (Demand Control Ventilation) N/A for FCU Applications (but sensor will still show CO <sub>2</sub> levels)					
Add an E to the model number: BAC-1xxxxCEx (see <a href="#">Model Code on page 2</a> )					
Auxiliary and emergency heat					
✓	✓	N/A			
	✓				
✓	✓				
BAC-13xxxx; BAC-12xxxx has no CO <sub>2</sub> sensor					
Add an E to the model number: BAC-1xxxxCEx (see <a href="#">Model Code on page 2</a> )					

## Model Chart

For additional specifications, see the BAC- 12xxxx/13xxxx Series FlexStat Data Sheet (914- 035-01).

**NOTE:** For specifications on the older BAC-10000 Series FlexStats (with only three external inputs and no Ethernet or CO<sub>2</sub> options), see the data sheet (913- 035-01) for that series.



FlexStats come with a printed Installation Guide. Additional award-winning resources for configuration, application, operation, programming, upgrading, and much more are available on the KMC Controls web site

([www.kmccontrols.com](http://www.kmccontrols.com)). To see all available files, you will need to log-in to the KMC Partners site.

## Accessories

### Damper (OAD/RTD) Actuators (Fail-Safe)

- **MEP-7552** 22.5 ft<sup>2</sup> max. damper area, 180 in-lb., 0–10 VDC, 25 VA
- **MEP-7852** 40 ft<sup>2</sup> max. damper area, 320 in-lb., 0–10 VDC, 40 VA



### Mounting Hardware

- **HMO-10000** Horizontal or 4 x 4 handy box wall mounting plate for BAC- 12xxxx models (not needed for BAC- 13xxxx models), light almond (shown)
- **HMO-10000W** HMO-10000 in white
- **SP-001** Screwdriver (KMC branded) with flat blade (for terminals) and hex end (for cover screws)



### Network Communications and Firmware

- **HTO-1104** FlexStat firmware upgrade kit
- **KMD-5567** Network surge suppressor



- **KMD-5575** Network repeater/ isolator
- **KMD-5624** PC data port (EIA-485) cable (FlexStat to USB Communicator)— included with the KMD-5576 (buy for third-party EIA- 232 interfaces)



### Relays (External)

- **REE-3112** (HUM) SPDT, 12/24 VDC control relay

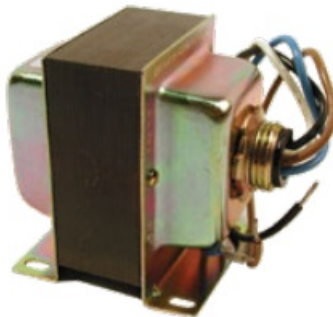
### Sensors (External)

- **CSE-110x** (FST) differential air pressure switch
- **STE-1402** (DAT) duct temperature sensor with 8-inch rigid probe
- **STE-1416** (MAT) flexible 12-foot duct averaging temp. sensor
- **STE-1451** (OAT) outside air temp. sensor
- **STE-6011** Remote space temp. sensor
- **SAE-10xx** Remote CO2 sensor, space or duct
- **STE-1454/1455** (W-TMP) 2-inch strap-on water temp. sensor (with or without enclosure)





**Transformers, 120 (or more) to 24 VAC (TX)**



- **XEE-6111-040** 40 VA, single-hub
- **XEE-6112-040** 40 VA, dual-hub
- **XEE-6311-050** 50 VA, dual-hub
- **XEE-6311-075** 75 VA, single-hub
- **XEE-6311-100** 96 VA, dual-hub

**Valves (Heating/Cooling/Humidification)**



- **VEB-43xxxBCL** (HUMV/CLV/HTV) Fail-safe control valve, w/ MEP-4×52 proportional actuator, 20 VA
- **VEB-43xxxBCK** (VLV/CLV/HTV) control valve w/ MEP-4002 proportional actuator, 4 VA
- **VEZ-4xxxxMBx** (VLV/CLV/HTV) **failsafe** control valve, 24 VAC, 9.8 VA

**NOTE:** For details, see the respective product data sheets and installation guides. See also the FlexStat Application Guide.

19476 Industrial Drive New Paris, IN 46553, U.S.A. [www.kmccontrols.com](http://www.kmccontrols.com) [info@kmccontrols.com](mailto:info@kmccontrols.com)

#### To Order:

- **Telephone:** 877.444.5622 (574.831.5250)
- **Fax:** 574.831.5252



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#### Documents / Resources



[KMC CONTROLS BAC-1x0063CW FlexStat Controllers Sensors](#) [pdf] User Guide  
BAC-1x0063CW FlexStat Controllers Sensors, BAC-1x0063CW, FlexStat Controllers Sensors,  
Controllers Sensors, Sensors

#### References

- [tols.com](https://tols.com)
- [KMC Controls | Building Automation and Control Solutions](#)

Manuals+.