

FlexStat™ Catalog Supplement and Selection Guide

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Use this document to facilitate FlexStat model selection according to desired applications and options. For additional specifications, see the [BAC-12xxxx/13xxxx/14xxxx 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). To see all available files, you will need to log-in to the KMC Partners site.

Model Code

BAC-1xmhraCEW:									
BAC-	1	x	m	h	r	a	C	E	W
BACnet Device	Model Series	CO ₂ Sensor Type*	Motion Sensor	Humidity Sensor	Number of Relay Outputs	Number of Analog Outputs	Real-Time Clock	IP/Ethernet Communication	Case Color
		2 = None	1 = Included	1 = Included	3	3	RTC standard on all models	E = Included	W = White
		3 = Zones with Unoccupied Periods	0 = None	0 = None	6	6		No E = MS/TP only	No W = Light Almond
		4 = Zones with Continuous Occupancy	(See Sensor Options on page 3)		(See Application Options on page 3 and Applications and Models on page 4)			(See BACnet Network Communication Options on page 3)	(See Color Options on page 3)

*In models with CO₂ sensors, humidity sensors come standard. See [Sensor Options on page 3](#) for details about the two types of CO₂ sensors.



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)



BAC-141163CW
(Optional CO₂ Sensor for Continuous Occupancy Zone, Optional Humidity and Motion Sensors, 6 Relays, 3 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 or BAC-14xxxxC) 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.
- ◆ BAC-14xxxxC = Internal dual-channel sensor for locations with continuous occupancy.

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 types of 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 (Master-Slave/Token-Passing) 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

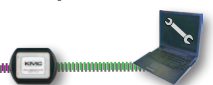
- ◆ BAC-1xxxxxC.
- ◆ “E” versions add BACnet over Ethernet, BACnet over IP, and BACnet over IP as Foreign Device.
- ◆ “E” versions add RJ-45 jack for Ethernet cable.



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 Options		
	6 Relays and 3 Analog Outputs	
	BAC-1x0063CW	BAC-1x0163CW
Packaged Unit (Air Handling Unit and Roof Top Unit)		
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 CO2 Sensor with DCV (Demand Control Ventilation)		
Optional IP/Ethernet BACnet Communications		
FCU (Fan Coil Unit)		
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 CO2 Sensor with DCV (Demand Control Ventilation)		
Optional IP/Ethernet BACnet Communications		
HPU (Heat Pump Unit)	1 or 2 compressors with au	
Optional Outside Air Damper, Modulating	✓	✓
Optional Dehumidification		✓
Optional Motion/Occupancy Sensor		
Optional CO2 Sensor with DCV (Demand Control Ventilation)		
Optional IP/Ethernet BACnet Communications		

Examples

Requirements: AHU, modulating outside air damper, fan speed control, motion sensor, white = BAC-121036CW

KMC Controls FlexStat Models and Outputs

		3 Relays and 6 Analog Outputs			
BAC-1x1063CW	BAC-1x1163CW	BAC-1x0036CW	BAC-1x0136CW	BAC-1x1036CW	BAC-1x1136CW
		✓	✓	✓	✓
ut appears in RTU menu only					
		✓	✓	✓	✓
		✓	✓	✓	✓
ut appears in AHU menu only		✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
ut appears in RTU menu only		✓	✓	✓	✓
		✓	✓	✓	✓
	✓		✓		✓
			✓		✓
✓	✓			✓	✓
BAC-13xxxx or BAC-14xxxx (see <i>Sensor Options on page 3</i>); BAC-12xxxx has no CO ₂ sensor					
Add an E to the model number: BAC-1xxxxxCEx (see <i>Model Code on page 2</i>)					
With 3-speed fan		With 3-speed fan			
✓	✓	✓	✓	✓	✓
✓	✓				
✓	✓	✓	✓	✓	✓
✓	✓				
	✓		✓		✓
			✓		✓
✓	✓			✓	✓
DCV (Demand Control Ventilation) N/A for FCU Applications (but sensor will still show CO ₂ levels)					
Add an E to the model number: BAC-1xxxxxCEx (see <i>Model Code on page 2</i>)					
xiliary and emergency heat					
✓	✓	N/A			
	✓				
✓	✓				
BAC-13xxxx or BAC-14xxxx (see <i>Sensor Options on page 3</i>); BAC-12xxxx has no CO ₂ sensor					
Add an E to the model number: BAC-1xxxxxCEx (see <i>Model Code on page 2</i>)					

Requirements: FCU, dehumidification, motion sensor, almond = BAC-121163C or BAC-121136C

Requirements: HPU, DCV in continuous occupancy, IP communications, white = BAC-140063CEW

Model Chart

Model*	Outputs**	Optional Sensors***	Typical Applications
BAC-12xxxx models (e.g., BAC-120036CW) are standard and do not have a CO ₂ sensor. BAC-13xxxx/14xxxx models (e.g., BAC-140036CW) have CO ₂ sensors to add Demand Control Ventilation to the applications below. DCV is only available when using an AHU, RTU, or HPU application with a modulating economizer option enabled.			
BAC-1x0036CW	3 Relays and 6 Analog Outputs	None	<ul style="list-style-type: none">• 1H/1C, fan, and 6 analog outputs• 3-speed fan, 2- or 4-pipe FCUs with modulating valves• Central station AHUs with modulating/1/2 Heat/Cool• Variable-speed fan output• Single-stage applications
BAC-1x0136CW		Humidity****	<ul style="list-style-type: none">• Same as BAC-1x0036CW• Dehumidification sequence• Humidification sequence (AHU or 4-pipe FCU)
BAC-1x1036CW		Motion/Occupancy	<ul style="list-style-type: none">• Same as BAC-1x0036CW• Occupancy-based operation
BAC-1x1136CW		Humidity and Motion/Occupancy****	<ul style="list-style-type: none">• Same as BAC-1x0136CW• Occupancy-based operation
BAC-1x0063CW	6 Relays and 3 Analog Outputs	None	<ul style="list-style-type: none">• 1 or 2 H and 1 or 2 C, fan• Multi-stage packaged or split systems• Multi-stage heat pumps with or without factory-packaged economizers• Central station AHUs with modulating Heat/Cool• 3-speed fan, 2- or 4-pipe FCUs with modulating or 2-position valves
BAC-1x0163CW		Humidity****	<ul style="list-style-type: none">• Same as BAC-1x0063CW• Dehumidification sequence (AHU, 4-pipe FCU, or RTU)
BAC-1x1063CW		Motion/Occupancy	<ul style="list-style-type: none">• Same as BAC-1x0063CW• Occupancy-based operation
BAC-1x1163CW		Humidity and Motion/Occupancy****	<ul style="list-style-type: none">• Same as BAC-1x0163CW• Occupancy-based operation
<p>*The standard color is white. To order the optional light almond color, remove the “W” at the end of the model number (e.g., BAC-121163C instead of BAC-121163CW). To order the IP version, add an E after the C (e.g., BAC-121163CEW). All models have a real-time clock.</p> <p>**Analog outputs produce 0–12 VDC @ 20 mA maximum, and relays carry 1 A max. per relay or 1.5 A per bank of 3 relays (relays 1–3 or 4–6) @ 24 VAC/VDC.</p> <p>***All models have a 32-bit processor, an internal temperature sensor, and 6 analog inputs. All models have optional discharge air temperature monitoring/trending and fan status monitoring. Optional sensors include humidity, motion, and CO₂.</p> <p>****In models with CO₂ sensors, humidity sensors come standard.</p>			

For additional specifications, see the **BAC-12xxxx/13xxxx/14xxxx 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 CO₂ 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.kmcccontrols.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-5372	6.25 ft ² max. damper area, 50 in-lb., 2–10 VDC, 19 VA
MEP-7252	15 ft ² max. damper area, 120 in-lb., 0–10 VDC, 25 VA
MEP-7552	22.5 ft ² max. damper area, 180 in-lb., 0–10 VDC, 25 VA
MEP-7852	40 ft ² 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/14xxxx 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-1103	FlexStat firmware upgrade and BAC-14xxxx CO ₂ calibration adapter kit
KMD-5567	Network surge suppressor
KMD-5575	Network repeater/isolator
KMD-5576	EIA-485 to USB Communicator
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-3211	(R1/R2/R3) SPDT, multi-voltage control relay, 1.2 VA
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 CO ₂ 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-43xxxBDL	(HUMV/CLV/HTV) Fail-safe control valve, with MEP-5372 2–10 VDC actuator, 19 VA
VEB-43xxxBCK	(VLV/CLV/HTV) control valve with MEP-4002 0–10V actuator, 4 VA
VEZ-4xxxxMBx	(VLV/CLV/HTV) fail-safe zone 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](#).



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