KMC CONTROLS



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 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-1*xmhra*CEW:

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

*In models with CO_2 sensors, humidity sensors come standard.



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-1xx**1**xxC.
- For optional dehumidification (AHU, RTU, HPU, or 4-pipe FCU) or humidification (AHU, RTU, or 4-pipe FCU).
- Comes standard when optional CO_2 sensor (BAC-13xxxxC) is ordered.

Motion/Occupancy

- BAC-1x**1**xxxC.
- For optional occupancy standby and/or override.

CO_2 with DCV (Demand Control Ventilation)

- BAC-1**2**xxxxC = No internal sensor, but has built-in DCV sequences and IN9 can be configured for remote CO_2 sensor.
- BAC-1**3**xxxxC = 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 CO_2 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-1xxx**36**C (3 relays and 6 analog outputs) or a BAC-1xxx**63**C (6 relays and 3 analog outputs).
- See *Applications and Models on page 4*.



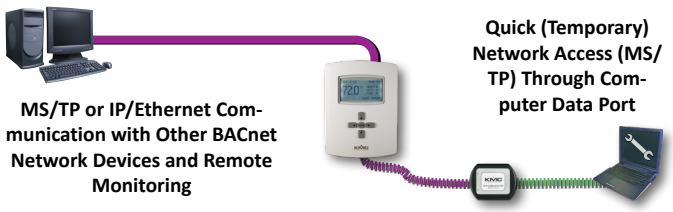
BACnet Network Communication Options

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-1xxxxxC**E**.
- "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.



Color Options

White (Standard)

- BAC-1xxxxxC**W**.
- 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**
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 CO_2 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 CO_2 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 CO_2 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**
		✓	✓	✓	✓
ut appears in **RTU** menu only					
		✓	✓	✓	✓
		✓	✓	✓	✓
t appears in **AHU** menu only		✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
ut appears in **RTU** menu only		✓	✓	✓	✓
		✓	✓	✓	✓
	✓		✓		✓
			✓		✓
✓	✓			✓	✓
BAC-1**3**xxxx; BAC-1**2**xxxx has no CO_2 sensor					
Add an E to the model number: BAC-1xxxxxC**E**x (see ***Model Code on page 2***)					
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-1xxxxxC**E**x (see ***Model Code on page 2***)					
xiliary and emergency heat					
✓	✓	N/A			
	✓				
✓	✓				
BAC-1**3**xxxx; BAC-1**2**xxxx has no CO_2 sensor					
Add an E to the model number: BAC-1xxxxxC**E**x (see ***Model Code on page 2***)					

Feedback? Give yours here.

Model Chart

Model*	Outputs**	Optional Sensors***	Typical Applications
BAC-1**2**xxxx models (e.g., BAC-120036CW) are standard and do not have a CO_2 sensor. BAC-1**3**xxxx models (e.g., BAC-130036CW) 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	• 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****	• Same as BAC-1x0036CW • Dehumidification sequence • Humidification sequence (AHU or 4-pipe FCU)
BAC-1x1036CW		Motion/Occupancy	• Same as BAC-1x0036CW • Occupancy-based operation
BAC-1x1136CW		Humidity and Motion/Occupancy****	• Same as BAC-1x0136CW • Occupancy-based operation
BAC-1x0063CW	6 Relays and 3 Analog Outputs	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****	• Same as BAC-1x0063CW • Dehumidification sequence (AHU, 4-pipe FCU, or RTU)
BAC-1x1063CW		Motion/Occupancy	• Same as BAC-1x0063CW • Occupancy-based operation
BAC-1x1163CW		Humidity and Motion/Occupancy****	• Same as BAC-1x0163CW • Occupancy-based operation

***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-121163C**W**). **To order the IP version**, add an E after the C (e.g., BAC-121163C**EW**)**.** All models have a real-time clock.

****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.

*****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 CO_2.

******In models with CO_2 sensors, humidity sensors come standard.

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_2 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**). 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 ft² max. damper area, 180 in-lb., 0–10 VDC, 25 VA
MEP-7852	40 ft² 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 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-43xxxBCL	(HUMV/CLV/HTV) Fail-safe control valve, w/ MEP-4x52 proproportional actuator, 20 VA
VEB-43xxxBCK	(VLV/CLV/HTV) control valve w/ MEP-4002 proportional actuator, 4 VA
VEZ-4xxxxMBx	(VLV/CLV/HTV) fail-safe 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**.

Feedback? Give yours here.

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