Description and Application

This model of FlexStat provides an easy, flexible solution for controlling unitary equipment and up to 16 associated Variable Air Volume (VAV) zones. Controlled equipment types include packaged Roof Top Units (RTUs), Heat Pump Units (HPUs), commercial split systems, and other similar unitary equipment. It is a powerful but simple solution for either retrofitting older VVT-type systems or installing new light-commercial zoning systems.

The BAC-120063CW-ZEC automatically switches between heating and cooling control based on local zone demands. It automatically discovers and communicates with up to 16 associated **SimplyVAV** controllers via the integral BACnet MS/TP network to provide integration of the entire system. The SimplyVAV controllers, along with SSS-1000 series flow sensors, provide pressure-independent VAV control in their respective zones. (See *Sample Installation on page 3*.)

The BAC-120063CW-ZEC can also provide a static pressure setpoint signal to an optional **CSP-4702** pressure controller used with the system for pressure bypass control.

With no software required, the BAC-120063CW-ZEC is quick and user-friendly to install and configure. Yet it also communicates with any Building Automation System using a BACnet network for monitoring and additional control options.

It comes preconfigured for a 2H/2C RTU and zone device number range of 1000001 through 1000016, and if this describes your equipment, the occupancy schedule is the only required configuration needed after mounting and wiring. Scheduling is easily set up in the BAC-120063CW-ZEC's on-screen menu system.

Features

Interface and Function

◆ Built-in, factory-tested zoning application control sequence and trend logs

◆ Schedules can easily be set uniquely by the entire week (Mon.–Sun.), weekdays (Mon.–Fri.), weekend (Sat.–Sun.), individual days, and/or holidays; six On/Off periods with independent heating and cooling setpoint are available per scheduled day

◆ User-friendly English-language menus (no obscure numeric codes) on a 64 x 128 pixel, dot-matrix LCD display with 5 buttons for data selection and entry

◆ Multiple display options include degrees Fahrenheit/Celsius DAT temperature selection

◆ Three levels of password-protected access (user/operator/administrator) prevent disruption of operation and configuration

◆ A 72-hour power (capacitor) backup and a real time clock for network time synchronization or full stand alone operation

Inputs

◆ Analog inputs for DAT and static pressure feedback

◆ Input overvoltage protection (24 VAC, continuous)

◆ 12-bit analog-to-digital conversion on inputs

Outputs

♦ Analog outputs for optional static pressure setpoint, optional heating/cooling coil valve, and optional outside air damper (see the **BAC-120063CW-ZEC Installation and Configuration Guide** for details)

♦ Six binary outputs (relays) for equipment control

♦ The NO, SPST (Form "A") relays are rated for 1 A max. per relay or 1.5 A per bank of 3 relays (relays 1–3 and 4–6) @ 24 VAC/VDC

Installation

♦ Backplate mounts on a standard vertical 2 x 4 inch wall handy-box (or, with an HMO-10000W adapter, a horizontal or 4 x 4 handy-box), and the cover is secured to the backplate by two concealed hex screws

♦ Two-piece design allows field rough-in and termination of field wiring to the backplate without needing the FlexStat at the site—permitting FlexStats to be bulk-configured off-site and plugged into the wired backplates at a later time if desired (see *Dimensions and Connectors on page 2*)
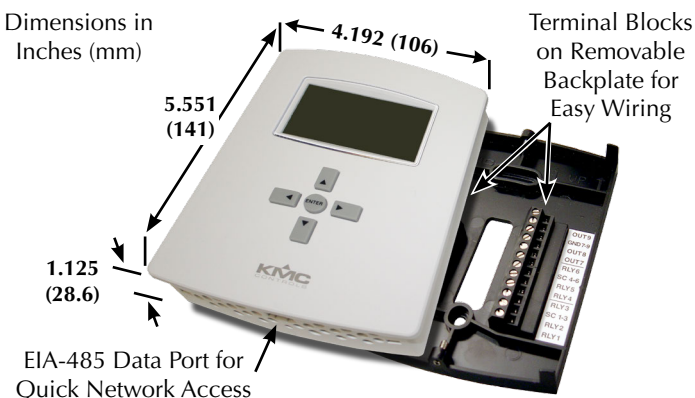
Connections

♦ Screw terminal blocks, wire size 14–22 AWG, for inputs, outputs, power, and MS/TP network

♦ A four-pin EIA-485 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)

BACnet Communication and Standards

♦ Integral peer-to-peer BACnet MS/TP LAN network communications on all models (with configurable baud rate from 9600 to 76.8K baud)

♦ Meets or exceeds BACnet AAC specifications in the ANSI/ASHRAE BACnet Standard 135-2008

Dimensions and Connectors


Dimensions in Inches (mm)

4.192 (106)

5.551 (141)

1.125 (28.6)

Terminal Blocks on Removable Backplate for Easy Wiring

EIA-485 Data Port for Quick Network Access

Specifications

Supply Voltage	24 VAC (+20%/–10%), Class 2 only
Supply Power	13 VA (not including relays)
Outputs	Binary outputs (NO, SPST, Form "A" relays) carry **1 A** max. per relay **or** a total of **1.5 A per bank** of 3 relays (relays 1–3 and 4–6) @ 24 VAC/VDC
	Analog outputs produce 0–12 VDC, 20 mA maximum
External Inputs (6)	Analog 0–12 VDC (active, passive contacts, 10K thermistors)
Connections	Wire clamp type terminal blocks; 14–22 AWG, copper
	Four-pin EIA-485
Display	64 x 128 pixel dot matrix LCD
Case Material	White flame-retardant plastic
Dimensions	5.551 x 4.192 x 1.125 inches (141 x 106 x 28.6 mm)
Weight	0.48 lbs. (0.22 kg)
Warranty	5 years (from mfg. date code)

Environmental Limits

Operating	34 to 125° F (1.1 to 51.6° C)
Shipping	–22 to 140° F (–30 to 60° C)
Humidity	0 to 95% RH (non-condensing)

Approvals

UL	UL 916 Energy Management Equipment listed
BTL	BACnet Testing Laboratory listed as Advanced Application Controller (B-AAC)
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.
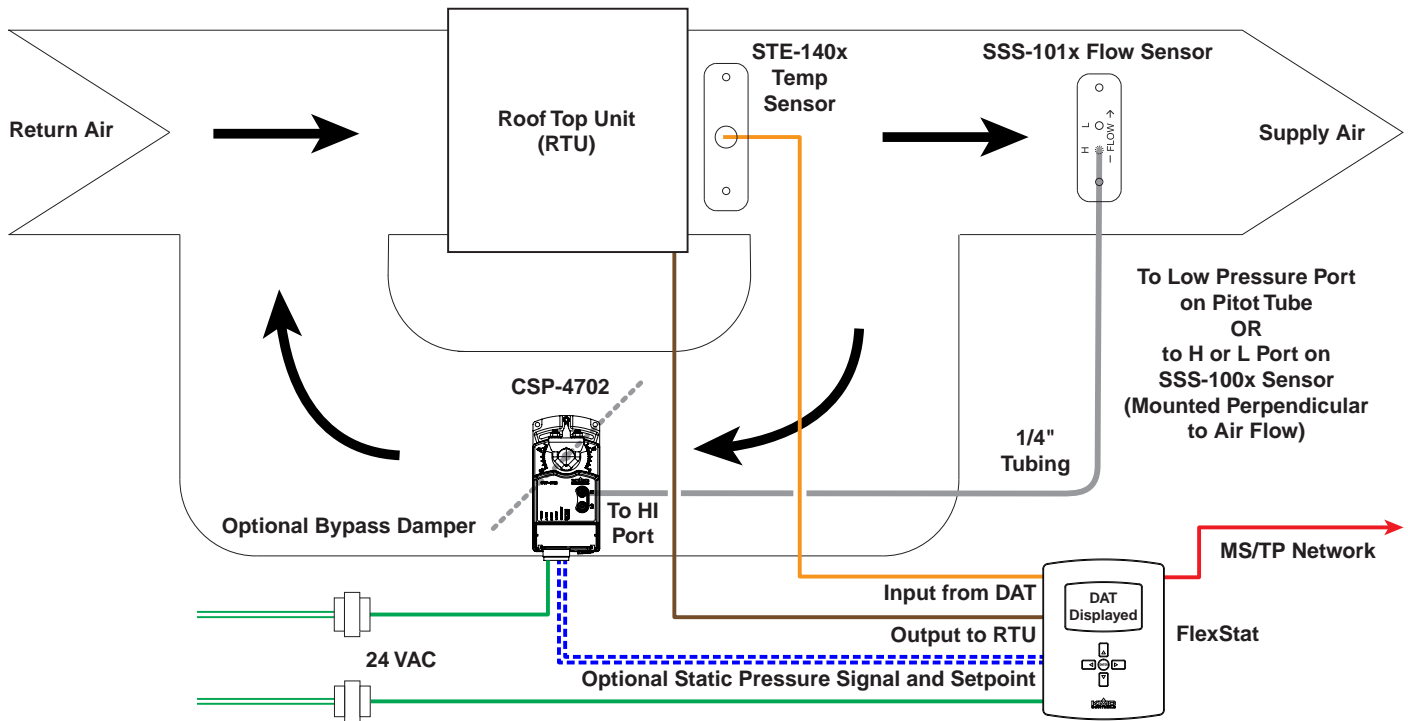
RTU (with Optional Bypass) Control
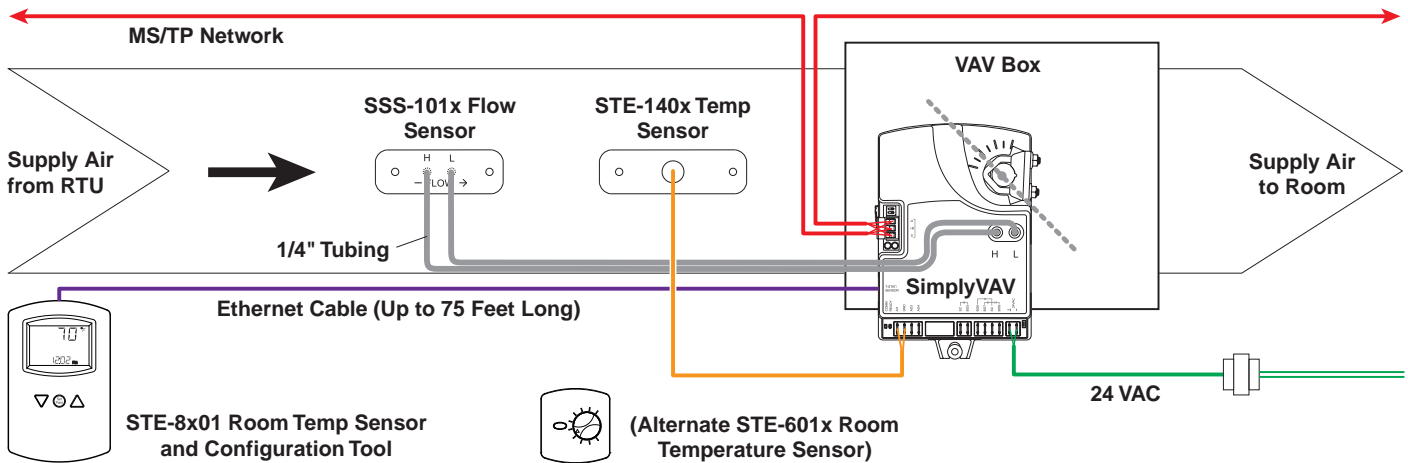
Typical VAV Zone (1 of up to 16)

NOTE: For more information about applications, mounting, wiring, configuration, and operation, see the **BAC-120063CW-ZEC FlexStat Installation Guide**. (See also *Accessories on page 4*.)

NOTE: See also complete information about the analog **CSP-4702** VAV/bypass controller-actuator and digital **SimplyVAV BAC-8001/8005/8205** VAV controller-actuators.

Accessories

Bypass Control (Optional)

CSP-4702	Analog differential-pressure VAV controller/actuator
SSS-101x	Static pressure sensor

DAT (Discharge Air Temperature) Sensor

STE-140x	Duct temperature sensor with rigid probe

Mounting Hardware

HMO-10000W	Horizontal or 4 x 4 handy box wall mounting plate
HPO-1602	Replacement backplate
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 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)

Transformer, 24 VAC

XEE-6111-050	120 to 24 VAC, 50 VA, single-hub
XEE-6112-050	120 to 24 VAC 50 VA, dual-hub
XEE-6311-050	120/240/277/480 to 24 VAC 50 VA, dual-hub

VAV Control (on Network)

SimplyVAV	BAC-8001/8005/8205 VAV controller/actuator
NOTE:	For details, see the respective product data sheets and installation guides. See also the **FlexStat Catalog Supplement and Selection Guide**.

Awards and Support

The FlexStat line won these awards:

◆ Gold medal in the Networked/BAS category of *Consulting-Specifying Engineer* magazine's Product of the Year competition (September 2010)

◆ Editors' Choice product in *Commercial Building Products* (October 2010)

◆ Winner in the HVAC & Plumbing category of *Green Thinker Network's* Sustainability 2012 competition (April 2012)

◆ FlexStat support documents also won an Award of Merit in the 2009–2010 publications competition sponsored by the Chicago Chapter of the Society for Technical Communication (April 2010) The **FlexStat Catalog Supplement and Selection Guide** was one of five **KMC catalogs and supplements** that, as a collection, won two awards from the Society for Technical Communication in 2013.

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, log-in to the **KMC Partners site**.

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