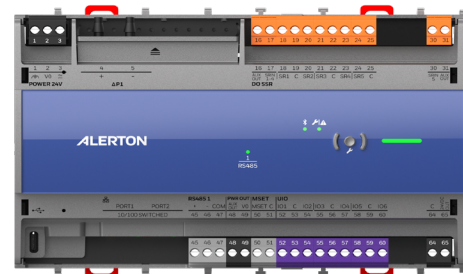


ALERTON MODULAR VAV CONTROLLER

The modular VAV controllers are freely programmable controllers designed for pressure-independent control of any single duct and dual duct Variable Air Volume (VAV), Constant Air Volume (CAV) and Supply/Exhaust terminal units. These controllers are ideally suited for critical environment applications such as Laboratory Airflow Tracking, Critical Patient Rooms, Operating Rooms, and other applications requiring precise control of airflows.

The modular VAV controllers are supported by VisualLogic® programming tool and compatible with Compass 2.3 supervisor version and above. These controllers are designed for flexibility with no integrated actuator, field replaceable air sensor, universal inputs/outputs (UIO), solid state relays outputs, and a Microset bus. These controllers support modern communication standards including either BACnet® IP CAT5/6, BACnet® IP T1L, or BACnet® MS/TP, along with DHCP, SLAAC, and Link Local addressing modes.

The integrated Bluetooth Low Energy (BLE) enables easy pairing with mobile apps such as Honeywell Connect Mobile App for Balancing and BMS Startup App for Device Pairing and Checkout.



VAV Controller - Single Duct



VAV Controller - Dual Duct

FEATURES AND BENEFITS

COMMUNICATION

- Supports BACnet® IP CAT5/6, BACnet® IP T1L, or BACnet® MS/TP - enabling faster downloads, significantly reducing commissioning time, and increasing data bandwidth for data sharing.
- Built-in 2-port Ethernet switch supports 10/100 Mbps.
- IP models support full duplex IPv4, IPv6 addressing, DHCP, SLAAC, and Link Local addressing modes.
- Supports Rapid Spanning Tree Protocol (RSTP) and Network Time Protocol (NTPv4).
- Supports fail-safe daisy chains (IP T1L) over distance of up to 3,281 feet (1000 meters) at a standard speed of 10 Mbps, significantly higher than the standard CAT5/6 distances.
- Features a non-isolated RS-485 interface for Modbus communication.
- 24 VAC/VDC at 300 mA auxiliary supply for field devices.
- Single Duct has 6 Universal Inputs/Outputs and 5 Solid State Relays, while Dual Duct has 8 Universal Inputs/Outputs and 6 Solid State Relays. UIO's are configurable as analog voltage/current output or as a analog/binary input.
- Field replaceable differential pressure sensor (± 500 Pa; accuracy $\pm 3\%$ of full range).
- The airflow sensor is factory calibrated at multiple velocity points. Minimum, maximum and reheat airflows can be entered using the Connect Mobile app (Airflow calibration/Balancing), a Microset wall unit or compatible operator workstation software.
- Solid State Relays support 24 VAC/VDC voltage with 1.5 A continuous and 3.5 A inrush for 100 milliseconds per output.

CHARACTERISTICS

- Color-coded, removable terminal blocks to simplify wiring and replacement.
- Real-time clock with super capacitor circuit providing up to 24 hours of date/time retention.

Start for internal point only).

- 25 Alarms (Event Enrollment Objects).
- 5 Notification Class Objects.
- 1 Calendar object.
- Supports Honeywell Connect Mobile for balancing, BMS Startup - Device Pairing mobile app for device pairing, device numbering and easy deployment using BACnet® "Who Am I" and "You are" messages.

FREELY PROGRAMMABLE

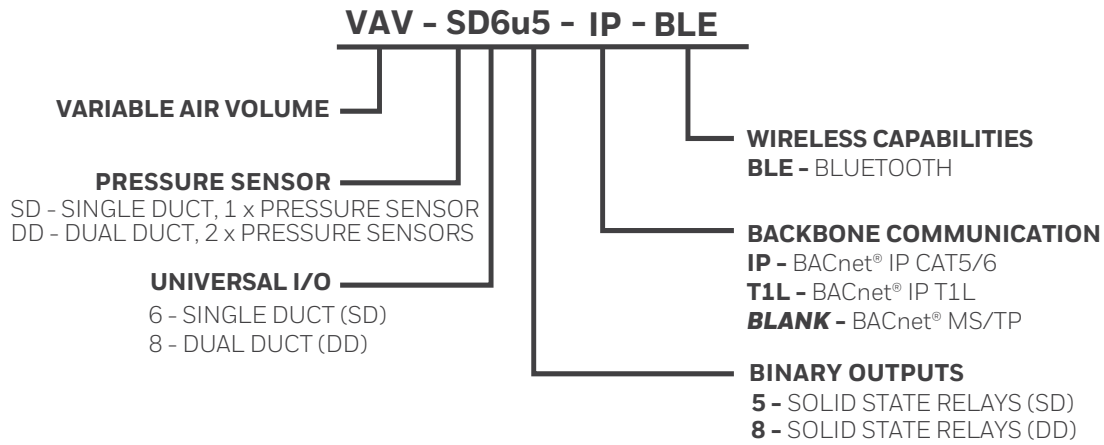
- Supports Alerton's BD9 DDC file format using Alerton's VisualLogic®.
- Extensive library of VAV applications is available, including ASHRAE Guideline 36.
- All control logic is programmed using Alerton's easy-to-learn graphical programming language, VisualLogic®.
- Using BD9 DDC, the modular VAV controller can execute more complex calculations to meet the needs of increasingly demanding sequences of operations for building systems.

SUPPORTS

- 50 trendlogs at 60 seconds interval minimum. (This includes 10 COV trendlogs).
- 3 Schedules and 1 Zone (Optimum

ALERTON

CONTROLLER PART DESCRIPTION



CONTROLLER PART NUMBER DESCRIPTION

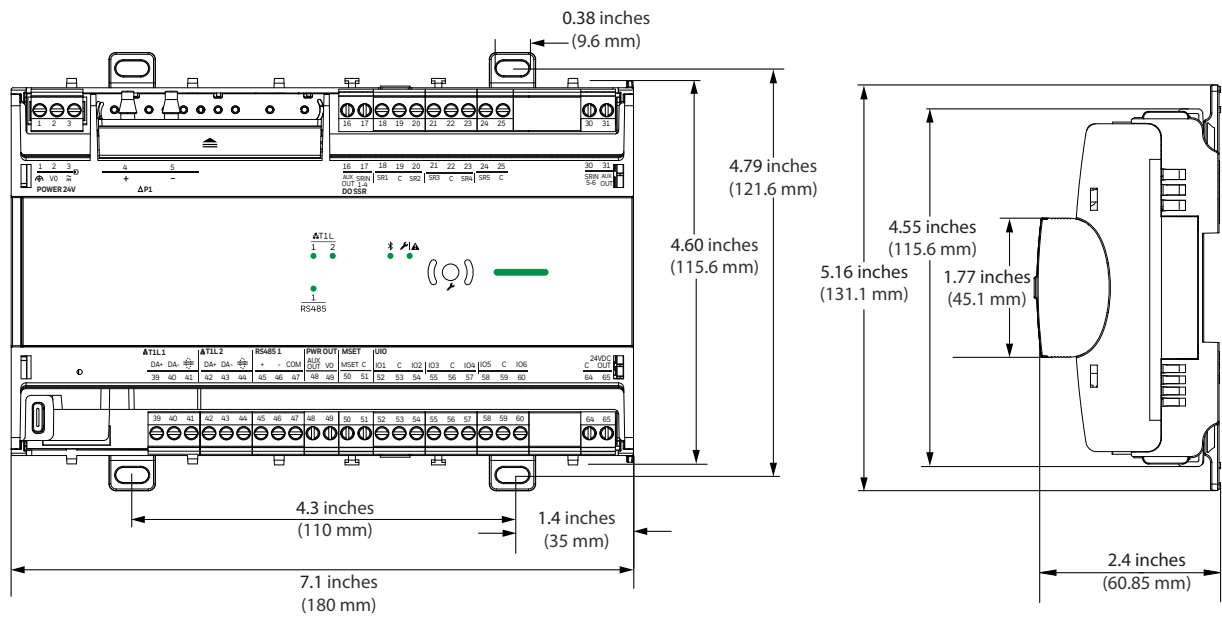
PART NUMBER	PRESSURE SENSOR (SD/DD)	UNIVERSAL IO	SOLID STATE RELAY (SSR)	COMMUNICATION	MSET BUS	BLUETOOTH
VAV-SD6u5-IP	Single Duct	6	5	BACnet® IP CAT5/6	Yes	No
VAV-SD6u5-IP-BLE	Single Duct	6	5	BACnet® IP CAT5/6	Yes	Yes
VAV-SD6u5	Single Duct	6	5	BACnet® MS/TP	Yes	No
VAV-SD6u5-BLE	Single Duct	6	5	BACnet® MS/TP	Yes	Yes
VAV-SD6u5-T1L	Single Duct	6	5	BACnet® IP T1L	Yes	No
VAV-SD6u5-T1L-BLE	Single Duct	6	5	BACnet® IP T1L	Yes	Yes
VAV-DD8u8-IP	Dual Duct	8	8	BACnet® IP CAT5/6	Yes	No
VAV-DD8u8-IP-BLE	Dual Duct	8	8	BACnet® IP CAT5/6	Yes	Yes
VAV-DD8u8	Dual Duct	8	8	BACnet® MS/TP	Yes	No
VAV-DD8u8-BLE	Dual Duct	8	8	BACnet® MS/TP	Yes	Yes
VAV-DD8u8-T1L	Dual Duct	8	8	BACnet® IP T1L	Yes	No
VAV-DD8u8-T1L-BLE	Dual Duct	8	8	BACnet® IP T1L	Yes	Yes

ACCESSORIES/REPLACEMENT PARTS

PARAMETER	SPECIFICATION
SDPPF500PA	Replacement air flow sensor for use if the original sensor is damaged, or becomes inoperable. (Sold in pack of 2)
CW-COV-S-UNITARY	Terminal cover for the modular VAV controllers (sold in pack of 10)
SCRW-TB-UNI-L	Set of removeable terminal blocks covering all models of Unitary & VAV Controllers
10BASE-T1L-ADAPT-0	BACnet® IP T1L single pair media adapter that allows converting 10BASE-T traffic to 10BASE-T1L (without power supply)

WEIGHTS AND DIMENSIONS

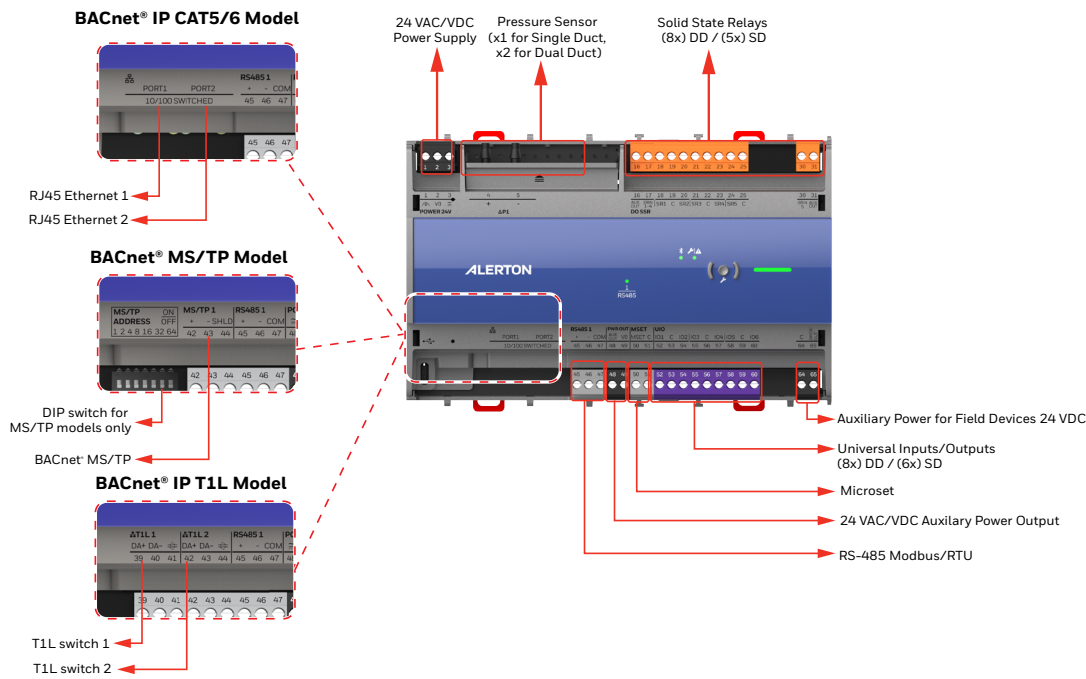
SINGLE DUCT



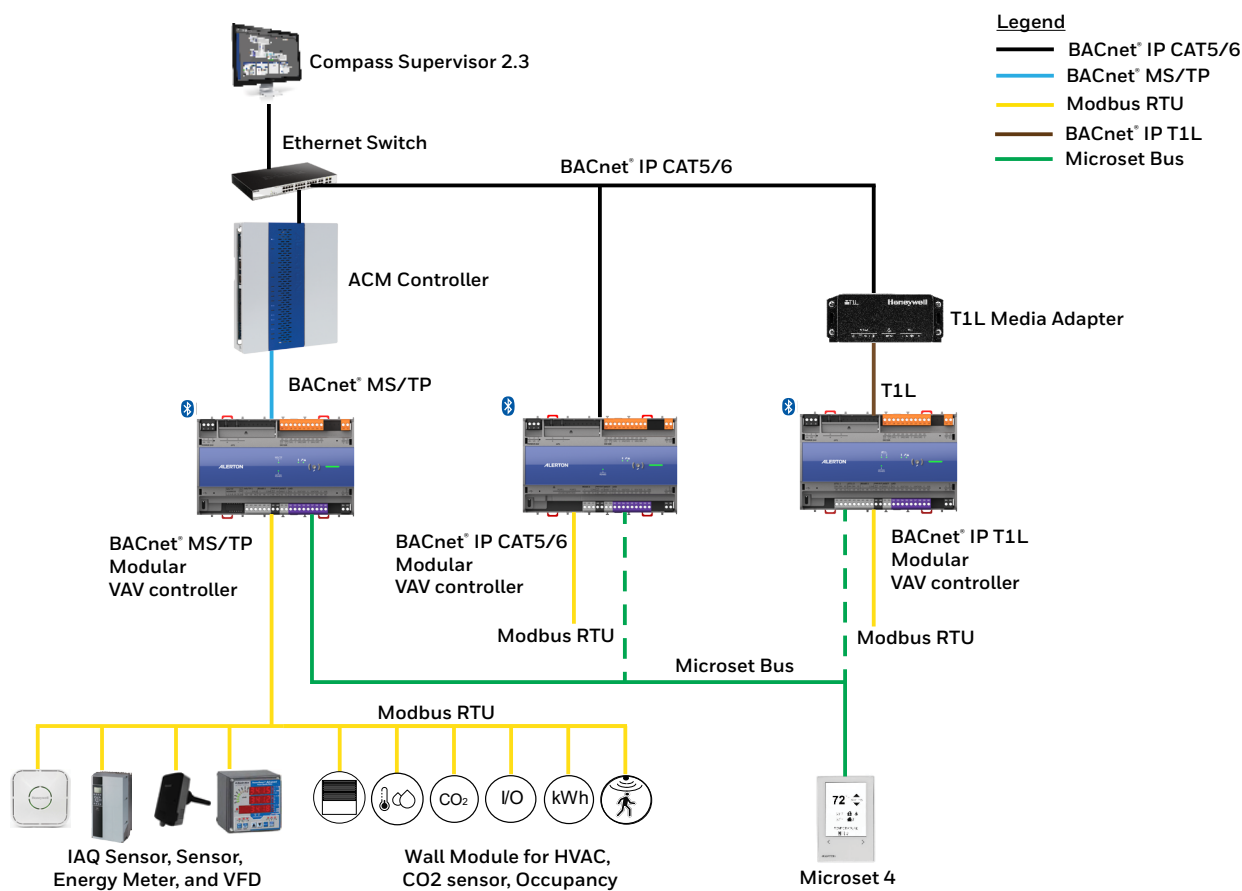
All the models have same dimensions in inches (mm).

PARAMETER	SPECIFICATION
DIMENSION (L X W X H)	7.1 x 4.79 x 2.4 inches (180 x 121.6 x 60.85 mm)
WEIGHT	1.256 lbs. (570 g)
MOUNTING	Mounting in fuse boxes (DIN43880), on DIN rails or surface mounted with optional protection covers.

HARDWARE OVERVIEW



SYSTEM OVERVIEW



HVAC, SMART ROOM CONTROL AND ENERGY METERING*

*Devices subject to local availability, Contact your local sales representative for information on available device on your region.

PRODUCT SPECIFICATIONS

HARDWARE

PARAMETER	SPECIFICATION
CPU	Crossover processor NXP I.MRT, Cortex M7
MEMORY CAPACITY	64 MB QSPI Flash, 16 MB SDRAM
IP CAT5/6 ¹	2 x RJ-45 ports, 10/100 Mbps with a protection that allows loop topology to continue the communication with other controllers even if one node fails, when used with an RSTP manage device.
IP T1L ²	2 x T1L with fail-safe, supporting up to 10 Mbps, and featuring a protection mechanism that ensures communication continues with other controllers even if one node fails.
MS/TP ³	MS/TP operates over twisted pair cabling in a bus topology, facilitating communication with the controllers at speeds ranging from 9.6 kbps to 115.2 kbps through a master-slave configuration.
REAL TIME CLOCK	24 hours backup after power failure After 24 hours, the time will reset to factory default time until the user performs time sync via BACnet® or Network Time Protocol (NTP)
SMALL LED	Transmission or reception of IP T1L, MS/TP, Modbus and Bluetooth signal (green) and service pin status.
LARGE LED	Controller status (green, yellow and red).

NOTE: 1. Applicable for IP CAT5/6 variant only.
2. Applicable for IP T1L variant only.
3. Applicable for MS/TP variant only.

PRODUCT SPECIFICATIONS

ELECTRICAL

PARAMETER	SPECIFICATION
RATED INPUT VOLTAGE	20 - 30 VAC / 24 - 30 VDC
NOMINAL POWER CONSUMPTION	<ul style="list-style-type: none">• BACnet® IP CAT5/6 : 10 VA• BACnet® MS/TP : 7 VA• BACnet® IP T1L : 9 VA
FULL LOAD POWER CONSUMPTION (Maximum load including external devices, Communication, Bluetooth Universal IO output, and 24 VDC output, excluding the load on the SSRs). NOTE: For the current consumption of SSR, refer SSR section table below.	<ul style="list-style-type: none">• BACnet® IP CAT5/6 : 36 VA• BACnet® MS/TP : 33 VA• BACnet® IP T1L : 36 VA
FREQUENCY RANGE	50 - 60 Hz
AUXILIARY POWER OUTPUT	1 x 24 VAC/VDC at 300 mA
	1 x 24 VDC at 75 mA
IMPULSE VOLTAGE	330 VAC
TYPE OF LOADS	Resistive or inductive loads
MATERIAL GROUP	IIIb
CLASSES OF CONTROL FUNCTION	Class A control
TYPE OF OUTPUT WAVEFORM	Sine wave or DC voltage

OPERATIONAL ENVIRONMENT

PARAMETER	SPECIFICATION
STORAGE TEMPERATURE	-40 °F to 150 °F (-40 °C to 66 °C)
OPERATING TEMPERATURE	-40 °F to 149 °F (-40 °C to 65 °C)
HUMIDITY	5 % to 95 % RH., non-condensing
PROTECTION	IP20, NEMA 1
POLLUTION LEVEL	2

SOLID STATE RELAY

SPECIFICATION
SSR does switch supply voltage, works with AC and DC, however in case of DC no support for synchronous motor.
1.5 A constant current across all 5 SD/ 8 DD outputs, 3.5 A inrush for 0.1 seconds per SSR output.
Factory installed jumper between 24 VAC or 24 VDC supply and SSR input shared by all SSRs.
The fuse should be 5 A, for example, 0AGC005.V, OAGW005.VP or BK/AGW-5, and the fuse folder, for example, 150603 or BK/HRK-R.

SUPPORTED DEVICES

PARAMETER	SPECIFICATION
MICROSET WALL MODULES	Microset 4: MS4-TH, MS4-TH-NL, MS4-THC Microset II: MS-2000-BT, MS-2000-BT-NL, MS-2000H-BT
MICROTOUCH WALL MODULES	TS-1050-BT, TS-1050-BT-NL
MODBUS DEVICES	Modbus RTU devices from any manufacturer including Alerton Modbus devices, for example TR100, TR50, TC300, DALI64MODPSUF/S can be used.

WIRE GAUGE

PARAMETER	SPECIFICATION
POWER INPUT	12 - 14 AWG
SSR OUTPUT AND SRIN	22-18 AWG
IP T1L	18 - 23 AWG, Twisted Pair, Shielded Al-Foil and Cubraid tinned

PRODUCT SPECIFICATIONS

COMMUNICATION

PARAMETER	SPECIFICATION
PROTOCOL SUPPORTED	<ul style="list-style-type: none">• BACnet®/Ethernet, BACnet®/IPv4, BACnet®/IPv6.• BACnet®/ MS/TP (Master); EIA-485 (RS485) over twisted shield-pair (TSP); auto-baud switching (9.6, 19.2, 38.4, 76.8, or 115.2 Kbps)• Modbus RTU (Master)• Rapid Spanning Tree Protocol (RSTP)• Network Time Protocol (NTPv4)• Bluetooth (Optional)
IP ADDRESSING MODES	<ul style="list-style-type: none">• Dynamic: DHCP (IPv4), SLAAC (IPv6), Link-Local• Static: Assigned

NOTE: Auto Baud rate detection is provided only for the BACnet™ MS/TP controllers.

UNIVERSAL IO

PARAMETER	SPECIFICATION
AI	<ul style="list-style-type: none">• 16-bit universal inputs accept 10 k thermistor (type II and III), 3k thermistor, dry contact, 1k platinum RTD, 0-20 mA, 0-10 V, or dry-contact pulse. Pulse input maximum frequency of 100 Hz. Pulse input minimum duty cycle 5 ms ON / 5 ms OFF.• Sensors: 10K Ohm NTC Type II, 10K Ohm NTC Type III, PT1000, 100 Ohm to 100K Ohm resistive (custom characteristic). <p>NOTE: Some 4-20 mA input sensors may need an external resistor to function properly. Please refer to the sensor's documentation.</p>
BI	<ul style="list-style-type: none">• Dry contact binary input.• Pulse input with maximum frequency 100 Hz, minimum pulse width 5 ms.
AO	<ul style="list-style-type: none">• Voltage output with 0-10 VDC with -3 mA ...+20 mA.• Current output with 0-20 mA direct/reverse.• 16-bit analog output.
DO	0...10 VDC at 20 mA binary output with direct/reverse.

IP T1L COMMUNICATION

PARAMETER	SPECIFICATION
10BASE-T1L STANDARD	802.3cg-2019
CONNECTION	Screw terminal, auto MDI-X
CABLE TYPE	18 - 23 AWG, Twisted Pair, Shielded AI-Foil and Cubraid tinned
DISTANCE	Maximum distance between controllers support upto 3281 ft. (1000 m) based on cables characteristics. For more details about cable type and characteristics refer to the IP T1L Network Specification Guide.
TRANSMISSION RATE	10 Mbps

STANDARDS AND APPROVALS

SPECIFICATION
CE mark
UL 916
UL/ULC 60730-1
FCC/IC Product Class B
Plenum Tested (according to UL 2043)
RoHS
IP CAT5/6, IP T1L and MS/TP modular VAV models as BACnet® Advanced Application Controller (B-AAC); (BTL certification is pending)

Alerton

715 Peachtree Street NE
Atlanta, Georgia 30308
www.alerton.com



31-00804-01 | 08-25
© 2025 All Rights Reserved Honeywell International Inc.

ALERTON