



# VA2 - VAV controller

## Building automation's missing link



VA2 - VAV controller

### Overview

#### Networking

- > Ethernet connector for BACnet Ethernet/IP connectivity
- > 802.15.4 wireless mesh
- > Wired serial bus for chain links

#### Third party interoperability

- > BACnet
- > EnOcean (wireless)
- > Zigbee (wireless)
- > CANbus

#### Inputs/Outputs

- > Inputs: 6 universal
- > Outputs: 2 relay, 4 analog
- > Wireless I/O: unlimited

#### VAV control

- > Flow sensor
- > Damper actuator

#### Other

- > Real-time clock
- > 400MHz processor
- > 64MB of RAM
- > 2GB of Flash

### Introduction

A flexible line of controllers that allows facility managers, contractors and OEMs to deploy integrated solutions for VAV, HVAC, lighting, and more, quickly and efficiently linking multiple devices based on many standard protocols. They are all interoperable with any BACnet compliant building management system.

### Control features

- > Equipped with pressure sensor and actuator
- > Supports VAV functionalities and applications
- > Programmability with real-time response when scripting
- > Control of wired end-devices (6 inputs and 6 outputs)
- > Wireless bidirectional control of EnOcean end-devices (optional)
- > Wireless bidirectional control of ZigBee end-devices (optional)

### Applications

Supports VAV, as well as HVAC & lighting applications including:

- > HVAC and lighting room and zone control
- > Unitary equipment such as rooftop HVAC units, air handling units, heat pumps and dehumidification units
- > Mechanical rooms and equipment closets
- > Metering

### Networking between units

- > Wireless - ZigBee wireless mesh network (self-forming/healing).
- > Wired - Daisy chain.
- > IP/Ethernet - Ethernet port.

### Embedded gateway

- > EnOcean (wireless) to BACnet IP.
- > ZigBee (wireless) to BACnet IP.

### Embedded web server hosting the CAN2GO web BEMS

The VA2 hosts the CAN2GO web building energy management system. The CAN2GO web BEMS is license-free and provides an easy way to discover and configure wireless end-devices. It also supports scripting and offers typical BEMS features such as trend logs, events, schedules, maps/floorplan importing, etc.



# Specifications VA2 - VAV controller

## POWER

Voltage	- 24VAC; ± 15%; 50/60HZ; Class 2. - 24VDC ± 10%
Typical Consumption	- 3 VA + Output (VAC) - 1.2W + Output (VDC)

## GENERAL

Processor	ARM9 32-bit, 400MHz
Memory	64Mb RAM
Storage	2Gb Flash
Real-time clock	Battery backed (10,000 hours)
Communication	- Zigbee Pro, EnOcean, BACnet - CANbus (125-500 Kbps) - Ethernet (10/100 Mbps)

## ENCLOSURE

Material	Rigid ABS
Dimensions	141mm (5.55 in) X 191mm (7.52 in)
Rating	UL940-5VA
Mounting	Din-rail, wall or ceiling mount

## ENVIRONMENTAL

Operating Temperature	0°C (32°F) to 60°C (140°F)
Storage Temperature	-20°C (-4°F) to 60°C (140°F)
Relative Humidity	0 to 90% non-condensing

## AGENCY APPROVALS

Energy Management Equipment, UL 916, Fourth Edition, December 23, 1998, rev. December 17, 2007
CSA Standard for Signal Equipment C22.2 No. 205-M1983 (R2004)
CFR47 FCC Part15, Subpart B:2009
ICES-003: Issue 4 (2004)
CE

## INPUTS

Quantity	6
Voltage	0-10 volt
Current	4-20mA with 249 Ω external resistor
Resistance	1 kΩ to 100 kΩ
Resolution	14-bit

## OUTPUTS

Analog (x4)	0-12V, nominal 50 mA max each, 12-bit resolution
Relay (x2)	24V, 1.1 Amp per relay

## SOFTWARE

Type	Embedded web interface
Local installation	None necessary
PDA/Smartphone compatible	Yes
Browser compatibility	Firefox 3.6 and 4.0

## ENOCLEAN TRANSCIVER (OPTIONAL)

Frequency	315.0 MHz or 868.3 MHz
Receiver Sensitivity	-95dBm
Conducted Output Power	5dBm
Range	Up to 100m/300ft. open air / Up to 30m/100ft. in building
Antenna	- 15 cm wire - (Optional) External whip, RP SMA 0dBi

## ZIGBEE TRANSCIVER (OPTIONAL)

Frequency	2400 – 2483.5 MHz, 16 RF channels
Data rate / Mod. type	250 Kbps
Receiver Sensitivity	-101dBm / -105dBm (amplified)
Nominal Output Power	8dBm / 18dBm (amplified)
Range	Up to 1000m/3000ft. open air / Up to 300m/1000ft. in building
Antenna	- Internal - (Optional) External whip, RP SMA 2.5dbi



**FLOW SENSOR**

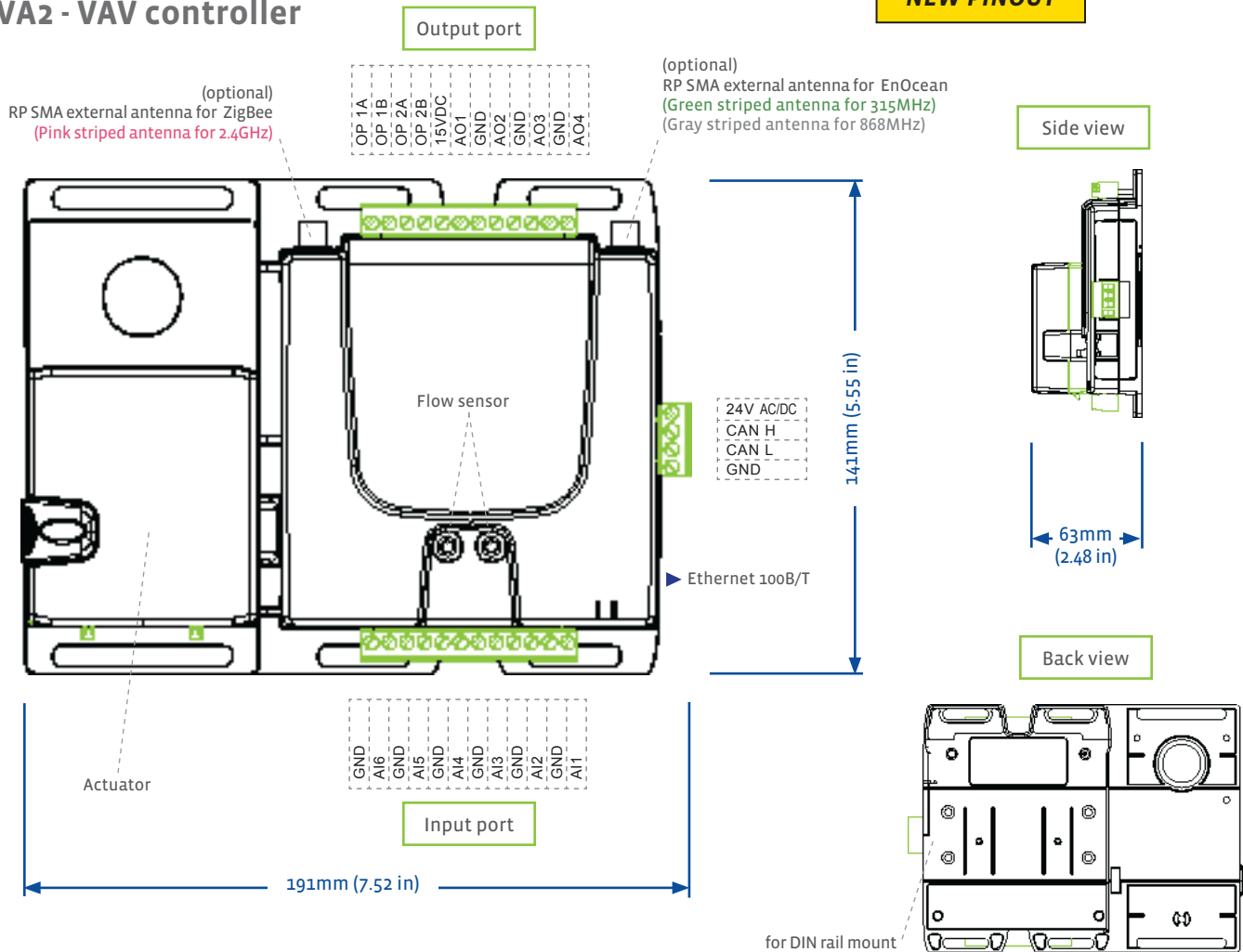
Offset / Drift	No offset, no drift
Measurement Range	-500 to +500 Pa (-5 to +5 mbar/-2 to +2 inch H <sub>2</sub> O)
Accuracy	3% m.v.
Mounting Sensitivity	Not sensitive to mounting orientation
Offset stability	< 0.1 Pa/year

**DAMPER ACTUATOR**

Motor	Belimo LM24E
Torque	45 in-lb [5 Nm]
Angles of Rotation	0 to 95°
Fits Shaft Diameter	1/4" to 3/4"
Power Consumption	3 VA Class 2 power source From controller

**Dimensions & Wiring**  
**VA2 - VAV controller**

**! IMPORTANT !**  
**NEW PINOUT**

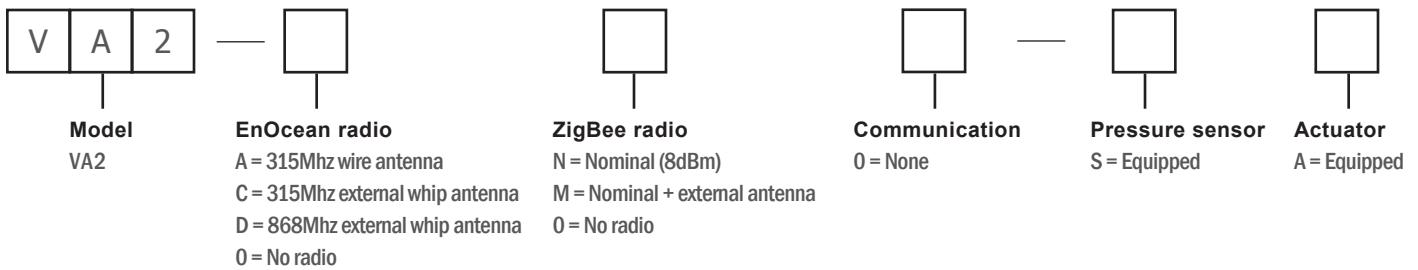




### Ordering information

#### Model: VA2 - VAV controller

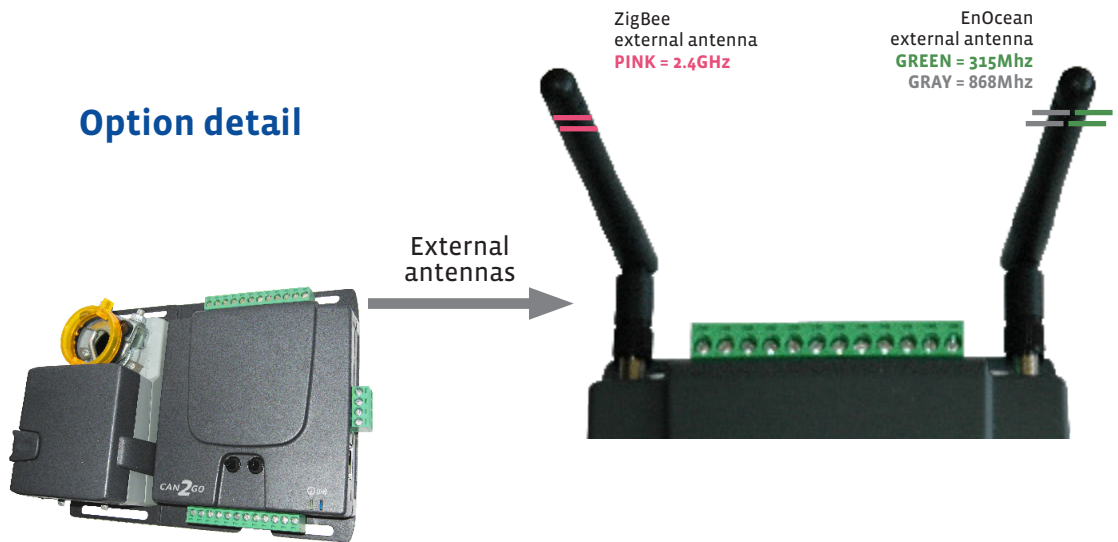
Code all blocks in table.



Available:

- VA2 - AN0 - SA
- VA2 - CM0 - SA
- VA2 - C00 - SA
- VA2 - D00 - SA
- VA2 - DM0 - SA
- VA2 - 000 - SA

### Option detail



to order, contact SCL Elements Inc.

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# CAN2GO System architecture

CAN2GO can be used as stand-alone solution, complete with programmable controllers and an embedded web building energy management system. It can also be integrated with third party BACnet IP/Ethernet building automation systems.

