



# UN2 - Universal controller

## Building automation's missing link



UN2 - Universal 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)
- > Modbus
- > CANbus

#### Inputs/Outputs

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

#### Other

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

### Introduction

A flexible line of controllers that allows facility managers, contractors and OEM manufacturers to deploy integrated solutions for 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

- > Programmability with real-time response when scripting.
- > Control of wired end-devices (6 inputs and 6 outputs).
- > Wireless control of EnOcean end-devices (128/128 I/O per UN2).
- > Wireless control of ZigBee end-devices (128/128 I/O per UN2).
- > Modbus (optional).

### Applications

Supports any HVAC & lighting application 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.
- > Modbus to BACnet IP.

### Embedded web server hosting the CAN2GO web BEMS

The UN2 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

## UN2 - Universal 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	132mm (5.20 in) X 126mm (4.96 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

#### RS 485 (OPTIONAL)

Supported protocols	Modbus
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#### ENOCAN TRANSCEIVER (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 TRANSCEIVER (OPTIONAL)

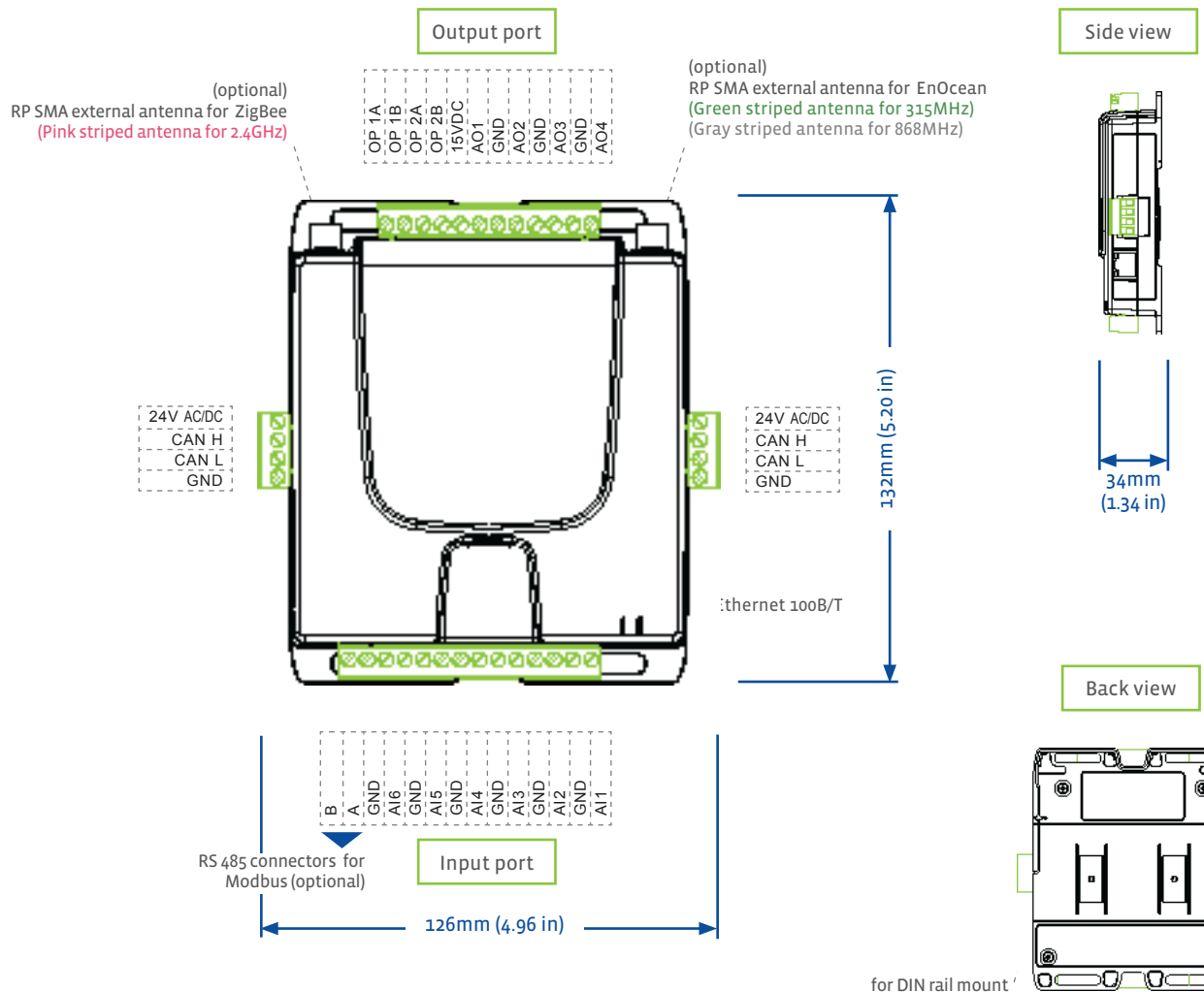
Frequency	2400 – 2483.5 MHz, 16 RF channels
Data rate / Mod. type	250 Kbps
Receiver Sensitivity	-101dBm / -105dBm (amplified)
Nominal Output Power	8dBm / 18dBm (amplified)
Range	Up to 1000m/3000ft. open air / Up to 300m/1000ft. in building
Antenna	- Internal - (Optional) External whip, RP SMA 2.5dbi



# Dimensions & Wiring

## UN2 - Universal controller

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





### Ordering information

#### Model: UN2 - Universal controller

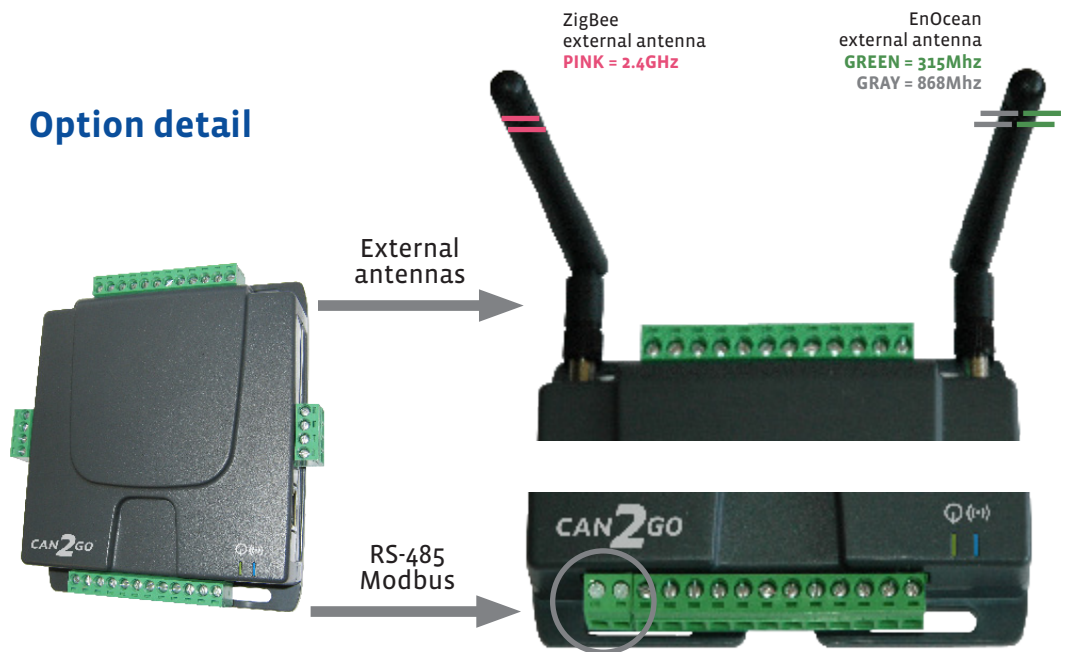
Code all blocks in table.

U	N	2					
<b>Model</b>	<b>EnOcean radio</b>	<b>ZigBee radio</b>	<b>Communication</b>	<b>Pressure sensor</b>	<b>Actuator</b>		
UN2	A = 315MHz wire antenna B = 868MHz wire antenna C = 315MHz external whip antenna D = 868MHz external whip antenna 0 = No radio	N = Nominal (8dBm) M = Nominal + external antenna I = High + external antenna 0 = No radio	4 = RS-485 (Modbus) 0 = None	S = Equipped 0 = Not equipped	0 = Not equipped		

Available:

- UN2 - AN0 - 00
- UN2 - CI0 - 00
- UN2 - CI4 - 00
- UN2 - DM4 - 00
- UN2 - AN4 - 00
- UN2 - C00 - 00
- UN2 - 0M0 - 00
- UN2 - 000 - 00
- UN2 - AN4 - S0
- UN2 - BN0 - 00
- UN2 - D00 - 00

### 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.

