



Technical Overview

These are specifically designed for straightforward and accurate control of heat pump, rooftop unit, fan coil units (2 or 4-pipes) or any other heating/cooling equipment or humidity control. Its field-configurable algorithms allow for versatility when implementing required control sequences.

Features and Benefits

- Heat pump, humidity control or general unit controller
- Fan control: 1, 2 or 3-speed (auto/on) or analog (EMC)
- Precise temperature control with configurable PI function
- Low limit set protection
- Occupancy and night set back mode

Communication

- Selectable BACnet or Modbus communication
- MAC address set via menu or network
- Copy & broadcast configuration to other controllers (BACnet only)
- BACnet scheduler (up to 6 events per day)
- Supports CVO (BACnet only)

Product Codes

Please see next page

Specification

Supply voltage	24Vac
Supply current	1VA (41.6mA @ 24Vac)
SC-RC1-RHT-WB	
Inputs	2 x Universal 0-10Vdc, 10kΩ Thermistor or dry contact
Outputs	5 x Binary (OptoFET, 250mA max.) 2 x Analog (0-10Vdc, adjustable)
SC-RC2-CO2-RHT-WB	
Inputs	4 x Universal 0-10Vdc, 10kΩ Thermistor or dry contact
Outputs	6 x Binary (OptoFET, 250mA max.) 4 x Analog (0-10Vdc, adjustable)
<i>Common specification</i>	
Set point range:	
Temperature	10 to 40°C
Humidity	10 to 90% RH
Proportional band	0.5 to 5°C adjustable
Dead band	0.0 to 5°C adjustable
CO ₂	Self-calibrating NDIR
PIR:	
Type	PIR
Detection	100° angle, 4m distance
BACnet	MS/TP, 9600, 19200, 38400 or 76800
Modbus	RTU slave, 9600, 19200, 38400 or 57600
Connections	Selectable parity & stop bits
Accuracy:	0.8mm ² at least
Temperature	±0.4°C (control)
Humidity	±3.5%RH (control)
CO ₂	±30ppm ±3% of reading
Ambient:	
Temperature	0 to 50°C
RH	5 to 95% RH, non-condensing
Storage temperature	-30 to +50°C
Housing:	
Material	ABS
Dimensions	124 x 83 x 20mm (without CO ₂) 124 x 83 x 24mm (with CO ₂)
Protection	IP30
Country of origin	Canada

WEEE Directive:



At the end of the products useful life please dispose as per the local regulations. Do not dispose of with normal household waste. Do not burn.



Product Codes

Smart Controller:

2 x Universal inputs
5 x Binary outputs
2 x Analog outputs

SC-RC1-T-WG Temperature
SC-RC1-T-BB Temperature
SC-RC1-T-WB Temperature

SC-RC1-RHT-WG Temperature & humidity
SC-RC1-RHT-BB Temperature & humidity
SC-RC1-RHT-WB Temperature & humidity

SC-RC1-TPIR-WG Temperature & PIR
SC-RC1-TPIR-BB Temperature & PIR
SC-RC1-TPIR-WB Temperature & PIR

SC-RC1-RHT-PIR-WG Temperature, humidity & PIR
SC-RC1-RHT-PIR-BB Temperature, humidity & PIR
SC-RC1-RHT-PIR-WB Temperature, humidity & PIR

Housing / Display Colours

- ♦ **WG** White housing, grey display
- ♦ **BB** Black housing & display
- ♦ **WB** White housing, black display

Smart Controller:

4 x Universal inputs
6 x Binary outputs
4 x Analog outputs

SC-RC2-T-WG Temperature
SC-RC2-T-BB Temperature
SC-RC2-T-WB Temperature

SC-RC2-RHT-WG Temperature & humidity
SC-RC2-RHT-BB Temperature & humidity
SC-RC2-RHT-WB Temperature & humidity

SC-RC2-RHT-CO2-WG Temperature, humidity & CO₂
SC-RC2-RHT-CO2-BB Temperature, humidity & CO₂
SC-RC2-RHT-CO2-WB Temperature, humidity & CO₂

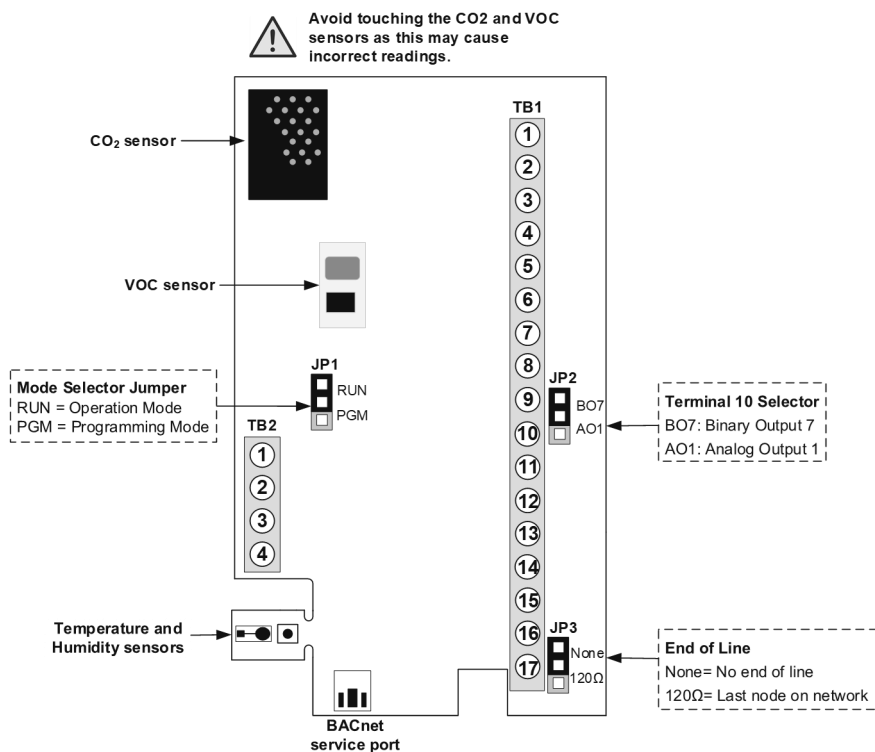
SC-RC2-T-PIR-WG Temperature & PIR
SC-RC2-T-PIR-BB Temperature & PIR
SC-RC2-T-PIR-WB Temperature & PIR

SC-RC2-RHT-PIR-WG Temp, humidity & PIR
SC-RC2-RHT-PIR-BB Temp, humidity & PIR
SC-RC2-RHT-PIR-WB Temp, humidity & PIR

SC-RC2-RHT-CO2P-WG Temp, humidity, CO₂ & PIR
SC-RC2-RHT-CO2P-BB Temp, humidity, CO₂ & PIR
SC-RC2-RHT-CO2P-WB Temp, humidity, CO₂ & PIR

SC-RC2-RHT-CO2PV-WG Temp, humidity, CO₂, PIR & VOC
SC-RC2-RHT-CO2PV-BB Temp, humidity, CO₂, PIR & VOC
SC-RC2-RHT-CO2PV-WB Temp, humidity, CO₂, PIR & VOC

PCB Layout



Terminal Description

Terminals		Option Heat Pump			Analog Option			
		1-Speed Fan	2-Speed Fan	3-Speed Fan	Fan analog	1-Speed Fan	2-Speed Fan	3-Speed Fan
TB1	1 COM	Common			Common			
	2 24V	24V (power supply)			24V (power supply)			
	3 EXT SRC	External power supply			External power supply			
	4 BO1	Reversing Valve			select any ramp*			
	5 BO2	Compressor Y1			select any ramp*			
	6 BO3	Heat W1			select any ramp*			
	7 BO4	Compressor Y2	Compressor Y2	Fan (speed 3)	select any ramp*			Fan (speed 3)
	8 BO5	Heat W2	Fan (speed 2)	Fan (speed 2)	select any ramp*		Fan (speed 2)	Fan (speed 2)
	9 BO6	Fan (speed 1)	Fan (speed 1)	Fan (speed 1)	select any ramp*	Fan (speed 1)	Fan (speed 1)	Fan (speed 1)
	10 AO1/BO7	select any ramp*			select any ramp*			
11 AO2	select any ramp*			Fan Speed option • Modulating 0-10Vdc for ECM Motors • Steps of 3,6,9V for 3 Speed		select any ramp*		
12 AO3	select any ramp*			select any ramp*				
13 COM	Common			Common				
14 UI1	Universal Input selection: • 0-10 Vdc (External sensor, humidity, CO ₂) • 10K Ohm (External sensor, changeover) • Dry Contact**			Universal Input selection: • 0-10 Vdc (External sensor, humidity, CO ₂) • 10K Ohm (External sensor, changeover) • Dry Contact**				
15 UI2								
16 A+	BACnet communication port (A+)			BACnet communication port (A+)				
17 B-	BACnet communication port (B-)			BACnet communication port (B-)				
TB2	1 AO4	select any ramp*			select any ramp*			
	2 COM	Common			Common			
	3 UI3	Universal Input selection: • 0-10 Vdc (External sensor, humidity, CO ₂) • 10K Ohm (External sensor, changeover) • Dry Contact**			Universal Input selection: • 0-10 Vdc (External sensor, humidity, CO ₂) • 10K Ohm (External sensor, changeover) • Dry Contact**			
	4 UI4							

* = select from any of the following ramps:

** = select from any of the following:

Cooling 1 w/ fan
Cooling 2 w/ fan
Heating 1 w/ fan
Heating 2 w/ fan
Heating 2 without fan

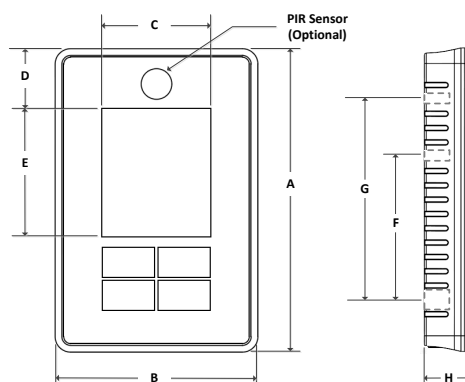
Cool/Heat 1 w/ fan
COR (changeover) w/ fan
Humidify w/ fan
CO2 Alarm
Off

Off
Override
Flow Switch
Local/Remote Selector Switch
Overheat

Dirty Filter
Window & Door Contacts
Occupancy & NSB Sensor
Changeover Input

Dimensions

A = 24mm
B = 83mm
C = 44mm
D = 24mm
E = 53mm
F = 60mm
G = 83mm
H = 24mm



A full user manual is available to download from www.sontay.com

Revision History:

Rev.	Description of change
7.0	New product

Page No.	Date
All	11/05/2022

Whilst every effort has been made to ensure the accuracy of this specification, Sontay cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.

Tel: +44 (0)1732 861200 - E-mail: sales@sontay.com - Web: www.sontay.com
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