

## TRC-H-2A3R - Touchscreen room controller



TRC-H-2A3R room controllers are designed for climate control in room spaces with modern sharp slim line 3.5" colour touchscreen interface. The controllers have up to two heating and cooling control stages, fan speed control, optional CO<sub>2</sub> level control and humidity control. The units can be used in various climate control applications, such as fan coil units, chilled ceiling and zone heating/cooling systems.

The TRC-H-2A3R controllers have two analogue 0...10 Vdc outputs, three relay outputs (230 V, 7 A) for fan, external sensor input and a digital input. The devices are available with both Modbus RTU and BACnet MS/TP communication.

The controller can be equipped with several options. For example, the CE option enables the light, blinds and boost control.

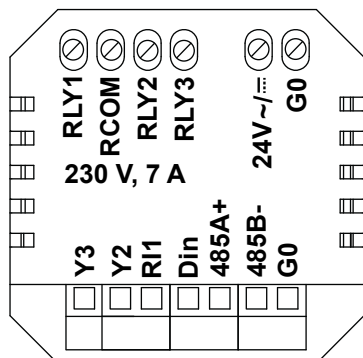
### Technical specifications

Property	Value
Supply	24 Vac/dc (22...28 V) < 80 mA
Internal temperature measurement	
Range	0...50 °C (32...122 °F)
Accuracy (25 °C / 77 °F)	±0.5 °C (0.9 °F)
CO <sub>2</sub> measurement (CO2 models)	
Range	0...5000 ppm
Accuracy (25 °C / 77 °F)	±50 ppm + 3 % from reading
Calibration	Automatic
Warm-up time	< 20 seconds
Non-linearity	< 1 % FS
Time constant	2 min
Humidity measurement (RH models)	
Range	0...100 %rH
Accuracy (25 °C / 77 °F)	±2 %rH (20...80 %rH)
Outputs	

Property	Value
Analogue outputs	2 x 0...10 Vdc, < 5 mA
Relay outputs	3 x 230 Vac, 7 A (res.) / 2.2 A (inductive) or 3 x 115 Vac, 7 A (res.) / 1.3 A (inductive)
<b>Inputs</b>	
Analogue inputs	1 x external NTC 10 sensor (RI1). Resistive input can also act as a potential free contact. AI option: 0..10 Vdc input (replaces RI1).
Digital inputs	1 x digital input, potential free contact, impedance <1 kΩ
Communication (MOD models)	Modbus RTU
Bus speed	9600*/19200/38400/57600/76800 bit/s
Parity	none*/odd/even
Stop bits	1 or 2
Network size	up to 63 devices per segment
Communication (BAC models)	BACnet MS/TP
Bus speed	9600*/19200/38400/57600/76800 bit/s
Parity	none*/odd/even
Stop bits	1 or 2
Network size	up to 63 devices per segment
Display	3.5" backlit touchscreen, 320 x 480 pixels, 255K colours
<b>Operating conditions</b>	
Temperature	0...50 °C (32...122 °F)
Humidity	0...95 %rH (non-condensing)
<b>Storage conditions</b>	
Temperature	-30...70 °C (-22...158 °F)
Humidity	0...95 %rH (non-condensing)
<b>Wiring terminals (power supply and analogue outputs)</b>	
Wire type	Solid and stranded wire
Wire size	Solid: 0.05...2.5 mm <sup>2</sup> , stranded: 0.05...1.50 mm <sup>2</sup> / 14...30 AWG (UL)
Rising clamp size	2.5 x 2.2 mm
<b>Wiring terminals (communication and inputs)</b>	
Wire type	Solid and stranded wire
Wire size	0.05...1.5 mm <sup>2</sup> / 14...30 AWG (UL)
Rising clamp size	2.5 x 1.9 mm
<b>Housing</b>	
Protection class	IP20
Materials	Polycarbonate plastics, self extinguishing
Mounting	On a flush mounting box (60 mm hole distance)
Dimensions (w x h x d)	88 x 112 x 43 mm
Weight	220 g
	* = factory setting

## Wiring

**CAUTION** Device wiring and commissioning can only be carried out by qualified professionals. Always make the wirings while the power is switched off.

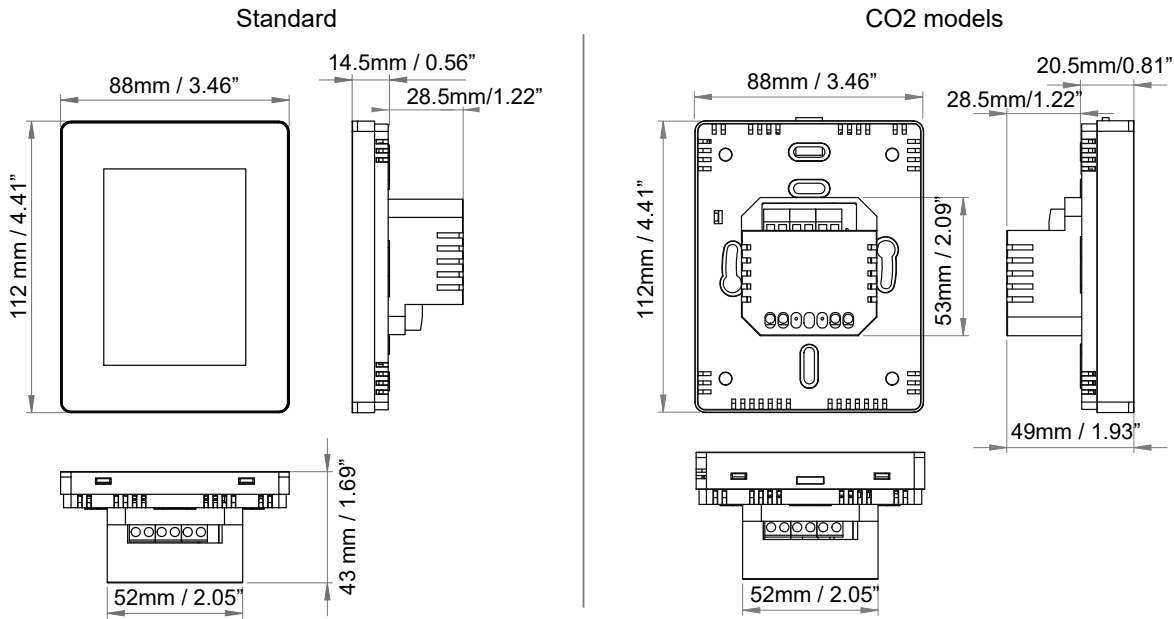


<i>RLY1</i>	Relay output 1, 230 V / 7 A, fan speed 1
<i>RCOM</i>	Relay outputs, common
<i>RLY2</i>	Relay output 2, 230 V / 7 A, fan speed 2
<i>RLY3</i>	Relay output 3, 230 V / 7 A, fan speed 3
<i>24V</i>	Supply, 24 Vac/dc
<i>G0</i>	0 V, common
<i>Y3</i>	Analogue output 3, 0...10 Vdc, configurable (the default function is cooling stage 1)
<i>Y2</i>	Analogue output 2, 0...10 Vdc, configurable (the default function is heating stage 1)
<i>RI1</i>	External temperature sensor input 1, NTC 10 (0...10 Vdc with AI option)
<i>Din</i>	Digital input, potential free contact
<i>485A+</i>	Modbus RTU / BACnet MS/TP, RS-485
<i>485B-</i>	
<i>G0</i>	0 V, common

## Ordering information

		Type	0	1	2	3	4	5	6
0	Touchscreen room controller		6001	E		2			
1	Device type	Room controller	TRC-H-2A3R	E					
2	Communication	Modbus	-MOD		M				
		Bacnet	-BAC		B				
3	Power supply	24 Vac/dc	-24			2			
4	Additional measurements	No additional measurements					0		
		Relative humidity	-RH				1		
		CO <sub>2</sub>	-CO <sub>2</sub>				2		
		Relative humidity and CO <sub>2</sub>	-RH-CO <sub>2</sub>				3		
5	Advanced options	No advanced options						0	
		0...10 Vdc input (replaces RI1)	-AI					1	
		Control extension	-CE					2	
		0...10 Vdc input and control extension	-AI-CE					3	
6	Body colour	Chrome							0
		White (RAL 9010)	-W						W
		Black (RAL 8022)	-B						B

## Dimensions



## Supported standards and directives

Standard	Description
2014/30/EU	Electromagnetic Compatibility (EMC).
2014/35/EU	Low Voltage Directive (LVD).
2011/65/EU	Restriction of Hazardous Substances (RoHS2) Directive.
EN 61000-6-1:2007	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments.
EN 61000-6-2:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments.
EN 61000-6-3:2007/A1:2011	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments.
EN 61000-6-4:2007/A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments.
EN 60730-1:2016	Automatic electrical controls - Part 1: General requirements.