

TRC-3A - Touchscreen room controller



TRC-3A 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 CO₂ level control and humidity control. The units can be in various climate control applications, fan coil units, chilled ceiling and zone heating/cooling systems.

The TRC-3A controllers have three analogue 0...10 Vdc outputs, two external sensor inputs 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 ₂ 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 | 3 x 0...10 Vdc, < 5 mA |
| Inputs | |

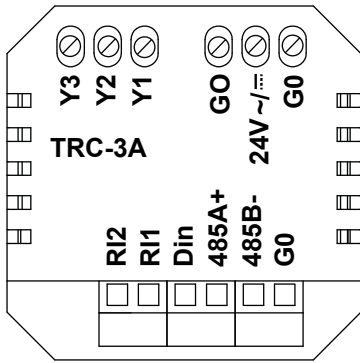
| Property | Value |
|--|--|
| Analogue inputs | 2 x external NTC 10 sensor (RI1 & RI2). Resistive inputs can also act as potential free contacts. AI option: 2 x 0..10 Vdc inputs (replaces RI1 & RI2). |
| Digital inputs | 1 x digital input, potential free contact, impedance <1 kΩ |
| Communication (MOD 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 |
| Operating conditions | |
| Temperature | 0...50 °C (32...122 °F) |
| Humidity | 0...95 %rH (non-condensing) |
| Storage conditions | |
| Temperature | -30...70 °C (-22...158 °F) |
| Humidity | 0...95 %rH (non-condensing) |
| Wiring terminals (power supply and analogue outputs) | |
| Wire type | Solid and stranded wire |
| Wire size | Solid: 0.05...2.5 mm ² , stranded: 0.05...1.50 mm ² / 14...30 AWG (UL) |
| Rising clamp size | 2.5 x 2.2 mm |
| Wiring terminals (communication and inputs) | Tilted terminals |
| Wire type | Solid and stranded wire |
| Wire size | 0.05...1.5 mm ² / 14...30 AWG (UL) |
| Rising clamp size | 2.5 x 1.9 mm |
| Housing | |
| 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.

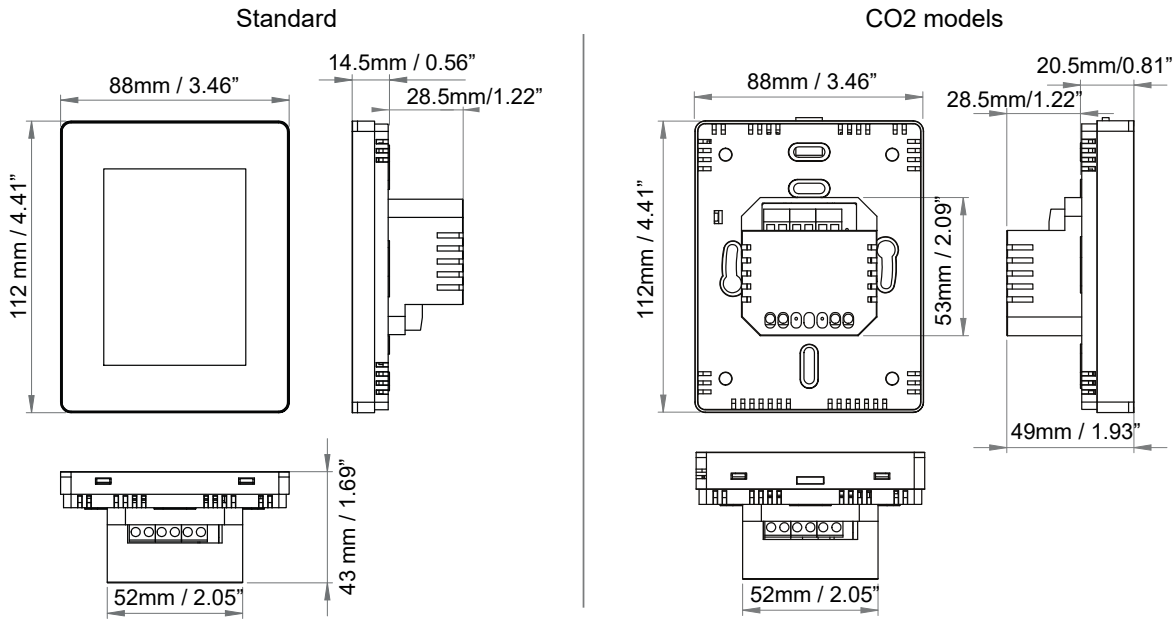


| | |
|-------|---|
| Y3 | Analogue output 3, 0...10 Vdc, configurable (the default function is cooling stage 1) |
| Y2 | Analogue output 2, 0...10 Vdc, configurable (the default function is heating stage 1) |
| Y1 | Analogue output 1, 0...10 Vdc, configurable (the default function is fan speed) |
| G0 | 0 V, common |
| 24V | Supply, 24 Vac/dc |
| G0 | 0 V, common |
| RI2 | External temperature sensor input 2, NTC 10 (0...10 Vdc with AI option) |
| RI1 | External temperature sensor input 1, NTC 10 (0...10 Vdc with AI option) |
| Din | Digital input, potential free contact |
| 485A+ | Modbus RTU / BACnet MS/TP, RS-485 |
| 485B- | |
| G0 | 0 V, common |

Ordering information

| | | Type | 0 | 1 | 2 | 3 | 4 | 5 | 6 | |
|---|-----------------------------|--|---------------------|---|---|---|---|---|---|---|
| 0 | Touchscreen room controller | | 6001 | C | | 2 | | | | |
| 1 | Device type | Room controller | TRC-3A | C | | | | | | |
| 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 ₂ | -CO ₂ | | | | 2 | | | |
| | | Relative humidity and CO ₂ | -RH-CO ₂ | | | | 3 | | | |
| 5 | Advanced options | No advanced options | | | | | | 0 | | |
| | | 2 x 0...10 Vdc input (replaces RI1 & RI2) | -AI | | | | | 1 | | |
| | | Control extension | -CE | | | | | | 2 | |
| | | 2 x 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. |