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DATA SHEET

# TRI-3A

Produal

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# TRI-3A - Touchscreen room unit




TRI-3A touchscreen room units provide attractive user interface and sensor for room control applications. The devices are connected to BMS or controllers via Modbus or BACnet communication interfaces. The analogue models can be used with BMS 0...10 Vdc input cards. The room units have 320 x 480 pixel 255 colour touchscreen that displays the plant and control status information on the modern intuitive user interface.

The room unit includes internal temperature measurement. In addition, models with humidity and/or $CO_2$ measurement are available.

The users can use the unit to change the control settings such as the set point, fan speed and operation mode. They can switch lights and air conditioning units on/off, or activate the Party Mode for extended or boost period.

The room units are equipped with 7-day clock, three 0...10 Vdc analogue outputs, two external sensor inputs and a digital input.

## 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 |

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| Property | Value |
|---|---|
| Accuracy (25 °C / 77 °F) | ±2 %rH (20...80 %rH) |
| Analogue outputs | 3 x 0...10 Vdc, < 5 mA |
| Inputs | |
| Analogue inputs | 2 x external NTC 10 sensor |
| 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 |
| Unit load | 1/2 UL |
| Communication (BAC models) | BACnet MS/TP |
| Bus speed | 9600*/19200/38400/57600/76800 bit/s |
| Parity | none*/odd/even |
| Stop bits | 1 or 2 |
| Unit load | 1/2 UL |
| 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 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 |

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# Wiring

**Warning:** Device wiring and commissioning can only be carried out by qualified professionals. Always make the device wirings in de-energised electricity network.

**Warning:** This product is appliance class III product according to IEC 60664-1. The product may only be connected to SELV (safety extra low voltage) electricity network.

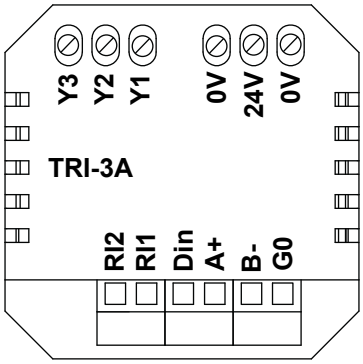
**CAUTION:** The product may only be connected to overvoltage category I or II electricity network according to IEC 60664-1.

**CAUTION:** The used cables must have minimum of 230 Vac insulation for SELV wiring, if the mounting box includes also 230 Vac voltage wirings.

**CAUTION:** Use single stranded wires or use wire end sleeves if multi stranded wires are used.

**CAUTION:** Don't connect fan motors in parallel. One product can control only one fan motor.

**Important:** The supply voltage source must be the same in the controller and in the connected 24 Vac devices.

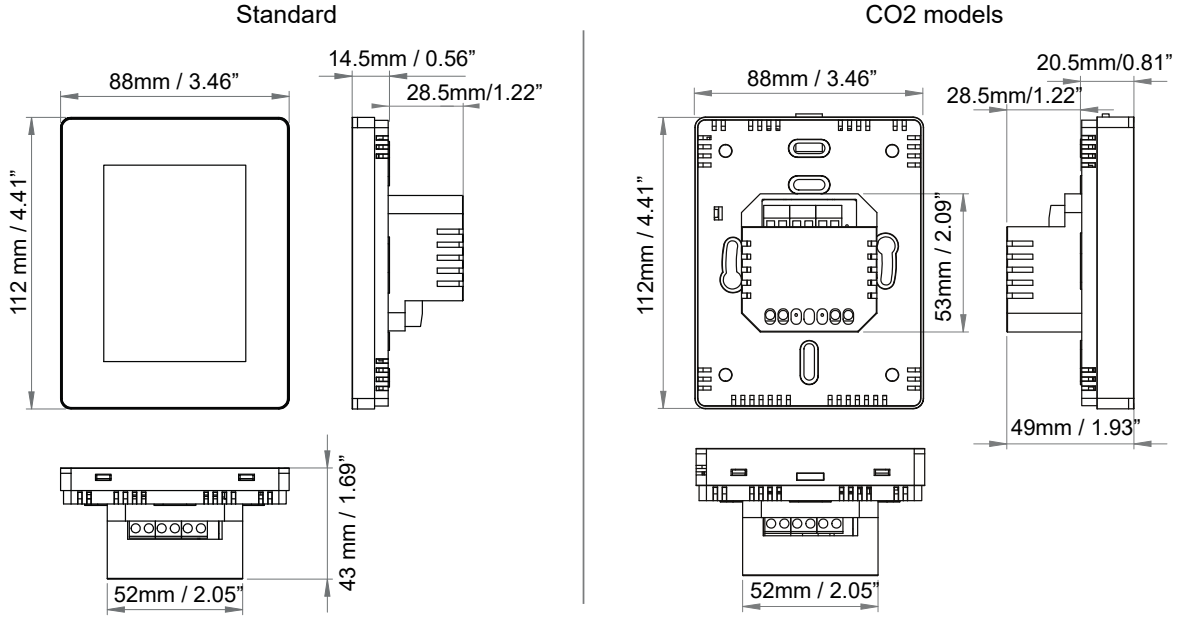



| | |
|---|---|
| *Y3* | Analogue output 3, 0...10 Vdc, configurable (the default function is sensor 3, internal sensor) |
| *Y2* | Analogue output 2, 0...10 Vdc, configurable (the default function is set point) |
| *Y1* | Analogue output 1, 0...10 Vdc, configurable (the default function is fan speed)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

# Ordering information

| | | Type | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| 0 Touchscreen room unit | | | 6001 | 8 | | 2 | | 0 | |
| 1 Device type | Room unit | TRI-3A | | 8 | | | | | |
| 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 | | |
| | $CO_2$ | -CO2 | | | | | 2 | | |
| | Relative humidity and $CO_2$ | -RH-CO2 | | | | | 3 | | |
| 5 Reserved | | | | | | | | 0 | |
| 6 Body colour | 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. |

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