Room CO2 Sensor

CD2RMC Series

The CD2RMC CO2 device uses a highly accurate and reliable non-dispersive infrared (NDIR) sensor in an attractive, low profile enclosure for room applications to monitor CO2 levels. The sensor uses dual wavelength optics and LTA (long term adjustment) signal processing technology to deliver industry leading long-term accuracy and reliability. These technology features ensure optimum measurement stability for both periodic and constant occupancy applications, so the device is equally suitable for the classroom or the hospital room.

PRODUCT HIGHLIGHTS

* Microprocessor based menu setup with LCD
* Field selectable 4-20 mA, 0-5 or 0-10 Vdc outputs
* Reversible analog output signal direction
* Field selectable CO2 measurement span (1000 - 10,000 ppm)
* 24 Vac/dc power supply
* Dual wavelength optics
* LTA (long term adjustment) signal processing technology for long term accuracy
* CO2 accuracy of ± 30 ppm + 3% of measured value
* LCD available as viewable or concealed
* Configurable LCD backlight and display information
* Test modes for analog output and relay
* Optional integral resistive output temperature sensor (thermistor or RTD)
* Optional temperature display with selectable °C/°F units
* Optional resistive output setpoint adjustment with configurable range and resolution
* Optional dry contact override switch
* Optional control relay assignable as high or low alarm for either CO2 or temperature
* Programmable relay setpoint, hysteresis and time delay
* Operating temperature range of 0 - 50 °C (32 - 122 °F)

SPECIFICATIONS

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| DESCRIPTION | ENGINEERING SPEC |
| GAS TYPE DETECTED | Carbon dioxide (CO2) |
| SENSOR TYPE | Dual channel non-dispersive infrared (NDIR) |
| SENSOR ACCURACY | ± (30 ppm + 3% of measured value) |
| MEASUREMENT RANGE | 0-10000 ppm, adjustable 1000 – 10000 ppm |
| TEMPERATURE DEPENDENCY | ±2.5ppm/°C |
| RESPONSE TIME | 20 seconds (T63) |
| WARM-UP TIME | 1 minute |
| SENSOR COVERAGE AREA | 100 m2 (1000 ft2) typical |
| SENSOR LIFE SPAN | > 15 years |
| TRANSMITTER ACCURACY | ± 0.25% of span (including linearity, hysteresis and repeatability) |
| POWER SUPPLY | 24 Vdc ± 20% or 24 Vac ± 10% (non-isolated half-wave rectified) |
| PROTECTION CIRCUITRY | Reverse voltage and transient protected |
| INPUT VOLTAGE EFFECT | Negligible over specified operating range |
| OUTPUT SIGNAL TYPE | 4-20 mA (3-wire), 0-5 or 0-10 Vdc (field selectable) |
| CURRENT CONSUMPTION (4-20 MA OUTPUT) | 75 mA @ 24 Vdc max, 150 mA @ 24 Vac max |
| CURRENT CONSUMPTION (VOLTAGE OUTPUT) | 50 mA @ 24 Vdc max, 100 mA @ 24 Vac max |
| OUTPUT DRIVE @ 24 VDC | 550Ω max (4-20 mA output), 10 KΩ min (voltage output) |
| OPERATING TEMPERATURE | 0 - 50°C (32 - 122°F) |
| STORAGE TEMPERATURE | -40 - 70°C (-40 - 158°F) |
| OPERATING HUMIDITY | 0 to 95 %RH non-condensing |
| LCD DISPLAY UNITS | ppm (CO2), °C/°F (optional temperature/setpoint) |
| DISPLAY RANGE | 0 - 10000 ppm, 0 - 50 °C / 32 - 122 °F |
| DISPLAY SIZE | 1.4 x 0.6” (35 x 15 mm) |
| DIGIT HEIGHT | 2-line x 8 character |
| TEMPERATURE SENSOR (OPTIONAL) | See below |
| TEMPERATURE SENSOR ACCURACY | See below |
| TEMPERATURE SENSOR RANGE | 0 - 50 °C / 32 - 122 °F |
| TEMPERATURE SENSOR OUTPUT | 2-wire resistive |
| RELAY (OPTIONAL 2-WIRE OUTPUT) | Form A (N.O.), 2 Amps @ 140 Vac / 30 Vdc |
| OVERRIDE SWITCH (OPTIONAL 2-WIRE OUTPUT) | 50 mA @ 12 Vdc max |
| SETPOINT CONTROL (OPTIONAL) | Front panel up/down pushbuttons |
| SETPOINT RANGE | ± 10 resistive steps, Range 16-26°C in 0.5°C Increments or  60-80°F in 1°F Increments |
| SETPOINT MIDPOINT | Default 21C/70F, Programmable 18 - 25 °C (64 - 77 °F) |
| SETPOINT RESOLUTION | Programmable 0.5 / 1 °C/°F |
| SETPOINT ACTION | Programmable direct or reverse acting |
| ENCLOSURE MATERIAL | ABS, White |
| ENCLOSURE DIMENSION | 84 x 119 x 29 mm (3.3 x 4.7 x 1.15”) |
| ENCLOSURE PROTECTION | IP30 |
| WIRING | Screw terminal block (14 - 22 AWG) |
| APPROVALS | CE |

Country Of origin: Canada

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| **Sensor**  **Code** | **Temperature Sensor Description** | **Accuracy** |
| 02 | 100Ω Platinum, IEC 751, 385 alpha, 2 wire, Class B | ± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F) |
| 05 | 1,801 Ω NTC thermistor | ± 0.5 °C (± 0.9 °F) @ -20 - 50 °C (-4 - 122 °F) |
| 06 | 3,000 Ω NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 07 | 10,000 Ω (type 3) NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 08 | 2.252 KΩ NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 12 | 1000Ω Platinum, IEC 751, 385 alpha, 2-wire, Class B | ± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F) |
| 13 | 1000Ω Nickel, DIN 43760, 2-wire, Class B | ± 0.4 °C (± 0.72 °F) @ 0 °C (32 °F) |
| 14 | 10,000 Ω (Type 3) NTC thermistor c/w 11 KΩ shunt | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 20 | 20,000 Ω NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 24 | 10,000 Ω (Type 2) NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 59 | 10,000 Ω NTC thermistor | ± 1% @ 25°C (77°F), β25/85 = 3435 ± 1% |