ROOM AIR QUALITY MONITOR

AIR41 Series

The AIR41 Indoor Air Quality Sensor uses an advanced MEMS metal oxide semiconductor sensor to detect poor air quality. The sensor reacts quickly to detect a broad range of VOCs such as smoke, cooking odors, bio-effluence, outdoor pollutants and from human activities. The sensor captures all VOC emissions that are completely invisible to CO2 sensors. The AIR4 provides a linear analog signal output of 0-5 or 0-10 Vdc for connection to a building automation system as well as an analog stepped output of 0-10Vdc. Optional features such as a temperature sensor, manual override and adjustable relay output are available.

PRODUCT HIGHLIGHTS

* Direct correlation to CO2 levels
* High sensitivity and fast response
* Stable long-term operation
* 0 to 2000ppm CO2 equivalent output signal
* LCD to display air quality information
* Internal menu for easy setup
* Analog stepped output for damper control
* Linear output for logging and control
* Selectable 0-5 or 0-10 Vdc signal
* Tri-color LED to indicate IAQ level
* Optional relay output with adjustable setpoint
* Optional override switch output
* Optional resistive temperature sensors

SPECIFICATIONS

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| DESCRIPTION | ENGINEERING SPEC |
| SENSOR TECHNOLOGY | MEMS metal oxide semiconductor VOC sensor |
| MEASUREMENT RANGE | 450-2000 ppm CO2 equivalent or 0-100% (menu selectable) |
| DRIFT COMPENSATION | Automatic baseline correction |
| POWER SUPPLY | 20-28 Vac/dc (non-isolated half-wave rectified) |
| CONSUMPTION | 35 mA max @ 24 Vdc |
| INPUT VOLTAGE EFFECT | Negligible over specified operating range |
| PROTECTION CIRCUITRY | Reverse voltage protected, over voltage protected |
| OPERATING CONDITIONS | 0 to 50°C (32 to 122°F), 5 to 95 %RH non-condensing |
| LINEAR OUTPUT SIGNAL | 0-5 / 0-10 Vdc (menu selectable) = 0-2000 ppm CO2 equivalent |
| ANALOG STEPPED OUTPUT SIGNAL | Three steps representing Good, Fair, and Poor air quality  (each step is independently adjustable from 0-10 Vdc) |
| OUTPUT DRIVE CAPABILITY | 10,000 Ω minimum |
| PROGRAMMING AND SELECTION | Via internal push-buttons and LCD menu |
| WARM-UP TIME | 5 minutes |
| LCD RESOLUTION | 1 ppm / 1% |
| LCD SIZE | 35mm W x 15mm H (1.4” x 0.6”) alpha-numeric 2 line x 8 characters |
| LED INDICATOR | Tri-color (Good = Green, Fair = Blue, Poor = Red), enable or disable via menu |
| WIRING CONNECTIONS | Screw terminal block (14 to 22 AWG) |
| OPTIONAL OVERRIDE SWITCH | Front panel switch with FET output, 30 Vdc @ 50 mA max |
| RELAY OUTPUT | Form A contact (N.O. or N.C.) 2 Amps @ 140 Vdc,  2 Amps @ 30 Vdc (Relay action, trip point and hysteresis set via menu |
| OPTIONAL TEMPERATURE SENSOR | See chart below |
| ENCLOSURE | Wall mount enclosure, white ABS IP30 (NEMA 1) |
| DIMENSIONS | 84mm W x 119mm H x 29mm D (3.3” x 4.7” x 1.15”) |
| 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% |