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DATA SHEET

# IAQRM

Produal

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GREYSTONE
ENERGY SYSTEMS INC

## INDOOR AIR QUALITY SERIES




IAQRM SERIES

## PRODUCT DESCRIPTION

The IAQ will monitor up to 6 parameters that include Particulate Matter (PM1, PM2.5, PM4 & PM10), Volatile Organic Compounds, Carbon Dioxide, Formaldehyde, Humidity & Temperature and provide either a BACnet® or Modbus signal for connection to a building automation system. The IAQ features field replaceable sensor modules, a full-colour capacitive touch screen LCD that's user configurable, a configurable alarm relay output. All this housed in a new modern, quick mount enclosure.

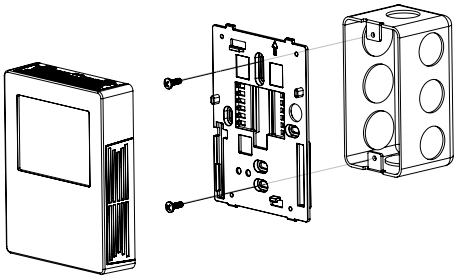
The IAQ facilitates compliance with ASHRAE 62.1 standard for air quality and contributes toward satisfying the RESET$_{TM}$ Air Standard and Features A08 and T06 under the WELL Building Standard®.

**NOTE:** This $CO_2$ sensor incorporates a Self Calibration feature to correct $CO_2$ sensor drift. This feature is recommended for applications where the $CO_2$ level will be close to normal (400 ppm) at least one hour per day. If the monitored space is occupied 24 hours or consistently maintains higher or lower levels of $CO_2$, it is recommended that this feature be turned off, but yearly calibration will be required.

## TYPICAL INSTALLATION

**For complete installation and wiring details, please refer to the product installation instructions.**

The IAQ series can be mounted directly to a single gang electrical box or directly to a wall. The backplate includes many mounting hole configurations to allow for mounting on a variety of electrical boxes.
The IAQ has a screw block terminal provided for connection to the Building Automation System.



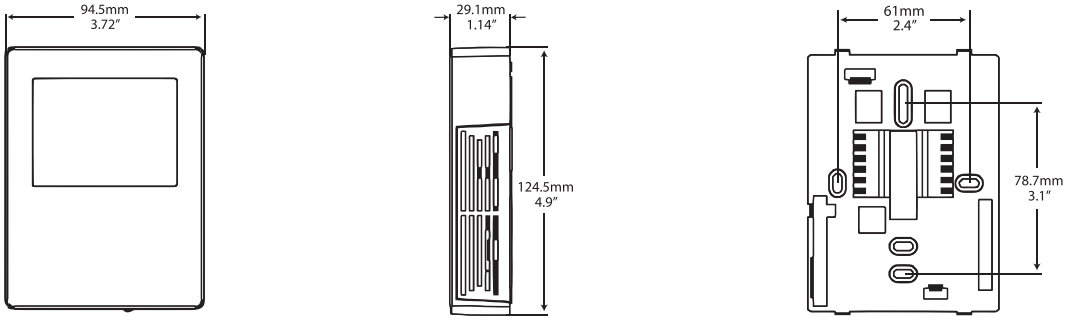
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|---|---|
| **PARTICULATE MATTER (PM)** | |
| Type | Laser Scatter Method (Field Replaceable) |
| Particulate Size | PM1.0, PM2.5, PM4.0, and PM10 |
| Mass Concentration Range | 0 - 1000 ug/m$^3$ or 0 - 3000 #/cm$^3$ (Selectable) |
| Mass Concentration Resolution | 1 (ug/m$^3$, 1#/cm$^3$) |
| Accuracy PM1.0 and PM2.5 | ±5 ug/m3 + 5% (0 – 100 ug/m3), ±10%M.V. (100 – 1000 ug/m3) |
| Accuracy PM4 and PM10 | ±25 ug/m$^3$ (0 – 100 ug/m$^3$), ±25%M.V. (100 – 1000 ug/m$^3$) |
| Sensor Life Expectancy | > 10 years |
| **CARBON DIOXIDE ($CO_2$)** | |
| Type | Dual channel non-dispersive infrared (Field Replaceable) |
| Accuracy | ± (30ppm + 3% of measured value) |
| Range | 0 - 10000 ppm |
| Auto-Cal | Selectable On (ASC) or Off (FRC) |
| Altitude Adjustment | 0 - 3000 meters |
| Calibration | Field calibration capable with calibration kit |
| Sensor Life Expectancy | > 15 years |
| **VOLATILE ORGANIC COMPOUNDS (VOC)** | |
| Type | MOX metal oxide semiconductor (Field Replaceable) |
| Range | VOC Index (0 - 500) or TVOC (5-1382 ppb or 23-6220 ug/m3) |
| Resolution | 1 (VOCI, PPB, ug/m$^3$) |
| **RELATIVE HUMIDITY (RH)** | |
| Type | Thermoset polymer-based capacitance sensor chip (Field Replaceable) |
| Range | 0 -100% RH |
| Accuracy | ±1.5% RH |
| Resolution | 0.1% RH |
| Calibration | +/- 10% Offset |
| **TEMPERATURE (TEMP)** | |
| Type | Bipolar transistor sensor chip (Field Replaceable) |
| Range | 0 to 60°C, 32 to 140°F |
| Accuracy | ± 0.2°C, ± 0.4°F (Typical) |
| Resolution | 0.1°C/°F |
| Calibration | -5 to 5°C Offset, Resolution = 0.1°C ;-10 to 10°F Offset, Resolution = 0.1°F |
| **FORMALDEHYDE ($CH_20$)** | |
| Type | Electrochemical (Field Replaceable) |
| Range | 0 - 1000 ppb or 0 - 1230 ug/m$^3$ |
| Accuracy | ±10% FS@25°C |
| Resolution | 1 (ppb, ug/m$^3$) |
| Sensor Life Expectancy | > 6 years |
| **NETWORK INTERFACE** | |
| Hardware | MS/TP, 2-Wire, RS-485 |
| Software | BACnet® or Modbus |
| Baud Rate | 9600, 19200, 38400, 57600, 76800, or 115200 |
| Address Range | BACnet®: 0 - 127, Modbus: 1 - 255 |
| **RELAY** | |
| Contact Rating | Form A, 2A max 24Vac/dc |
| Switching Power | 60W, 62.5VA |
| Setpoint/ Hysteresis /Delay | Selectable based on selected sensor |
| Relay Setpoints (Selectable) | PM Mass Concentration: 50 - 900 ug/ m$^3$; VOC: 100 - 500 VOC Index; CH2O: 50 - 900 ppb; CO2: 500 - 9000 ppm; Humidity: 20 - 90%; Temperature: 5 - 40°C / 40 - 100°F |
| Relay Configuration | Via BACnet®/Modbus |
| **VISUAL INDICATION** | |
| Display | 3.5" full colour graphic LCD |
| User Interface | Capacitive Touchscreen |
| Display Options | Viewable or Concealed |
| Display Parameters | Temperature and Humidity - Standard<br>CO2, VOC, PM & CH2O - Selectable On/Off |
| Status Bars | Green/Yellow/Red - Selectable On/Off |
| Status LED | Green/Yellow/Red - Selectable On/Off |
| **ENCLOSURE** | |
| Material | White PC/ABS, UL94-V0, UV Protected |
| Connection | Wall plate with screw terminal blocks |
| Dimensions | 124.5 mm H x 94.5 mm W x 29 mm D (4.9" x 3.72" x 1.14") |
| **GENERAL** | |
| Power Supply | 12-28 Vac/Vdc, 50/60 Hz |
| Consumption | Maximum 150mA @ 12Vdc, 1.8W |
| Protection Class | III |
| Wiring Termination | Backplate mounted terminal block (14 to 22 AWG) |
| Operating Conditions | 0 to 60°C (32 to 140°F), 0 to 95 %RH non-condensing |
| Sensor Coverage | 100 m$^2$ (1000 ft$^2$) typical |
| Certifications | CE, UKCA, RESET® AIR Accredited |

Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.

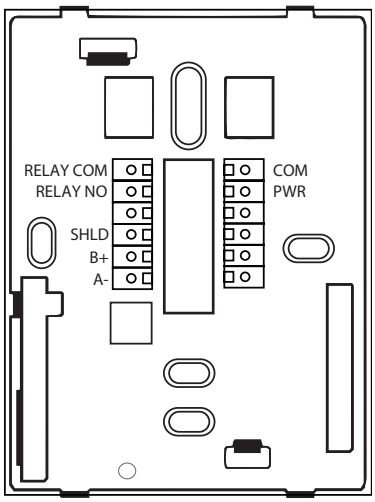
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## DIMENSIONS




## WIRING INFORMATION




| TERMINAL | FUNCTION |
|---|---|
| RELAY COM | Relay Common |
| RELAY NO | Relay Output - Normally Open Contact |
| SHLD | Network Output |
| B+ | Network Output |
| A- | Network Output |
| COM | Common |
| PWR | +24 Vdc/ac |

## ORDERING

| | | |
|---|---|---|
| PRODUCT | **IAQRM** | Indoor Air Quality, Room |
| PRODUCT PARAMETERS | **5X** | PM, $CO_2$, TVOC, RH & Temp |
| | **6F** | PM, $CO_2$, TVOC, RH, Temp & $CH_2O$ |
| DISPLAY | **V** | Viewable LCD |
| | **C** | Concealed LCD |

## PART NUMBER

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|---|
| **IAQRM** |
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## ACCESSORIES

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|---|---|---|
| ITEM | **IAQA** | IAQ Series Replacement Sensor Modules |
| SENSOR | **PMXFRS** | Particulate Matter |
| | **CO2FRS** | Carbon Dioxide |
| | **VHTFRS** | VOC, Humidity & Temperature |
| | **FORFRS** | Formaldehyde |

## PART NUMBER

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|---|
| **IAQA** |
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RoHS COMPLIANT
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Greystone Energy Systems, Inc.
150 English Drive, Moncton,
New Brunswick, Canada E1E 4G7

Ph: +1 (506) 853-3057 Fax: +1 (506) 853-6014
North America: 1-800-561-5611
E-mail: mail@greystoneenergy.com


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