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 Feature A08 and T06 under the WELL Building Standard®.
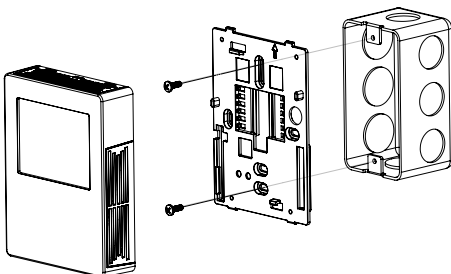
NOTE: This CO_2 sensor incorporates a Self Calibration feature to correct CO_2 sensor drift. This feature is recommended for applications where the CO_2 level will be close to normal (400 ppm) at least one hour per day. If the monitored space is occupied 24 hours or consistently maintains higher or lower 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.
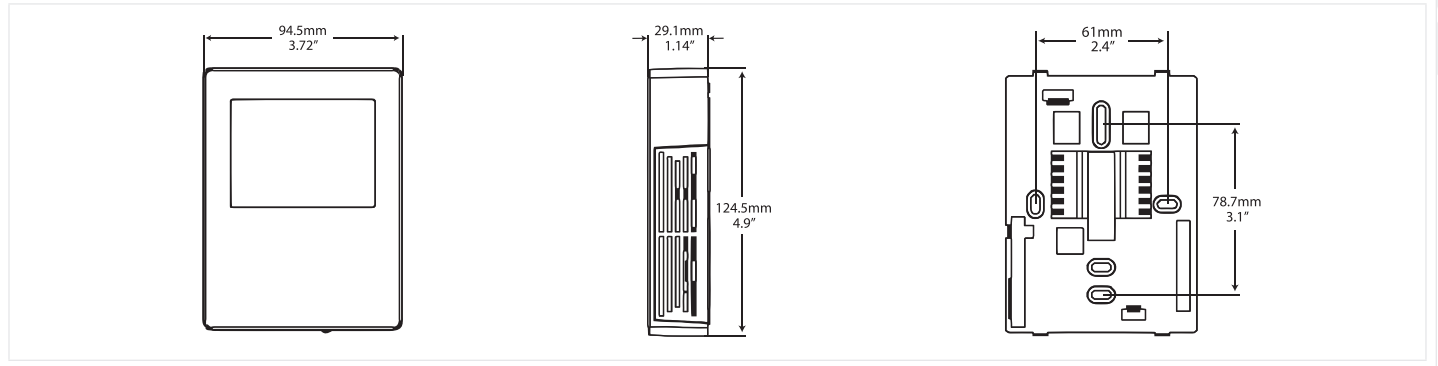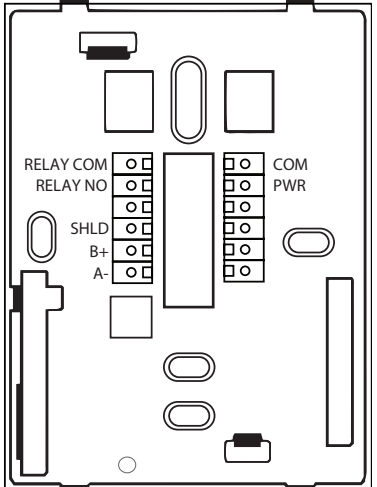The IAQ has a screw block terminal provided for connection to the Building Automation System.

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/m³ or 0 - 3000 #/cm³ (Selectable)
Mass Concentration Resolution	1 (ug/m³, 1#/cm³)
Accuracy PM1.0 and PM2.5	±10 ug/m³ (0 – 100 ug/m³), ±10%M.V. (100 – 1000 ug/m³)
Accuracy PM4 and PM10	±25 ug/m³ (0 – 100 ug/m³), ±25%M.V. (100 – 1000 ug/m³)
Sensor Life Expectancy	> 10 years
CARBON DIOXIDE (CO₂)	
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 (1300 ppb or 6000 ug/m³)
Resolution	1 (VOCI, PPB, ug/m³)
RELATIVE HUMIDITY (RH)	
Type	Thermoset polymer-based capactiance 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 (CH₂0)	
Type	Electrochemical (Field Replaceable)
Range	0 - 1000 ppb or 0 - 1230 ug/m³
Accuracy	±10% FS@25°C
Resolution	1 (ppb, ug/m³)
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/Hysterisis/Delay	Selectable based on selected sensor
Relay Setpoints (Selectable)	PM Mass Concentration: 50 - 900 ug/ m³; 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 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
Comsumption	Maximum 150mA @ 12Vdc, 1.8W
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 m² (1000 ft²) typical
Certifications	CE

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

DIMENSIONS

94.5mm
3.72"

29.1mm
1.14"

124.5mm
4.9"

61mm
2.4"

78.7mm
3.1"

WIRING INFORMATION

RELAY COM
RELAY NO

SHLD
B+
A-

COM
PWR

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 6F	PM, CO_2, TVOC, RH & Temp PM, CO_2, TVOC, RH, Temp & CH_2O
DISPLAY	V C	Viewable LCD Concealed LCD

PART NUMBER

IAQRM

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