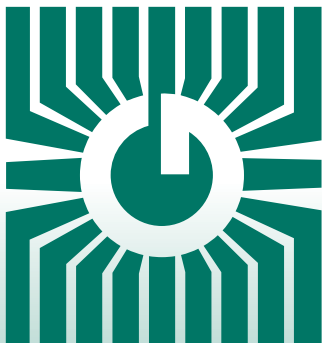
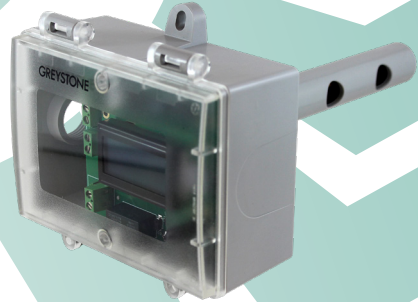


GREYSTONE ENERGY SYSTEMS INC



AIR QUALITY TRANSMITTER AIR4/AQ Series



Precision air quality control/sensing

FEATURES:

- True Air Quality Monitor
- Microprocessor based controller
- Linear and stepped analog output
- Optional relay output
- Optional temperature sensor
- LCD Display
- Polycarbonate enclosure with hinged and gasketed cover

*Peace of mind
through reliable
air quality monitoring*

GREYSTONE HAS AN ISO 9001 REGISTERED QUALITY SYSTEM

OPERATION:

The AIR4, Indoor Air Quality (IAQ) 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.

Extensive studies and research have shown that there is direct correlation between CO2 levels and VOC levels and the Air Quality Sensor has been calibrated to provide a "CO2-equivalent" ppm measurement value, thereby achieving full compatibility to existing HVAC CO2 ventilation standards. The sensor also includes control algorithms that correct sensor drift and aging and therefore provides a long-term consistent DCV solution while overcoming the deficiencies of CO2 measurement by detecting the true root-cause of ventilation demand, VOCs. The IAQ sensor emulates the human perception of air quality much more than a CO2 sensor and even detects odorless, potentially hazardous substances such as carbon monoxide.

The CO2-equivalent sensor output value was developed over a period of several years to allow the IAQ sensor to be optimized for Demand Controlled Ventilation applications. The long-term IAQ sensor performance was monitored in various locations including offices, cafeterias, schools, production facilities, apartments and homes in direct comparison to infrared-absorption CO2 sensors. The data shows consistent results between measured CO2 values and the IAQ CO2-equivalent values and also highlight the poor air quality events detected by the IAQ sensor that the CO2 sensor misses. The above sample chart shows CO2 measurements vs. IAQ measurements.

Typical Indoor Air VOC Contaminants		
Contamination Source	Emission Source	VOCs
Human Being	Breath Skin Respiration and Perspiration Flatus Cosmetics Household Supplies Combustion	Acetone, Ethanol, Isoprene Nonanal, Decanal, a-Pinene Methane, Hydrogen Limonene, Eucalyptol Alcohols, Esters, Limnene Unburnt Hydrocarbons
Office Equipment Building Material Furniture Consumer Products	Printers, Copiers, Computers Paint, Adhesive, Solvent, Carpet PVC (Poly Vinyl Chloride)	Benzene, Styrene, Phenole Formaldehyde, Alkanes, Aldehydes, Ketones Toluene, Xylene, Decane

SPECIFICATIONS:

Sensing 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	0-50°C (32-122°F), 5-95 %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 KΩ minimum
Programming and Selection	Via internal push-buttons and LCD menu
Warm-up Time	5 minutes
LCD Resolution	1 ppm / 1%
LCD Size	35 mm W x 15 mm H (1.4" x 0.6") alpha-numeric 2 line x 8 characters
LCD Backlight	Enable or disable via menu
LED Display (Room Only)	Tri-color (Good = Green, Fair = Blue, Red = Poor), enable or disable via menu
Wiring Connections	Screw terminal blocks, 14 to 22 AWG
Duct Probe	152 mm L x 22.5 mm D (6" x 0.88")
Relay Output	Optional on Room, Standard on Duct Form A contact (N.O.) 5 Amps @ 250 Vac, 5 Amps @ 30 Vdc for resistive load 2 Amps @ 250 Vac, 2 Amps @ 30 Vdc for inductive load (trip point and hysteresis set via menu)
Optional Temperature Sensor	Various thermistors and RTDs, 2-wire resistive output
Enclosure	Room: White ABS, UL94-5VB, IP30 (NEMA 4X) Duct: Grey polycarbonate, UL94-V0 IP65 (NEMA 4X)
Dimensions	Room: 84 mm W, 119 mm H, 29 mm D (3.3", 4.7", 1.15") Duct: 116.5 mm W, 99.7 mm H, 53.7 mm D (4.58", 3.93", 2.11")
Override Switch (Room Only)	Front panel switch with FET output, 30 Vdc @ 50 mA max
Country of Origin	Canada

PRODUCT SELECTION INFORMATION (AIR4):

MODEL	Product Description																						
AIR41	Room Air Quality Monitor, 0-2000 ppm CO ₂ Equivalent																						
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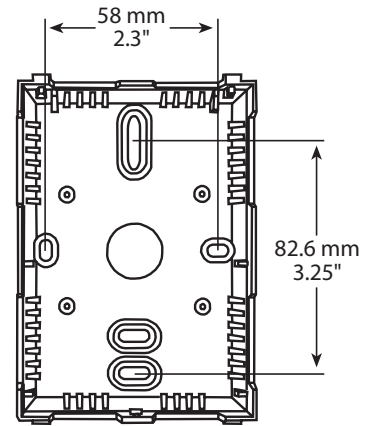
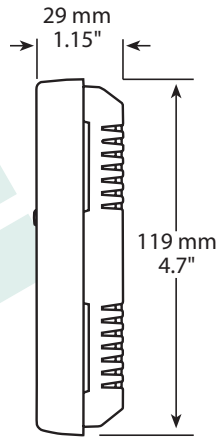
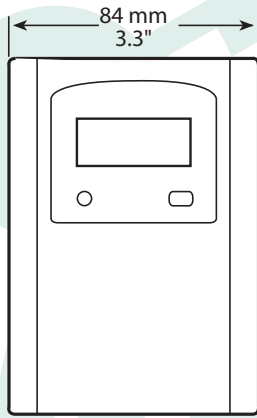
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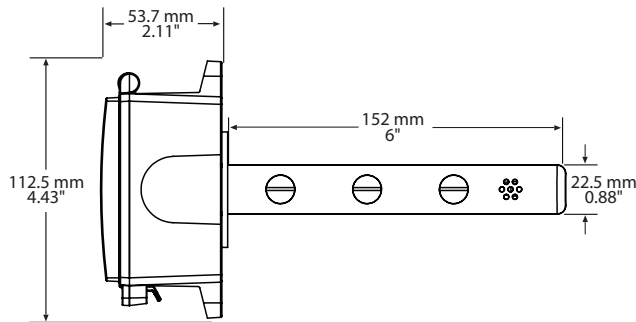
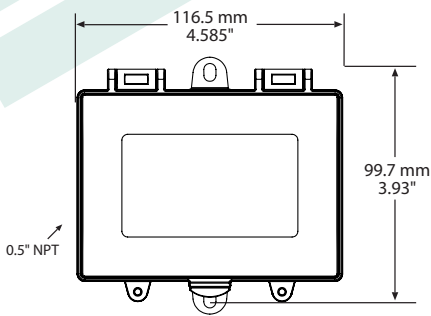
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DIMENSIONS:

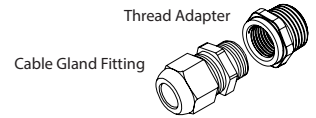
AIR4



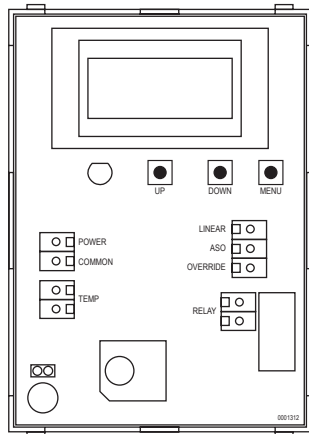
AQ



Included with F style enclosure



PCB/WIRING INFORMATION:



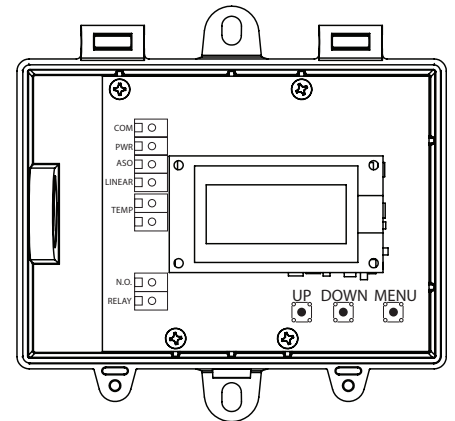
Terminal

POWER
COMMON
LINEAR
ASO
OVERRIDE
*TEMP
*TEMP
*RELAY
*RELAY

Function

Power Input
Power & Signal Common
Analog Output 0-5 or 0-10 Vdc
Analog Stepped Output 0-10 Vdc
Digital Output (Room Only)
Resistive Temperature Sensor
Resistive Temperature Sensor
Relay Output
Relay Output

*Terminals only present if option ordered



GREYSTONE
ENERGY SYSTEMS INC

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RoHS
COMPLIANT



Greystone Energy Systems Inc. is one of North America's largest ISO registered manufacturers of HVAC/R sensors and transmitters for Building Automation Management Systems.

We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.

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