GREYSTONE ENERGY SYSTEMS INC

TECHNICAL DATA SHEET **B8 Series**



BACNET EXPLOSION PROOF GAS DETECTORS

The B8 Series of Explosion Proof Gas Detectors are used for applications that require a more rugged enclosure and meet Class 1 Division 2 requirements. Each unit comes standard with a digital display of concentration, relay status, STEL, TWA, and peak daily value of the gas detected. A three-color backlight will flash depending on the level of alarm for operator safety. Set-up and calibration are accomplished through non-intrusive hardware that allows programming of all parameters. Sensor types include electrochemical PID and Infrared and catalytic bead to meet the demands and performance standards of particular industries. Communication is accomplished through BACnet and three user-programmable relay contacts. Remote explosion-proof sensing is available for all types of gases.

- **BACnet communication**
- **Three on-board Relays**
- **Non-Intrusive calibration**
- **Tri-Colour flashing warning screens**
- **Display of TWA, STEL, Peak daily value**
- **Electrochemical, Infrared , Photoionization (PID) and catalytic bead sensor technologies**
- **Built-in clock**

SPECIFICATIONS

POWER SUPPLY	24 VDC Nominal, range 18-30 VDC, 0.3 A DC Total Max 24 VAC Nominal, range 15-24 VAC, 0.3 A AC Total Max Half wave rectified only, AC must not be grounded
FUSE	F2 on Main Board: Polyswitch 750mA Polyswitch device resets after the fault is cleared and power to the circuit is removed
SUPPLY CURRENT |POWER CONSUMPTION	Max 300mA | 7.2W
SENSING ELEMENT TECHNOLOGY	Combustible gases: Catalytic or NDIR Toxic gases and Oxygen: Electrochemical Carbon Dioxide: Non-Dispersive Infra-Red (NDIR) VOC gases : Photoionization (PID)
SENSOR LIFE	Electrochemical (Toxic): 2 to 3 Years, typical Oxygen (Toxic): 2 years, typical Catalytic (Combustible): 3 to 5 years, typical Infrared: > 5 years Photoionization(VOC) 5Years (excluding replaceable lamp and electrode stack)
DISPLAY	LCD graphic display c/w backlight
PANEL CONTROL	Keypad: 3magnetic switches keys: F1, F2, F4
PANEL INDICATOR	5 Status LED's RS-485 TX & RS-485 RX (Green) Relay 1, Relay 2, Relay 3 (Red)
WARM UP TIME	1 hour to 72 hours Specific to gas type
RELAYS OUTPUTS	3 Relays SPDT (Form C), dry contacts 1.0 A maximum at 30 VDC (resistive load) 0.3 A maximum at 125 VAC (resistive load)
TIME DELAYS	Actuation (Make) or De-Actuation (Break) @ 0 - 999 seconds
RELAYS LIFE EXPECTANCY	Mechanical @ 50 million & Electrical @ 200,000 operations

RoHS COMPLIANT

Greystone Energy Systems, Inc.
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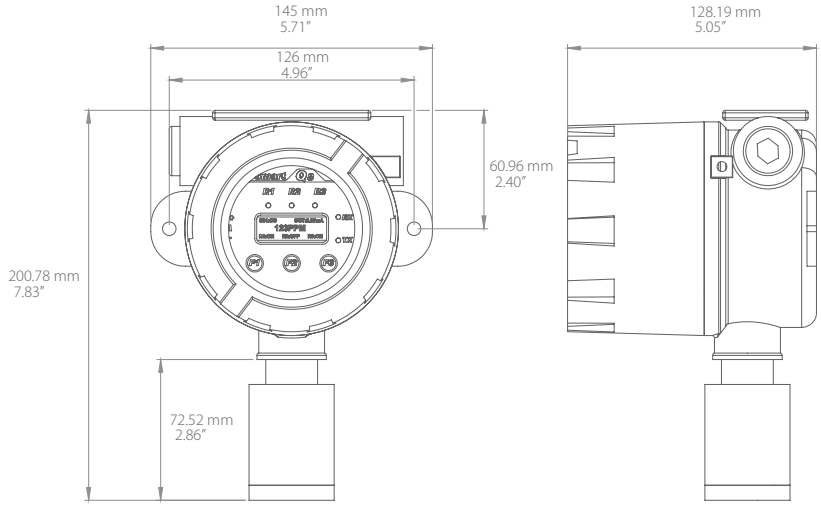
SPECIFICATIONS

DIGITAL OUTPUT	RS-485 Serial BACnet® MS/TP (Master & Slave protocol)
BAUD RATE	9600,19200,38400,76800 Bits/Second (default:38400)
OPERATING ENVIRONMMENT	Indoor Use only
OPERATING TEMPERATURE	(see table of gas)
STORAGE TEMPERATURE	0°C to 40°C, depends on sensor specification
OPERATING HUMIDITY	5% to 95% RH non condensing
OPERATING PRESSURE	Atmospheric +/-10%
ENCLOSURE	Aluminium Pressure Die–Casting Entries: 2X ¾ NPT
WIRING	12 AWG to 24 AWG for Screw Terminals Blocks(De -Pluggable), 16 AWG or 18 AWG wire for Power supply (1km max)
CABLE SPECIFICATION	BELDEN 9841 or equivalent ,120 ohms Input
WEIGHT	Less than 1.8kg (3.97lbs)
CERTIFICATE	CSA C22.2 No.30 Class I, Groups A, B, C, D, Class II,Groups E, F, G; Class III Enclosure Type Nema 4X, Division 1 Division 2 ANSI/ISA 12.22.01Class I, Zone 1 AEx d II C, IP66 Zone 1 CSA E60079-1 Ex d II C, Class I, Zone 1, IP66

Ensure a complete understanding of all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

DIMENSIONS



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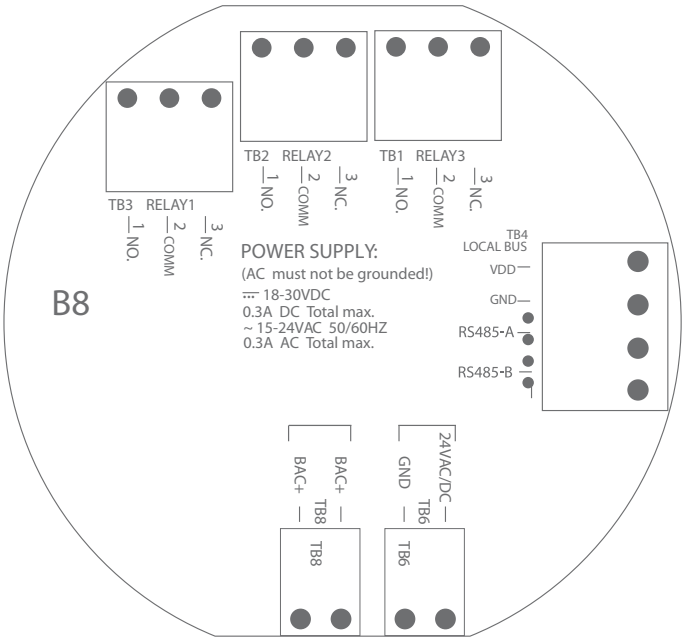
WIRING INFORMATION



B8

TERMINAL		FUNCTION
TB1 TB2 TB3	NC: Normally Close COM: Common NO: Normally Open	3 x Relays Outputs
TB4	VDD GND A+ B-	Local bus Main board
TB6	24VDC GND	Power IN Half wave
TB8	BAC+ BAC-	BACnet port

ORDERING CODE

B8	C3H6O-100L	-0	-A	-G
Product Series	Gas Ordering Code (See Gas Table for other Gas Code)	Enclosure Type -0: Enclosure, Standard -R: Remote Mount Sensor	Revision	Greystone Product

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GAS TYPE		SPAN RANGE	GAS ORDERING CODE	SENSING TECHNOLOY	AREA FT2 (M2)	RADIUS FT (M)	MOUNTING HEIGHT	OPERATING TEMPERATURE F (C)
Acetone	C3H6O	0-100%LEL	C3H6O-100L	Catalytic Bead	5000 (464.5)	40(12.2)	Low	-40 to 122 (-40 to 50)
Ammonia	NH3	0-100ppm	NH3-100P	Electrochemical	7500 (696.7)	49(14.9)	High	-22 to 122 (-30 to 50)
Ammonia	NH3	0-1000ppm	NH3-1000P	Electrochemical	7500 (696.7)	49(14.9)	High	-22 to 122 (-30 to 50)
Benzene	C6H6	0-100% LEL	C6H6-100L	Catalytic Bead	5000 (464.5)	40(12.2)	Low	-40 to 122 (-40 to 50)
Iso-Butane	C4H10	0-100% LEL	C4H10-100L	Catalytic Bead	5000 (464.5)	40 (12.2)	Low	-40 to 122 (-40 to 50)
Butanol n-Butane	BUTAN	0-100% LEL	BUTAN-100L	Catalytic Bead	5000 (464.5)	40 (12.2)	Low	-40 to 122 (-40 to 50)
Carbon Monoxide	CO	0-250ppm	CO-250P	Electrochemical	7500 (696.7)	49 (14.9)	Mid	- 4 to 122 (-20 to 50)
Carbon Monoxide	CO	0-1000ppm	CO-1000P	Electrochemical	7500 (696.7)	49 (14.9)	Mid	- 4 to 122 (-20 to 50)
Carbon Dioxide	CO2	0-5000ppm	ICO2-5000P	Infrared	7500 (696.7)	49 (14.9)	Mid	- 4 to 122 (-20 to 50)
Carbon Dioxide	CO2	0-5% VOL	ICO2-5V	Infrared	7500 (696.7)	49 (14.9)	Mid	- 4 to 122 (-20 to 50)
Chlorine	Cl2	0-5PPM	Cl2-5P	Electrochemical	5000 (464.5)	40 (12.2)	Low	- 4 to 122 (-20 to 50)
Chlorine Dioxyde	ClO2	0-2PPM	ClO2-2P	Electrochemical	5000 (464.5)	40 (12.2)	Low	- 4 to 122 (-20 to 50)
Combustibles* **	GENL	0-100%LEL	GENL-100L	Catalytic	5000 (464.5)	40 (12.2)	Gas Dependent	- 40 to 122 (-40 to 50)
Ethylene	C2H4	0-100%LEL	C2H4-100L	Catalytic Bead	5000 (464.5)	40 (12.2)	Mid	-40 to 122 (-40 to 50)
Ethylene Oxide	ETO	0-20PPM	ETO-20P	Electrochemical	5000 (464.5)	40 (12.2)	Low	- 4 to 122 (-20 to 50)
Hydrogen	H2	0-1000PPM	H2-1000P	Electrochemical	7500 (696.7)	49 (14.9)	High	- 4 to 122 (-20 to 50)
Hydrogen	H2	0-2000PPM	H2-2000P	Electrochemical	7500 (696.7)	49 (14.9)	High	- 4 to 122 (-20 to 50)
Hydrogen	H2	0-100% LEL	H2-100L	Catalytic Bead	7500 (696.7)	49 (14.9)	High	-40 to 122 (-40 to 50)
Hydrogen Chloride	HCl	0-30PPM	HCl-30P	Electrochemical	5000 (464.5)	40 (12.2)	Mid	- 4 to 122 (-20 to 50)
Hydrogen Cyanide	HCN	0-50PPM	HCN-50P	Electrochemical	5000 (464.5)	40 (12.2)	Mid	- 4 to 122 (-20 to 50)
Hydrogen Sulphide	H2S	0-25PPM	H2S-25P	Electrochemical	5000 (464.5)	40 (12.2)	Low	- 4 to 122 (-20 to 50)
Hydrogen Sulphide	H2S	0-100PPM	H2S-100P	Electrochemical	5000 (464.5)	40 (12.2)	Low	-4 to 122 (-20 to 50)
Methane	CH4	0-100%LEL	CH4-100L	Catalytic Bead	7500 (696.7)	49 (14.9)	High	-40 to 122 (-40 to 50)
Methanol	CH3OH	0-100%LEL	CH3OH-100L	Catalytic Bead	5000 (464.5)	40 (12.2)	Low	-40 to 122 (-40 to 50)
Nitric Oxide	NO	0-100PPM	NO-100P	Electrochemical	7500 (696.7)	49 (14.9)	Mid	- 4 to 122 (-20 to 50)
Nitrogen Dioxide	NO2	0-10ppm	NO2-10P	Electrochemical	7500 (696.7)	49 (14.9)	Low	- 4 to 122 (-20 to 50)
Oxygen	O2	0-25% v/v	O2-25V	Electrochemical	7500 (696.7)	49 (14.9)	Mid	-22 to 122 (-30 to 50)
Ozone	O3	0-1PPM	O3-1P	Electrochemical	5000 (464.5)	40 (12.2)	High	- 4 to 122 (-20 to 40)
Iso-Pentane	C5H12	0-100%LEL	C5H12-100L	Catalytic Bead	5000 (464.5)	40 (12.2)	Low	-40 to 122 (-40 to 50)
Propane	C3H8	0-100%LEL	C3H8-100L	Catalytic Bead	7500 (696.7)	49 (14.9)	Low	-40 to 122 (-40 to 50)
Sulphur Dioxide	SO2	0-6PPM	SO2-6P	Electrochemical	5000 (464.5)	40 (12.2)	Low	- 4 to 122 (-20 to 50)
Methane	CH4	0-100%LEL	ICH4-100L	Infrared	75000(696.7)	49(14.9)	High	-40 to 158 (-40 to 70)
Methane	CH4	0-100%VOL	ICH4-100V	Infrared	75000(696.7)	49(14.9)	High	-40 to 158 (-40 to 70)

***Low** = 0.5 to 1.5' (0.15 to 0.46m) above floor

***Mid** = 4.0 to 6.0'(1.20to 1.83m) above floor

***High** = 0.5 to 1.5' (0.15 to 0.46m) below ceiling

**** Available Gases under GENL Code:** Diesel, Ethanol, Acetone, Methanol, Jet Fuel, Kerosene, Propylene, IPA, etc. For other gases, please contact Greystone Energy Systems Inc.

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