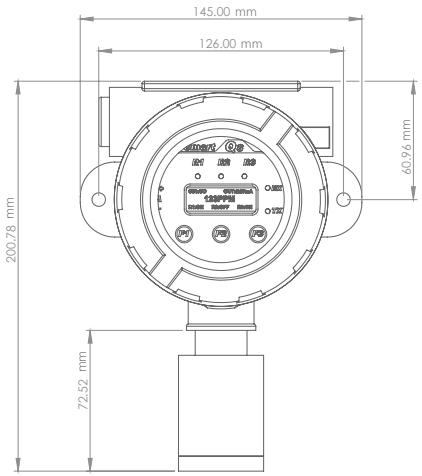
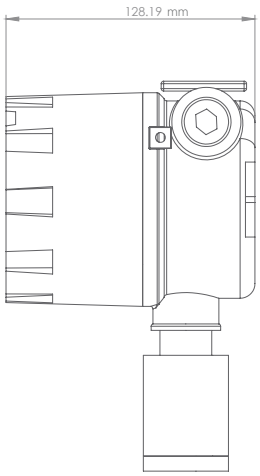
GREYSTONE
ENERGY SYSTEMS INC

ANALOG EXPLOSION PROOF GAS DETECTORS





Q8 SERIES

PRODUCT DESCRIPTION

The new Q8 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-colour backlight will flash depending on the level of alarm for operator safety. Set-up and calibration is accomplished through non-intrusive hardware that allows programming of all parameters. Remote sensors are available for all types of gases. Sensor types include electrochemical, catalytic bead, PID, and infrared to meet the demands and performance standards of particular industries. Communication is accomplished through Optomux and Modbus RS-485, 4-20 mA, and 3 user-programmable relay contacts.

- **RS-485 communication**
- **3 on-board relays**
- **4-20 mA, 1-5 VDC or 2-10VDC analog output**
- **Non-Intrusive calibration**
- **Tri-Colour flashing warning screens**
- **Display of TWA, STEL, Peak daily value**
- **Electrochemical, catalytic bead, infrared PID and sensor technologies**
- **Built-in clock**

SPECIFICATIONS

VOLTAGE	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 AC Power 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	0.3A maximum | 8.4 VA
SENSING ELEMENT TECHNOLOGY	Combustible gases: Catalytic or NDIR Toxic gases and Oxygen: Electrochemical Carbon Dioxide: Non-Dispersive Infra-Red (NDIR) VOC : PID
SENSOR LIFE	Electrochemical (Toxic): 2 to 3 Years, typical Oxygen/Hydrogen (Toxic): 18 months, typical Catalytic (Combustible): 3 to 5 years, typical Infrared: > 5 years PID : approx. 5 years

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SPECIFICATIONS

SHELF LIFE	Electrochemical (toxic) : 6 months from the date of purchase Catalytic (combuistible : 1 Year from date of purchase
DISPLAY	LCD graphic display c/w backlight
PANEL CONTROL	Keypad: 3 magnetic switches : F1,F2,F3
PANEL INDICATOR	5 Status LED's RS-485 TX Status (Green) RS-485 RX Status (Green) Relay 1 Status (Red) Relay 2 Status (Red) Relay 3 Status (Red)
WARM UP TIME	1 hour to 3 days
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 : 0-999 seconds De-actuation : 0-999 seconds
RELAYS LIFE EXPECTANCY	Mechanical : 50,000,000 Operations minimum @36000 operations/hours electrical : 200000 operations minimum @ rated load
ANALOG OUTPUTS	4-20mA , 2-10 VDC or 1-5 VDC Analog Signal Output
DIGITAL OUTPUT	RS-485 Modbus RTU/OptoMux (Proprietary GES Controller Protocol) connects to Q4C Controller, M-Controller and Q-Controller
BAUD RATE	1200, 2400, 4800,9600, 14400, 19200, 28800, 38400, 57600, 76800 Bits/Second (Default: 4800 BPS)
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
STORAGE 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
DIMENSIONS	145mm X 190mm X 130mm
WEIGH	Less than 1.8kg

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

ACCESSORIES

Q-CONTROLLER	Communication central unit, RS-485 port, Modbus protocol, BACnet /IP, 3 Relay , 128 Analog outputs
M-CONTROLLER	Communication central unit, RS-485 port, Modbus protocol, BACnet /IP, 3 Relay , 8 Analog outputs
Q4C- CONTROLLER	Communication central unit, RS-485 port, Modbus protocol, BACnet /IP, 4 Relays

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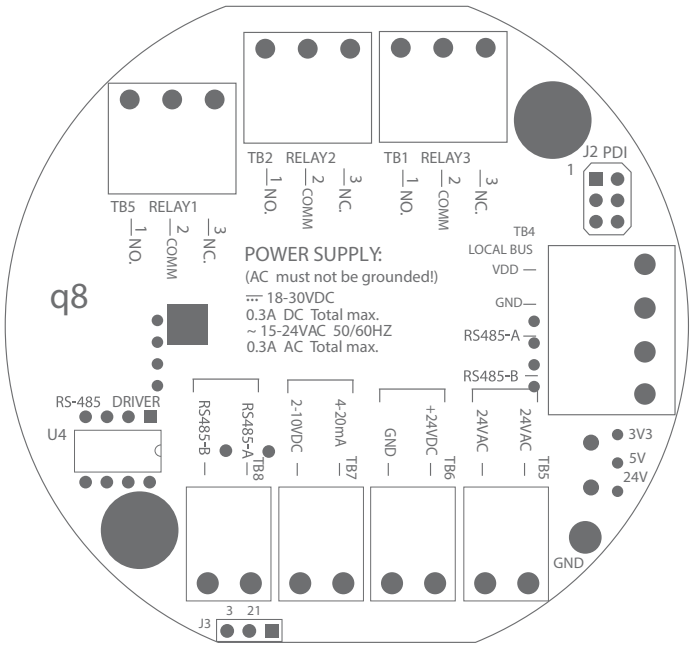
WIRING INFORMATION



Q8

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
TB5	24VAC 24VAC	Power IN Full Wave
TB7	4-20mA 2-10VDC 1-5VDC	Analog Output
TB8	A+ B-	RS-485 port for OPTOMUX and MODBUS
TB6	24VDC GND	Power IN Half Wave

ORDERING CODE

Q8	-							-					-		-	X	-	G

Gas Ordering Code
(See Below for Code)

Span Ordering Code
(See Below for Code)

Enclosure Type
Enclosure, Standard ..... **O**
Remote Mount Sensor ..... **R**

Revision (Factory Provided)..... **X**

Greystone Product ..... **G**

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GAS TYPE		SPAN RANGE	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 to70)
Methane	CH4	0-100%VOL	ICH4-100V	Infrared	75000(696.7)	49(14.9)	High	-40 to 158(-40 to70)

***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

RoHS COMPLIANT

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