GREYSTONE ENERGY SYSTEMS INC

TECHNICAL DATA SHEET **Q8 Series**



ANALOG EXPLOSION PROOF GAS DETECTORS

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**
- **Three on-board Relays**
- **4-20 mA, 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

POWER SUPPLY	24 Vac (15-24 Vac); 24 Vdc (18-30Vdc)
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: 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
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 & 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 : 0-999 seconds De-actuation : 0-999 seconds

RoHS COMPLIANT

PRINTED IN CANADA

Copyright © Greystone Energy Systems Inc. All Rights Reserved

Greystone Energy Systems, Inc.
321 Desbrisay Avenue, Moncton,
New Brunswick, Canada E1E 0J2

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

www.greystoneenergy.com

SPECIFICATIONS

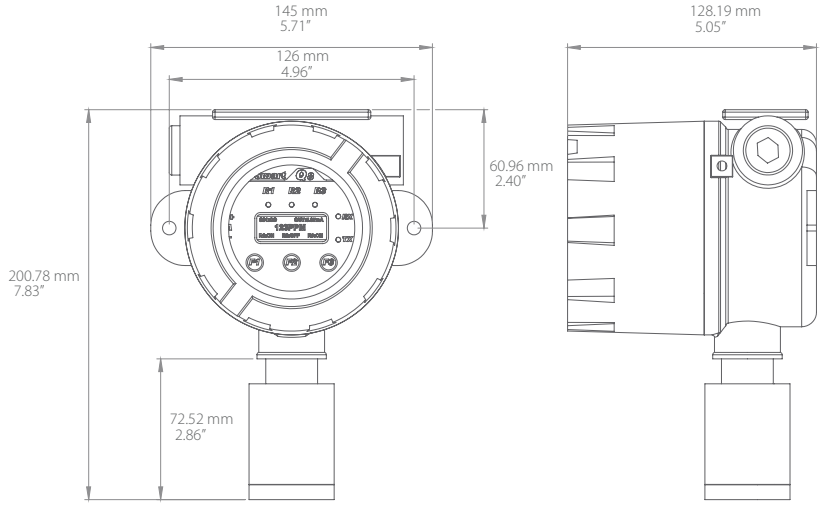
RELAYS LIFE EXPECTANCY	Mechanical @ 50 million & Electrical @ 200,000 operations
ANALOG OUTPUTS	4-20mA , 2-10 VDC or 1-5 VDC (linear, 3-wire)
DIGITAL OUTPUT	RS-485 Modbus RTU/OptoMux (Proprietary GES Controller Protocol) connects to Q4C Controller, M-Controller and Q-Controller
BAUD RATE	1200, 2400, 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 to 40°C (32 to 104°F), 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)
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.

ACCESSORIES

Q-CONTROLLER	Communication central unit, RS-485 port, Modbus protocol, BACnet /IP, 3 Relay , 128 Analog outputs
M-CONTROLLER 2	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

DIMENSIONS

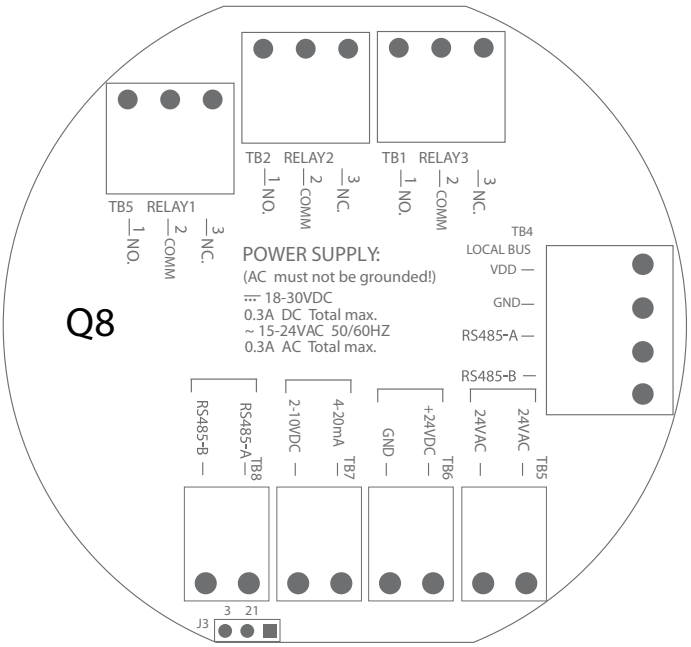


Copyright © Greystone Energy Systems Inc. All Rights Reserved

Greystone Energy Systems, Inc.
321 Desbrisay Avenue, Moncton,
New Brunswick, Canada E1E 0J2

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

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	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

Copyright © Greystone Energy Systems Inc. All Rights Reserved
Greystone Energy Systems, Inc.
321 Desbrisay Avenue, Moncton,
New Brunswick, Canada E1E 0J2
Ph: +1 (506) 853-3057 Fax: +1(506) 853-6014
North America: 1-800-561-5611
E-mail: mail@greystoneenergy.com

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.

Copyright © Greystone Energy Systems Inc. All Rights Reserved
Greystone Energy Systems, Inc.
321 Desbrisay Avenue, Moncton,
New Brunswick, Canada E1E 0J2

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