Instructions

Eagle Quantum Premier®
General Purpose Electronic Based
Fire and Gas Alarm Control Panel and Automatic Releasing for Pre-Action and Deluge Systems
EQ3900G Series

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DET-TRONICS

INSTRUCTIONS

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General Purpose Electronic Based Fire and Gas Alarm Control Panel and Automatic Releasing for Pre-Action and Deluge Systems
EQ3900G Series

DESCRIPTION

As part of providing the total solution to commercial and industrial clients from around the world, Detector Electronics Corporation offers several configurable enclosures.

The enclosures described in this document, along with the installed equipment, are FM/CSA Approved for use in general purpose locations. When Eagle Quantum Premier® Controller and System Modules are intended to be installed in non-hazardous areas such as control rooms. These enclosures provide protection from electrical circuits and key/tool limited access to control functions.

FEATURES

- General purpose location installation
- Optional redundant controllers
- Louver and ventilator kits available
- Simple wire installation into terminal blocks
- Factory configurable device selection for the enclosure
- Choice of operators and relays
- Electronics and wiring tested at the factory

ENCLOSURE

Depending upon the equipment selection, the front door may be supplied with a window, as well as various indicators and operators.

If a controller is installed, the front door will have a window kit and operators installed into the door. If two controllers are installed, the front door will have two window kits and operators installed into the door. The window allows an operator to view the controller's display and LED status indicators.

Last Manual Change: 02.March.2020

SPECIFICATIONS

INPUT VOLTAGE—
For use with external DC power source: 24 Vdc nominal, 18 to 30 Vdc, 150 amps max.

POWER CONSUMPTION—
Refer to the Eagle Quantum Premier manual (number 95-8533), Section 3, Tables 3-1 and 3-2 for system power requirements.

TEMPERATURE RANGE—
Operating: +32°F to +122°F (0°C to +50°C).
Storage: –4°F to +158°F (–20°C to +70°C).

HUMIDITY—
5% to 80% RH, non-condensing.

CERTIFICATION—
FM/CSA:

Refer to the Eagle Quantum Premier manual (number 95-8533) for system certification details.

WEIGHT (Without Electronic Assemblies)*—

24Hx20W Wall Mount with panel,
43 lbs. minimum, 53 lbs. maximum.

36Hx24W Wall Mount with panel,
88 lbs. minimum, 91 lbs. maximum.

48Hx24W Wall Mount with panel,
127 lbs. minimum, 133 lbs. maximum.

82.7Hx32W Floor Mount (front access only, or front and rear access),
Approximately 425 lbs. Consult factory for final weight.

20Hx16W Wall Mount Power System
Approximately 25 lbs. Consult factory for final weight.

20Hx20W Wall Mount Power System
Approximately 30 lbs. Consult factory for final weight.

* Total weight dependent on cabinet depth. See EQP Enclosures Model Matrix.

INSTALLATION

The enclosure must be securely bolted in place.

MOUNTING

Refer to the appropriate system drawing for mounting dimensions.

ENCLOSURE ENTRY

The number and position of wiring entries must be specified when the enclosure is ordered. The enclosures can accept a certain number and size of entries as specified by enclosure manufacture. Only manufacturer recommended cable glands can be used with the enclosures. Consult with Det-Tronics on the exact number and sizes of entries that are available for each enclosure.

WIRING INSTRUCTIONS

Factory wiring is made to the appropriate terminals located inside the enclosure. Electrical wiring schematics for the custom device configuration are provided with the enclosure. Field wiring and field wiring tags are the responsibility of the customer.

SYSTEM COMPONENTS

EQP SYSTEM COMPONENTS

The following devices can be used in EQ3900G enclosures as part of the FM/CSA Approved EQP System:

EQ3XXX -	EQP Controller
EQ3700DCIO -	Discrete Input/Output Module
EQ3710AIM -	Analog Input Module
EQ3720RM -	Relay Module
EQ3730EDIO -	Enhanced Discrete Input/Output Module
EQ3750ASH -	Addressable Smoke and Heat Module
EQ3760ASM -	Addessable Smoke Module
EQ3780HSDM -	High Speed Deluge Module
EQ2100PSM -	Power Supply Monitor
EQ2220GFM -	Ground Fault Monitor
EQ2230RSP -	RS485 Surge Protection
EQ3LTM -	LON Termination Module
HIM	HART Interface Module
000499-061	RS232-to-Ethernet Converter
000499-062	RS485-to-Ethernet Converter
000511-037	RS232-to-RS485 Converter
000499-063	RS485-to-Fiber Converter
000511-050	RS485-to-Fiber Converter
000128-191	Physical Disconnect Switch

Refer to the Eagle Quantum Premier manual (number 95-8533) for operation details.

The quantity and type of modules are always project specific per Factory Order and drawing packet supplied with the order. The I/O allocation may be moved from factory assigned terminals after notification to Det-Tronics.

NOTE

MOXA RS-232/RS-485 Fiber Optic Converter and Phoenix RS-232/RS-485 Ethernet Converters are not FM Approved as stand-alone devices. They are used with FM/CSA Approved EQP system.

NOTES

1. *New inputs/outputs may be wired onto spare channels after factory notification.*
2. *One-for-one replacement of failed modules is permitted.*
3. *Modifications and/or repairs should be performed by trained personnel only.*

OPERATORS

Enclosures may be equipped with selector switches, pilot lights and push-buttons, and panel horns. Contact Det-Tronics for information regarding model and type of operators approved for use with EQ3900G series enclosures. The quantity, type of operators and their application are always project specific per Factory Order and drawing packet supplied with the order. Approved push-button quantities for use in Acknowledge and Silence applications vary depending on manufacturer. The I/O allocation may be moved from factory assigned terminals after notification to Det-Tronics. See Notes 4 and 5 in Figures 1 thru 3 for configuration change details.

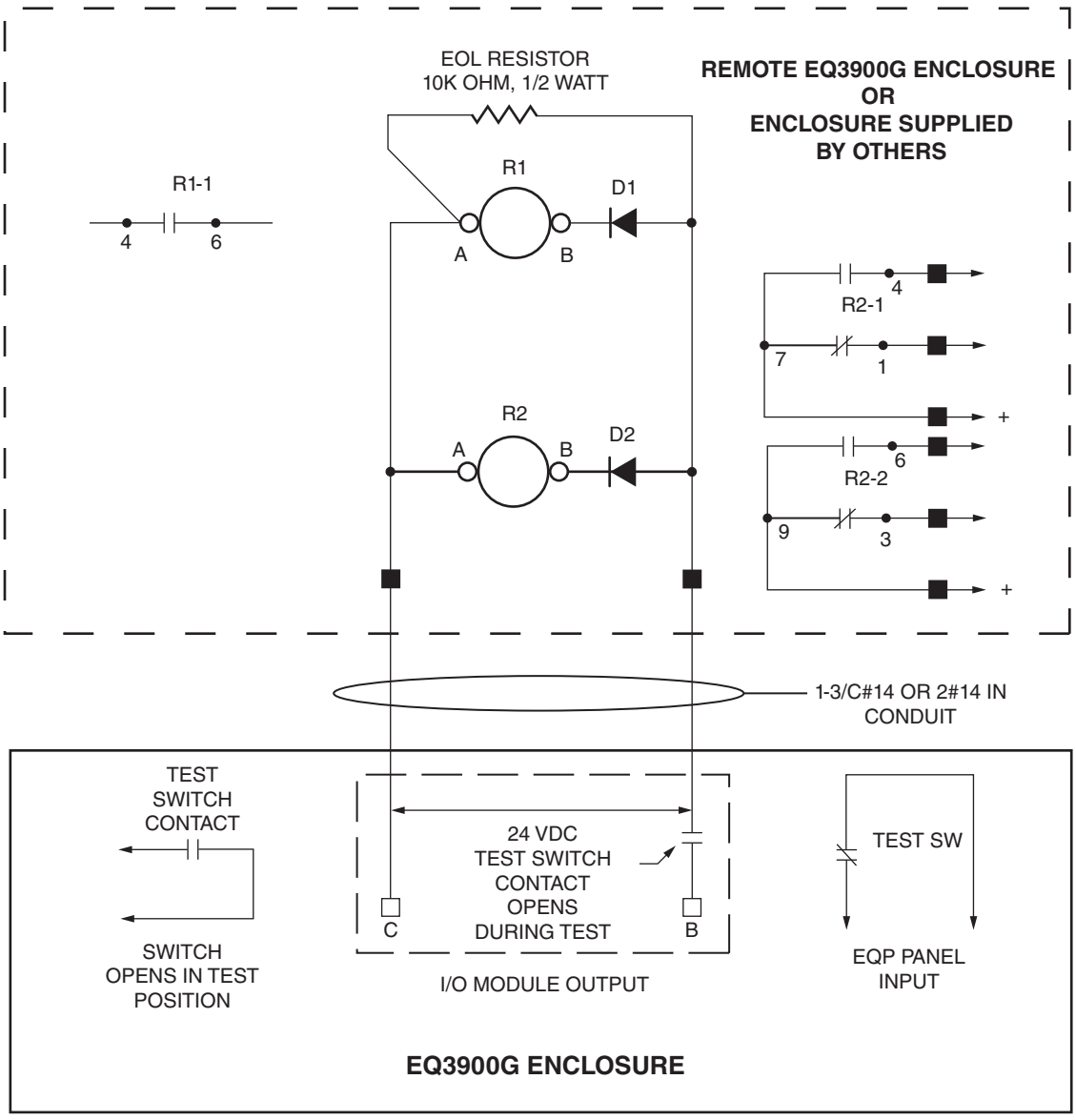
NOTE

Per FM3010/NFPA 72 requirements, Acknowledge and Silence push-buttons must be used with padlocking covers with locks as guards against unauthorized operations. Padlocking covers are offered by Det-Tronics and factory installed as guards with Acknowledge and Silence push-buttons. Locks are not included.

ACTIVATION RELAYS

Four activation relays (two Tyco and two Phoenix Contact relays) are available for use with the EQP system. Activation relays are intended for occasional use. They are typically used for HVAC control where they become actuated primarily when the protected area is in an alarm condition. For relay wiring connections, see Figure 1 for Tyco relays and Figures 2 and 3 for Phoenix Contact relays. Tyco relays can be installed inside the EQ3900G enclosure, or inside the customer's provided enclosure at site, while still connected to I/O modules within the EQ3900G enclosure. When Tyco relays are located in the customer's enclosure, installation, wiring and operation of Tyco relays must meet all requirements of the local Authority Having Jurisdiction (AHJ). Phoenix Contact relays are installed only within EQ3900G enclosures. For additional information regarding relays, see Tyco product catalog 1308242 or Phoenix Contact product data sheets 101780-en-02 and 100516-03-en.

TYCO RELAYS IN HVAC APPLICATIONS



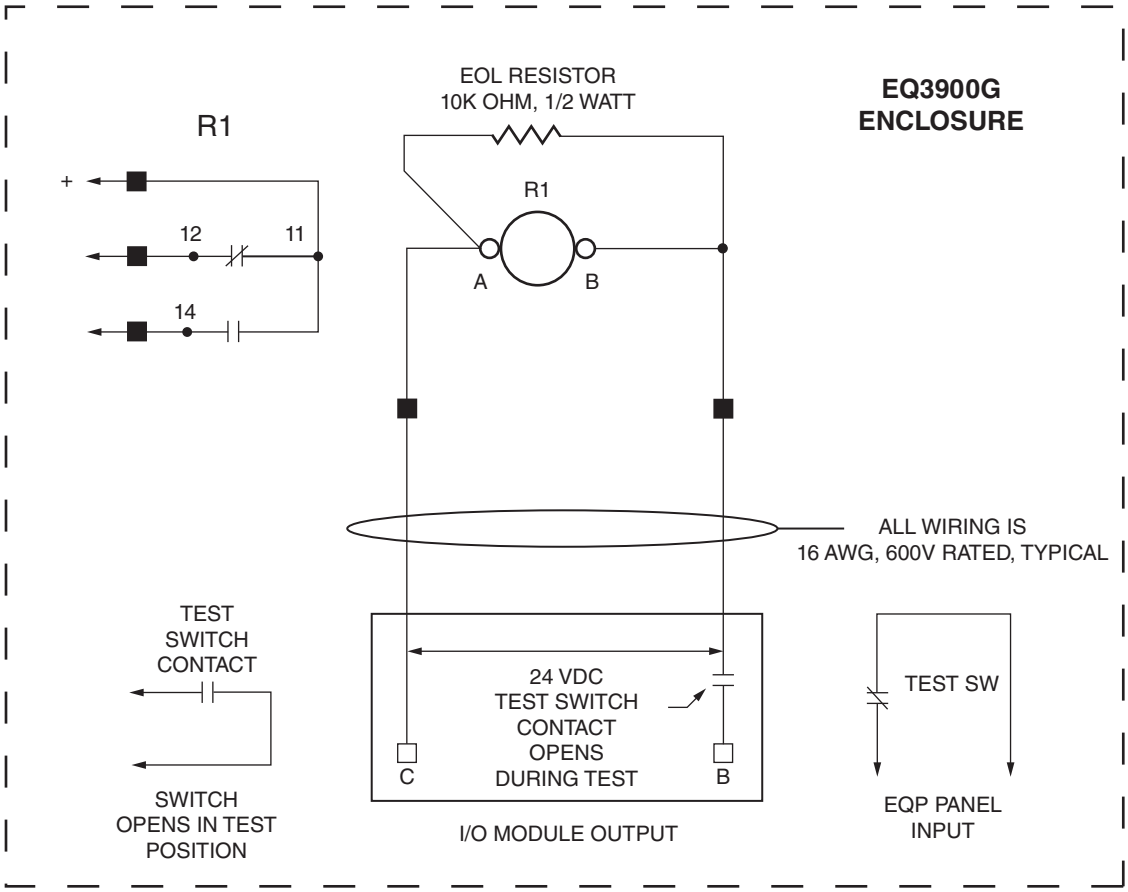
R1 - TYCO KUEP-3D15-24
(DEC P/N 000123-198)

R2 - TYCO KUP-11D15-24
(DEC P/N 000123-199)

NOTES:
1. D1 & D2 ARE SUPERVISORY DIODES:
   D1 - IN4004 (RECTIFIER, 1A, 400V) OR D2 - GI501 (RECTIFIER, 3A, 50V).
2. OPTIONAL TEST SWITCH IN ENCLOSURE ALLOWS TESTING OF TRIP CIRCUIT.
3. TEST SWITCH WILL BLOCK ACTIVATION OF TRIP CIRCUIT DURING SENSOR TESTING.
4. THE I/O ALLOCATION MAY BE MOVED FROM FACTORY ASSIGNED TERMINALS AFTER FACTORY NOTIFICATION. ALL CHANGES MUST BE DOCUMENTED.
5. MODIFICATIONS AND/OR REPAIRS SHOULD BE PERFORMED BY TRAINED PERSONNEL ONLY.
6. WHEN TYCO RELAYS ARE INSTALLED IN REMOTE ENCLOSURE, THE MAXIMUM WIRING LENGTH BETWEEN I/O MODULE AND RELAYS IS 3000 FEET (914 METERS) USING 14 AWG WIRE.
7. TYCO RELAYS MAY BE INSTALLED IN THE SAME ENCLOSURE WITH I/O MODULE. INTERNAL WIRING IS 16 AWG, RATED 600 VOLTS TYPICAL.

Figure 1—Typical Supervised Output Configuration Using Tyco Relays

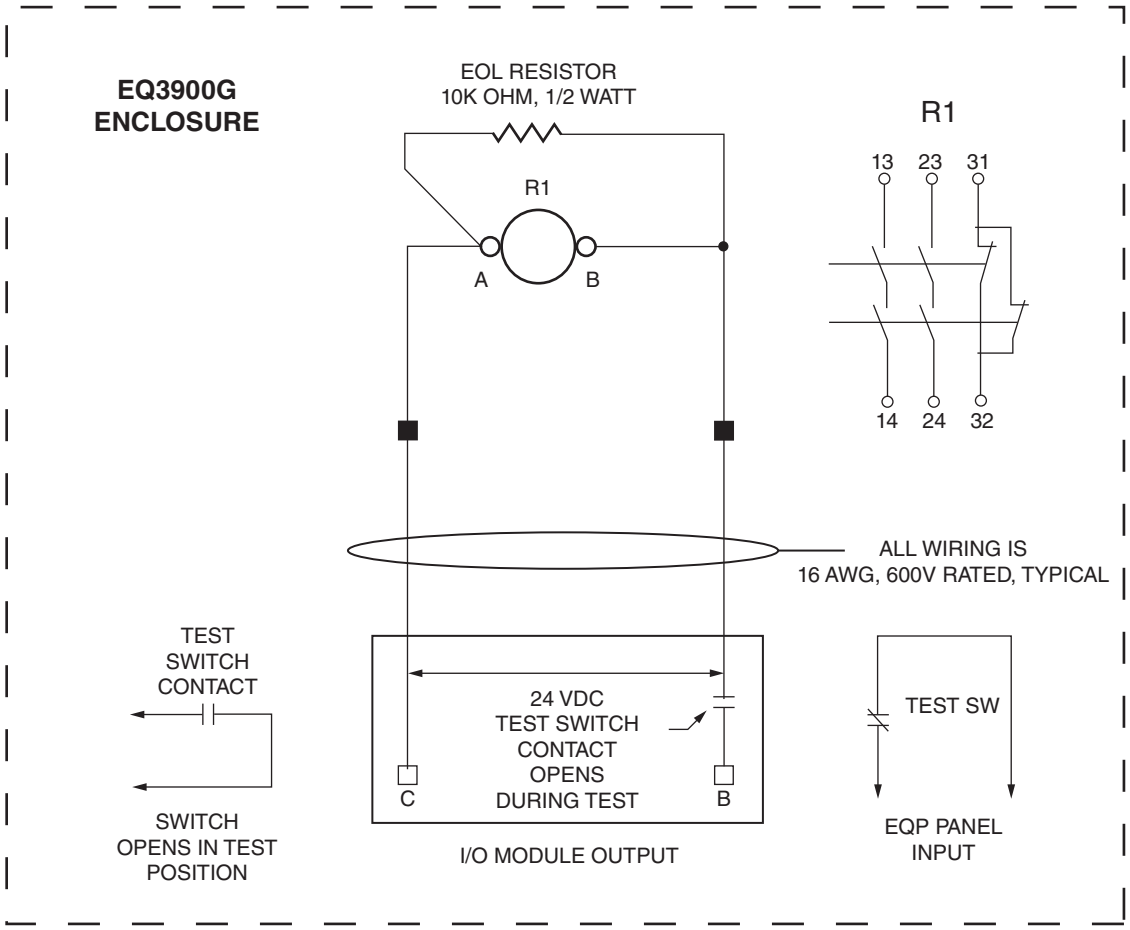
PHOENIX CONTACT RELAY MODEL 2966171 IN HVAC APPLICATIONS



NOTES:
1. PHOENIX RELAY 2966171 (DEC P/N 000123-196) IS EQUIPPED WITH INTERNAL SUPERVISORY DIODE.
2. OPTIONAL TEST SWITCH IN ENCLOSURE ALLOWS TESTING OF TRIP CIRCUIT.
3. TEST SWITCH WILL BLOCK ACTIVATION OF TRIP CIRCUIT DURING SENSOR TESTING.
4. THE I/O ALLOCATION MAY BE MOVED FROM FACTORY ASSIGNED TERMINALS AFTER FACTORY NOTIFICATION. ALL CHANGES MUST BE DOCUMENTED.
5. MODIFICATIONS AND/OR REPAIRS SHOULD BE PERFORMED BY TRAINED PERSONNEL ONLY.

Figure 2—Typical Supervised Output Configuration Using a Phoenix Contact Relay Model 2966171

PHOENIX CONTACT RELAY MODEL 2981020 IN HVAC APPLICATIONS



NOTES:
1. PHOENIX RELAY 2981020 SIL3 (DEC P/N 000123-197) IS EQUIPPED WITH INTERNAL SUPERVISORY DIODE.
2. OPTIONAL TEST SWITCH IN ENCLOSURE ALLOWS TESTING OF TRIP CIRCUIT.
3. TEST SWITCH WILL BLOCK ACTIVATION OF TRIP CIRCUIT DURING SENSOR TESTING.
4. THE I/O ALLOCATION MAY BE MOVED FROM FACTORY ASSIGNED TERMINALS AFTER FACTORY NOTIFICATION. ALL CHANGES MUST BE DOCUMENTED.
5. MODIFICATIONS AND/OR REPAIRS SHOULD BE PERFORMED BY TRAINED PERSONNEL ONLY.

Figure 3—Typical Supervised Output Configuration Using a Phoenix Contact Relay Model 2981020

ORDERING INFORMATION

For assistance in ordering a system to fit your application, please contact:

Detector Electronics Corporation
6901 West 110th Street
Minneapolis, Minnesota 55438 USA
Operator: (952) 941-5665 or (800) 765-FIRE
Customer Service: (952) 946-6491
Fax: (952) 829-8750
E-mail: det-tronics@det-tronics.com

or contact your local sales office, which can be found on the Det-Tronics web site:
www.det-tronics.com

EQ3900G Model Matrix

MODEL	DESCRIPTION	
EQ3900G	EQP, General Purpose Enclosure Solution	
	TYPE	CONFIGURATION
	XXXXXXXX-XXX	Sales Order # Drawing Packet

EQ3900G EQP System Enclosure Solutions									
Enclosure Options			EQP System Controller, Modules, and Devices						
Cabinet Size (HxWxD)	Access Door	Internal Mounting Panels	EQ3xxx Cont.	EQ3xx Modules	EQ2220GFM	EQ2230RSP	EQ3LTM	HIM	Physical Disconnect Switch
24x20x08	F	1	1	≤2	1	Y	≤1	Y	Y
24x20x10									
24x20x12									
36x24x08			≤2	≤4			≤2		
36x24x10									
36x24x12									
48x24x10				≤6					
48x24x12									
83x32x24		3		≤12					
83x32x32									
83x32x24	F & R	4		≤18					
83x32x32									

Notes:
Optional windows with and without opening. Operators and passive venting allowed. Quantities and sizes are limited by physical enclosure size and installed equipment.

F = Front, R = Rear, Y = Optionally installed as specified by customer/system needs. Multiple RSP(s) and HIM(s) are allowed as physical space permits.

Operators include Lamps (white, red, green, and amber), push-buttons, (single and double), selector switches (2 & 3 position), and key switches (2 & 3 position.

EQ37xx Modules = EQ3700DCIO, EQ3710AIM, EQ3720RM, EQ3730EDIO, EQ3750ASM, EQ3760ASM and EQ3780HSDM.

Terminal blocks, relays, circuit breakers, lock out switches and fuses, may be installed with quantities limited by physical space. All third party components must be NRTL Listed. Installation must follow OEM requirements.

Converters: RS232 to Ethernet converter (DEC PN 000499-061), RS485 to Ethernet converter (DEC PN 000499-062), RS232 to RS485 converter (DEC PN 000511-037), RS485 to fiber converter (DEC PN 000499-063), RS485 to fiber converter (DEC PN 000511-050).

EQ3900G Power Distribution / Monitoring Enclosure Solution			
Enclosure and Construction Options		EQP Modules	
Size		EQ2220GFM	EQ2100PSM
20x16x06	Front access only, no windows or operators, passive venting, a single mounted panel	1	1
20x16x08			
20x20x06			
20x20x08			

Notes:
Terminal blocks, relays, circuit breakers, and fuses, may be installed with quantities limited by physical space. All third party components must be NRTL Listed. Installation must follow OEM requirements.

EQUIPMENT SAFETY SYMBOLS

Symbol	Description
	Direct current
	Alternating current
	Both direct and alternating current
	Three-phase alternating current
	Earth (ground) current
	Protective conductor terminal
	Frame or chassis terminal
	On (power)
	Off (power)
	Equipment protected throughout by double insulation or reinforced insulation
	Caution, possibility of electric shock
	Caution, hot surface
	Caution*
	In position of bi-stable push control
	Out position of bi-stable push control
	Ionizing radiation

* Manufacturer to state that documentation must be consulted in all cases where this symbol is marked.

95-8641

FlexSonic® Acoustic
Leak Detector

X3301 Multispectrum
IR Flame Detector

PointWatch Eclipse® IR
Combustible Gas Detector

FlexVu® Universal Display
with GT3000 Toxic Gas Detector

Eagle Quantum Premier®
Safety System

Det-Tronics manufacturing system is certified to ISO 9001—
the world's most recognized quality management standard.

Carrier

DET-TRONICS

Corporate Office
6901 West 110th Street
Minneapolis, MN 55438 USA
www.det-tronics.com

Phone: +1 952.941.6665
Toll-free: +1 800.765.3473
Fax: 952.829.8750
det-tronics@carrier.com