



Certificate of Compliance

Certificate: 2134626

Master Contract: 150863

Project: 70217017

Date Issued: 2019-05-07

Issued To: Detector Electronics Corporation (Det-Tronics)
6901 W 110th St
Minneapolis, Minnesota, 55438-2392
United States

Attention: Jon Miller

The products listed below are eligible to bear the CSA Mark shown



Issued by: *Konstantin Rybalko*
Konstantin Rybalko

PRODUCTS

CLASS – 4818 04 – Signal Appliances – System – For Hazardous Locations

CLASS – 4828 01 – Signal Appliances – Combustible Gas Detection Instruments for Hazardous Locations

CLASS – 4828 02 – Signal Appliances – Toxic Gas Detection Instruments for Hazardous Locations

Eagle Quantum Premier (EQP) System and Components

Class I Division 2 Groups A, B, C & D, T4

Class I, Zone 2, Group IIC; T4

When installed in a suitable CSA Certified labeled Type rated enclosure

a) EQ3xxx Controller Series

“Controller” Model EQ3xxx, **Operating temperature** -40°C to +80°C. **Electrical rating** 18-30Vdc, 24Vdc nominal, 12 Watts maximum. **Standard I/O;** 9 relay outputs, rated 1 Amp resistive at 30Vdc, 8 digital input channels, Transformer isolated digital communication (proprietary LON), RS232 and RS485 communication ports. The EQP Controller combines gas detection, alarming and mitigation with fire detection, in one package. The system is intended for use in hazardous locations and is designed to meet the requirements of approval agencies from around the world. SIL and non-SIL options are available. **Optional “expansion” I/O** Ethernet, DRL, ControlNet, RS232 /RS485 ports available. A HSSL RS232 connection is used for “redundant” controller system configuration. RS485 ports are utilized for “remote” controller to controller communications.



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NOTE: Ordinary Locations Third Party accessories, “RS485 to Fiber Optic converter”(s) 1) MOXA TCF-142-S single mode Fiber Optical Converter and 2) Phoenix Contact PCI-MOS-RS485W2/FO 850T multi-mode Fiber Optic Converter. These are used for extending distance between controllers.

b) EQ3700DCIO Series

“Discrete Input / Output Module” Model EQ3700DCIO, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 11 Watts. **I/O** 8 individually configured (input / output) channels programmable for supervised or unsupervised operation. Inputs can be configured for 2 state (on/off), 2 state with (active/trouble), and 3 state (active/short/open). Individual outputs can provides 18-30Vdc and 2 amp per channel, with a maximum combined total 10 Amps, transformer isolated digital communication (proprietary LON).

c) EQ3710AIM Series

“Analog Input Module” Model EQ3710AIM, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 6 Watts max. **I/O** 8 individual channels for connection with 4-20mA signaling devices. Each channel supplies 18-30Vdc and 900mA. Transformer isolated digital communication (proprietary LON). For use with CSA certified 4-20 mA devices. SIL and non-SIL options available.

d) EQ3730EDIO Series

“Enhanced Discrete Input / Output Module” Model EQ3730EDIO, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 11 Watts. **I/O** 8 individually configured (input / output) channels programmable for supervised or unsupervised operation. Inputs can be configured for 2 state (on/off), 2 state with (active/trouble) and 3 state (active/short/open). Individual outputs can provides 18-30Vdc and 2 amp per channel, with a maximum combined total 10 Amps, transformer isolated digital communication (proprietary LON). SIL and non-SIL options available.

e) EQ3780HSDM Series

“High Speed Deluge Module” Model EQ3780HSDM, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 3 Watts. **I/O** 6 individual input channels and 6 individual output channels programmable for supervised or unsupervised operation. Inputs and outputs can be configured for 5 states (on/off, Class B supervision, Class A supervision, unsupervised, cascade). Individual outputs can provides 18-30Vdc and 2 amp per channel, with a maximum combined total 10 Amps, transformer isolated digital communication (proprietary LON), SIL rated.

f) HIM

“HART Interface Module” Model HIM, P/N 008056-001. **Operating temperature** -40°C to +85°C. **Electrical rating** No power connections, 1 Watt maximum. **I/O** Provides interface / connection point for 3rd party, hand held, HART communication devices.



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Class I, Division 2, Groups A, B, C & D, T3C

Class I, Zone 2, Group IIC, T3C

When installed in a suitable CSA Certified labeled Type rated enclosure

g) EQ3720RM Series

“Relay Module” Model EQ3720RM, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 4 Watts maximum. **I/O** relay contacts rated 1amp resistive at 30Vdc; transformer isolated digital communication (LON).

Class I Division 1 Groups B, C & D T4

Class I Division 2 Groups A, B, C & D T4

Class II Division 1 Groups E, F & G

Class II Division 2 Groups F & G

Class III

TYPE 4X

h) EQ24xxNE Series

“Network Extender” Model EQ24xxNE, Operating temperature -40°C to +75°C. Electrical rating 18-30Vdc, 24Vdc nominal. 0.5 Watts maximum. I/O Transformer isolated digital communication (proprietary LON). The NE is used to extend LON field wiring distances.

i) EQ24abPLR Series

“Physical Layer Repeater”, Model EQ24xxPLR, Operating temperature -40°C to +75°C. Electrical rating 18-30Vdc, 24Vdc nom., 2 Watts maximum. I/O Transformer isolated digital communication (proprietary LON). Used in conjunction with EQ24xxNE eliminating communication interference from field wiring opens creating signal reflections which may cause LON device fault isolation.

j) EQ22abDCU Series

“Digital Communication Unit”, Model EQ22xxDCU, **Operating Temperature** -40°C to +75°C, **Electrical rating** 18-30Vdc, 24Vdc nominal, 6 Watts maximum. **I/O**; Output 18-30Vdc 24Vdc nominal / 95mA, 4-20mA input and sensor calibration line. Transformer isolated digital communication (proprietary LON). For use with CSA certified 4-20 mA output devices.

Note: See individual Certificates for Hazardous Location Class(s) and other technical details.

k) UD10 Series

CSA Certificate No. 2029512

“FlexVu® Explosion Proof Universal Display”. The UD10 provides a local interface with display for sensor configuration, calibration, diagnostics and monitoring while transmitting sensor signal to the controller. The UD10xxx2C, (C=CGS model option) adds the function of transmitter for the CGS Sensor. The UD10xxx2N (N=NTMOS model option) provides a filter circuit for connection with NTM H₂S sensor.

l) PIRECL Series

CSA Certificate No. 2095819

“Eclipse® PointWatch”, Infrared Hydrocarbon Gas Detector”. Available in Combustible and CO₂ Toxic Gas Detection model options. *SIL and non-SIL options available.*



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EQP System “Combustible Gas Specific” Equipment Class 4828-01

NOTE: Any CSA certified combustible gas sensor / detector with 4-20mA (industry standard) output may be used with EQ3710AIM, UD10 and EQ22abDCU. Det-Tronics offers several CSA certified Sensors.

Note: See individual Certificates for Hazardous Location Class(s) and other technical details.

- m) **PIR9400** Series
PointWatch™ Infrared Hydrocarbon Gas Detector
CSA Certificate No. 2472075
- n) **PIRDUCT** Series
DuctWatch Gas Detector
CSA Certificate No. 2162023
- o) **CGS** Series
Combustible Gas Detector
CSA Certificate No. 70094584
Note: EQ22abDCUEX and UD10xxxxxC are required for use with CGS catalytic sensor.

Class I Division 1 Groups B, C & D T4A
Class I Division 2 Groups A, B, C & D T4A
Class II Division 1 Groups E, F & G
Class II Division 2 Groups F & G
Class III
TYPE 4X

- p) **EQ22abDCUEX** Series
“Digital Communication Unit”, Model EQ22xxDCUEX **Operating temperature** -40°C to +75°C.
Electrical rating 18-30Vdc, 24Vdc nominal, 6 Watts maximum. **I/O** (CGS sensor input and transformer isolated digital communication (proprietary LON). The “EX” version of the DCU is designed specifically for use with Det-Tronics CGS combustible gas sensor, providing the “transmitter” function of the gas detector.

Note: See individual Certificates for Hazardous Location Class(s) and other technical details.

- q) **OPECL** Series
“Eclipse® Open Path Hydrocarbon Gas Detector” Model OPECL.
CSA Certificate No. 2134629
- r) **LS2000** Series
“FlexSight™ LS2000 Line of Sight Infrared Hydrocarbon Gas Detector”.
CSA Certificate No. 2664078
- s) **PIRTB** Series
“PointWatch Termination Box”, Model PIRTB Series. Provides a convenient remote calibration trigger for PIRECL, OPECL, and LS2000 detectors and termination / protection of “flying lead” and calibration trigger associated with other sensors (i.e. PIRDUCT, PIR9400).
CSA Certificate No. DEC 3024-1



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EQP System “Toxic Gas Specific” Equipment Class 4828-02

NOTE: Any CSA certified Toxic Gas Sensor / Detector with 4-20mA (industry standard) output may be used with EQ3710AIM Series, UD10 Series and EQ22abDCU Series. Det-Tronics offers several CSA certified Sensors.

Note: See individual Certificates for Hazardous Location Class(s) and other technical details.

- t) **GT3000** Series
Sensors include; H₂S, CO, NH₃, SO₂, CL₂, NO₂, H₂ (ppm only) and O₂ depletion
CSA Certificate No. 2489540
- u) **NTM** Series
H₂S Sensor
CSA Certificate No. 1938502
- v) **C7064E**
H₂S Sensor
CSA Certificate No. LR 52532-23

EQP System Support / Ancillary Equipment Class 4818 04

Class I Division 1 Groups B, C & D T4A
Class I Division 2 Groups A, B, C & D T4A
Class II Division 1 Groups E, F & G
Class II Division 2 Groups F & G
Class III
TYPE 4X

- w) **EQ22xxUVHT** Series
“High Temperature Ultraviolet Flame Detector Module”, Model EQ22xxUVHT, **Operating temperature** -40°C to +75°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 4 Watts maximum. **I/O** Transformer isolated digital communication (proprietary LON) and Electrical connection to/from C7050B Ultraviolet Flame Detector.
- x) **EQ22xxIDC & EQ22abIDCGF** Series
“Initiating Device Circuit” Model EQ22xxIDC and EQ22xxIDCGF **Operating temperature** -40°C to +75°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 4 Watts max. **I/O** 2 digital inputs (Dry Contact); Transformer isolated digital communication (proprietary LON). The IDCGF provides ground fault monitoring in addition to the monitoring of input signals.
- y) **EQ25abARM** Series
“Agent Release Module”, Model EQ25xxARM, **Operating temperature** -40°C to +75°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 75mA standby, **I/O** 2 outputs rated 30Vdc max., 2 Amps max.; Transformer isolated digital communication (proprietary LON).



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z) EQ25abSAM Series

“Signal Audible Module”, Model EQ25xxSAM, **Operating temperature** -40°C to +75°C. **Electrical rating** 18-30Vdc, 24Vdc nom., **I/O** 60 mA standby, 120 mA alarm input; dual outputs rated 30Vdc max., 2 Amps max.; Transformer isolated digital communication (proprietary LON).

Class I Division 2 Groups A, B, C & D T4;
Class I, Zone 2, Group IIC T4

When installed in a suitable CSA Certified labeled Type rated enclosure

aa) EQ2220GFM

“Ground Fault Monitor” Model EQ2220GFM, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nom., 1 Watt maximum. **I/O**, Output relay contact rated at 30Vdc and 1 Amp.

bb) EQ2230RSP

“RS485 Transient Protector”, Model EQ2230RSP **Operating temperature** -40°C to +85°C, Field wiring surge / transient protection for EQP Controller RS485 inputs. Passive components rated less than 1mW.

cc) EQ3750ASH Series

“Addressable Smoke and Heat Module” Model EQ3750ASH Series, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nominal. 690 mA input current; **I/O** Apollo loop, serial data providing maximum of 225 mA. Transformer isolated digital communication (proprietary LON). The EQ3750ASH provides connection to 64 addressable Apollo XP95A and Discovery modules; reference EQ3750ASH Manual 95-8654 for recommended / supported Apollo Modules.

dd) EQ3760ASM Series

“Addressable Smoke Module”, Model EQ3760ASM Series, **Operating temperature** -40°C to +85°C. **Electrical rating** 18-30Vdc, 24Vdc nominal, 690 mA input current; **I/O** Apollo loop, serial data providing maximum of 225 mA. Transformer isolated digital communication (proprietary LON). The ASM provides connection to 100 addressable Apollo XP95A and Discovery modules; reference EQ3750ASM Manual 95-8755 for recommended / supported Apollo Modules.

ee) EQ3LTM

“LON Termination Module” Model EQ3LTM, **Operating temperature** -40°C to +85°C. Used when Controllers are connected in “redundant pair” configuration, acting as a termination resistor. No power connection no I/O.

EQP System Flame Detectors Equipment Class 4818 04

Note: See individual Certificates for Hazardous Location Class(s) and other technical details.

ff) X3301 Series

CSA Certificate No. 2254156

“Multispectrum Infrared Flame Detector” Model X3301. SIL and non-SIL options.

gg) X3302 Series

CSA Certificate No. 2254156

“Multispectrum Infrared Flame Detector” Model X3302.



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- | | |
|---|-----------------------------|
| hh) X2200 Series
“Ultraviolet Flame Detector” Model X2200. | CSA Certificate No. 2125402 |
| ii) X9800 Series
“Infrared Flame Detector” Model X9800. | CSA Certificate No. 2125402 |
| jj) X5200 Series
“Ultraviolet/Infrared Flame Detector” Model X5200. | CSA Certificate No. 2125402 |

EQP System Power Supply(s) and Components

Class I Division 2 Groups A, B, C & D

When installed in a suitable CSA Certified labeled Type rated enclosure

- kk) EQP2120PS(-B)**
“AC/DC Power Supply”, **Operating Temperature** -25°C to +60°C (+70°C with output de-rating applied)
Electrical rating 100...240Vac, 45-65Hz, **Output** 24Vdc 20Amps maximum.
- ll) EQP2410PS(-P)**
“DC/DC Converter”, **Operating Temperature** -25°C to +60°C (+70°C with output de-rating applied),
Electrical rating Input 18-32Vdc 14 Amps, **Output** 24Vdc 10 Amps. Provides voltage regeneration, stabilization and electrical isolation.
- mm) Diode Redundancy Module**
“Redundancy Module”, **Operating Temperature** -25°C to +60°C (+70°C with output de-rating applied),
Model DEC P/N 009934-001 (-002). **Electrical rating** Input 0-30Vdc 24Vdc nominal, 20Amps each input,
Output 24Vdc Nominal 40Amps. Used with redundant power sources.

Class I Division 2 Groups A, B, C & D T3A

Class I Zone 2 Group IIC, T3A

When installed in a suitable CSA Certified labeled Type rated enclosure

- nn) EQ3800PDM**
“Power Distribution Module” Model EQ3800 Series, **Operating temperature** -40°C to +80°C. **Electrical rating** 2 DC power inputs (primary and backup), 18-30Vdc, 24Vdc nominal, 10 Amps maximum per input; 5 individual Outputs rated 27.5Vdc nominal; 2 Amps total combined output current in standby (normal operation) with a 15minute 10 Amps maximum alarm output current.

Ordinary Location

- oo) EQ21xxPS** (xx=10, 30, or 75) *10, 30 and 75 represent the output current capacity.*
“AC/DC Power Supply” and Battery Charger, **Operating Temperature** 0°C to 50°C. **Electrical rating** 120, 208, 240Vac (50-60Hz). EQ2110PS 46 Watts, EQ2130PS 140 Watts, EQ2175PS 349 Watts. **I/O** Battery Change circuit and DC power output for system components



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pp) EQ2100PSM

“Power Supply Monitor” Model EQ2100PSM, **Operating Temperature** 0°C to 50°C. **Electrical rating** 18-30Vdc, 24Vdc nominal, 2 Watts maximum. **I/O** Inputs for monitoring AC and DC power sources, backup battery and ground fault conditions Output transformer isolated digital communication (LON) reports thru LON back to EQP Controller. Typically used with EQ21xxPS.

EQP System Enclosure Solutions

Class I Division 1 Groups C & D, T6
Class I Division 2 Groups A, B, C & D, T4
Class II Division 1 Groups E, F & G
Class III
TYPE 4X

qq) EQ3900RPSE

“Remote Power Supply” Model EQ3900RPSE Series, **Operating Temperature** -20°C to +60°C, **Electrical Rating;** Input 100...240Vac, 45-65Hz, Output 24Vdc 18Amps maximum. The EQ3900RPSE provides an Explosion-Proof (Flameproof) Enclosure solution for EQP2120PS power system, with ground fault monitoring.

Class I Division 1 Groups B, C & D T5
Class I Zone 1 Group IIB, T5
Class II Division 1 Groups E, F & G
Class III
TYPE 4X

rr) EQ3900E

“Explosion-Proof Enclosure Solution”, Model EQ3900E Series. **Operating Temperature** -20°C to +60°C **Electrical rating** 18-30Vdc, 24Vdc nominal, 37 Amps maximum. **I/O** configuration dependent, See manual 95-8763 for configuration options.

Class I Division 2 Groups A, B, C & D T3A
Class I Zone 2, Group IIC T3A
TYPE 4X

ss) EQ3900N

“Non-Incendive Enclosure Solution”, Model EQ3900N Series, **Operating Temperature** -40°C to +60°C. **Electrical Rating** 18-30Vdc, 24Vdc nominal. **I/O** Enclosure size and installed equipment configuration dependent, See manual 95-8559 for configuration options.

Ordinary Locations

tt) EQ3900G

“General Purposes Enclosure Solution”, Model EQ3900G Series **Operating Temperature** 0°C to +50°C **Electrical Rating** 18-30Vdc, 24Vdc nominal, 150 Amp maximum. **I/O** Enclosure size and installed



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equipment configuration dependent, See manual 95-8641 for configuration options.
Model EQ3900G “Power Distribution/Monitoring Enclosure” Series **Operating Temperature** 0°C to +50°C **Electrical Rating** 120/240/208 Vac, 24/12/15 Amp maximum. **I/O** Enclosure size and installed equipment configuration dependent, See manual 95-8641 for configuration options.

uu) EQ3900RPSG

“Remote Power Supply” Model EQ3900RPSG Series, **Operating Temperature** -20°C to +60°C, **Electrical Rating; Input** 100...240Vac, 45-65Hz, **Output** 24Vdc 18Amps maximum. The EQ3900RPSG provides a General Purpose Enclosure solution for EQP2120PS power system, with ground fault monitoring.

**Class I Division 1 Groups B, C & D, T6
TYPE 4X**

vv) EQ3770EIO Series

“Explosion-Proof I/O Enclosure Solution”, Model EQ3770EIO Series, **Operating Temperature** -20°C to +50°C. **Electrical rating** 18-30Vdc, 24Vdc nominal, 11 Amp maximum. **I/O** matches the installed EQ37xx Module. The EIO turns any EQ37xx Non-incendive module into an Explosionproof (Flameproof) device. See manual 95-8761 for configuration options.

Note: See individual Certificates for Hazardous Location Class(s) and other technical details.

ww)

STB Series CSA Certificate No. 2363285
Sensor Termination Box/Separation Kit, Model STB.

NOTE: This system is for operation with a computer and software as covered in the instruction manual.

APPLICABLE REQUIREMENTS

- | | | |
|-----------------------------|---|---|
| CAN/CSA-C22.2 No. 0-M91 | - | General Requirements – Canadian Electrical Code, Part II |
| CSA-C22.2 No. 30-M1984 | - | Explosion-Proof Enclosures for Use in Class I Hazardous Locations |
| CAN/CSA-C22.2 No. 94-M91 | - | Special Purpose Enclosures |
| CSA-C22.2 No. 142-M1987 | - | Process Control Equipment |
| CSA Std. C22.2 No.152-M1984 | - | Combustible Gas Detection Instruments |
| CSA-C22.2 No. 213-M1987 | - | Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations |
| CSA-C22.2 No. 25-1966 | - | Enclosures for use in Class II Groups E, F, and G Hazardous Locations |



Supplement to Certificate of Compliance

Certificate: 2134626

Master Contract: 150863

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
70217017	2019-05-07	Update to report 2134626 for addition of HSDM module.
000070208819	2018-12-13	Update to report 2134626 for component replacement in PDM module.
000070201465	2018-10-17	Update to report 2134626 to include network extender EQ24xxNE update and power supply monitor firmware update.
000070098151	2017-08-30	Update to report 2134626 to include changes to EQP controller associated equipment
000070054641	2015-12-01	Update the report 2134626 for minor nameplate and instruction changes
000070045746	2015-11-05	Update to the Report 2134626 for addition of optional power supply to Model EQ3900E
000070029767	2015-09-02	Update to report 2134626 for Addition of DLR communication board to EQP Controller (EQP System Update)
000070008036	2014-07-21	Update to report 2134626 to add Ethernet Option Board to EQP Controller
0002593433	2013-04-23	Update to report 2134626 to cover changes to the EQ3900G and revise product listings.
0002553538	2012-12-07	Update to report 2134626 to cover component and firmware changes
0002533695	2012-06-12	Update to report 2134626 to add Apollo devices.
0002498314	2012-05-22	Update to report 2134626 to cover revised Firmware and Hardware.
0002489522	2012-01-31	Update to report 2134626 to cover revised EQ3710AIM Analog Input Module firmware.
0002476755	2011-12-13	Update to report 2134626 to cover the addition of power supplies and a converter.



0002413969	2011-04-05	Update to report 2134626 to revise the firmware in the controller
0002354457	2010-12-17	Update to report 2134626 to cover the addition of an “Addressable Smoke and Heat module” Model EQ3750 Series and modifications to the controller.
0002349790	2010-10-21	Addition of UD10-DCU/LON version
0002294815	2010-10-07	Addition of Model EQ3900G
0002181418	2009-06-23	Revised construction
0002134626	2009-02-20	Addition of OPECL-LON