The manufacturer
may use the mark:

Reports:
DET 11/06-064 R002 V1R4
IEC 61508 Assessment EQP
DET 05/07-01 R002 V1 R6
EQP FMEDA Report

Validity:
This assessment is valid for the EQP safety system, simplex and redundant controllers.

This assessment is valid until July 1, 2016.

Revision 1.5 June 4, 2014

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Zertifikat / 合格証

DET 1106064 C001

exida hereby confirms that the:

Eagle Quantum Premier (EQP) Safety System

Safety Manual 95-8599, Revision 4.1 or greater

Detector Electronics Corporation Minneapolis, MN - USA

Has been assessed per the relevant requirements of:

IEC 61508 : 2000 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Integrity: SIL 2 Capable

Random Integrity: Type B Element

PFD_{AVG} and Architecture Constraints must be verified for each application

Safety Function:
The EQP Safety System detects flame, gas, or other programmed hazardous condition and energizes an output per the programmed logic.

Application Restrictions:
The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements.

John C Yozallinas
Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

DET 1106064 C001

Systematic Integrity: SIL 2 Capable

Random Integrity: Type B Element

PFD_{AVG} and Architecture Constraints must be verified for each application

Eagle Quantum Premier (EQP) Safety System

Detector Electronics Corporation

Minneapolis, MN - USA

SIL 2 Capability:

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 2. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated without “prior use” justification by end user or diverse technology redundancy in the design.

IEC 61508 : 2000 Failure Rates in FIT*

Device	λ_{sd}	λ_{su}	λ_{dd}	λ_{du}	SFF
EQ300X – common	0	455	2175	88	96.7%
EQ3730EDIO – common	0	243	469	21	97.1%
EQ3730EDIO – per Input monitored for open and shorts	0	67	32	1	99.0%
EQ3730EDIO – per Input monitored for open only	0	67	26	7	93.0%
EQ3730EDIO – per monitored output	0	50	41	1	98.9%
X3301 – Multispectrum IR Flame Detector with EQPSL communications	0	1611	1545	55	98.3%
PIRECL – Eclipse Infrared Gas Detector with EQPSL communications	0	1963	2894	147	97.1%
AIM – common	97	167	350	12	98.1%
AIM – per Input channel	0	42	26	5	93.0%

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD_{AVG} considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

* FIT = 1 failure / 10^9 hours

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Sellersville, PA 18960

Form	Version	Date
C61508	2.7-2	Mar 2011