

EU-TYPE EXAMINATION CERTIFICATE



[1]

[2]

**Equipment or Protective System intended for use
in Potentially Explosive Atmospheres
Directive 2014/34/EU**

[3]

EU-Type Examination Certificate Number: **DEMKO 01 ATEX 130204X Rev. 3**

[4]

Product: **Multispectrum infrared (IR) flame detectors, types X3301, X3302 and X33AF**

[5]

Manufacturer: **Detector Electronics Corporation**

[6]

Address: **6901 West 110th Street, Minneapolis, MN 55438 USA**

[7]

This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8]

UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in confidential report no. **4786552854**

[9]

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0:2012+A11:2013
EN 60079-7:2015**

**EN 60079-1:2014
EN 60079-31:2014**

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If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11]

This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by the certificate.

[12]

The marking of the equipment or protective system shall include the following:

II 2 G Ex db IIC T6...T4 or Ex db eb IIC T6...T5
 II 2 D Ex tb IIIC T130 °C

Certification Manager
Jan-Erik Storgaard

This is to certify that the sample(s) of the Equipment described herein ("Certified Equipment") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Equipment Certification Program Requirements. This certificate and test results obtained apply only to the equipment sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured equipment. UL has not established Follow-Up Service or other surveillance of the equipment. The Manufacturer is solely and fully responsible for conformity of all equipment to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2001-11-26

Re-issued: 2016-07-06



Notified Body

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com

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Schedule

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[15]

Description of Product:

The X3301, X3302 and X33AF are Multispectrum Infrared (IR) flame detectors, which provide detection of fires from light to heavy hydrocarbon fuels/ hydrogen. The flame detectors can be equipped with a terminal compartment in type of explosion protection flameproof enclosure "d", or in type of explosion protection increased safety "e", and is intended for use indoor and outdoor applications. The X3301, X3302 and X33AF contain three (IR) sensors with their associated signal processing circuitry. The standard output configuration includes fire, fault and auxiliary relays. Optionally the X3301, X3302 and X33AF can be equipped with an EOL resistor or addressable module inside the flameproof 'd' terminal compartment.

The optical radiation output of the apparatus with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is not covered in this certificate based on Exception 2) to the scope of EN 60079-28:2015.

Nomenclature for type X3301abcde, X3302abcde and X33AFabcde:
where

a = Enclosure material:

A = Aluminium

S = Stainless steel (316)

b = Type, and number of threaded locations:

2E = 2 Port, Metric M20

2F = 2 Port, 1/2" NPT

2M = 2 Port, Metric M25

2N = 2 Port, 3/4" NPT

4E = 4 Port, Metric M20

4F = 4 Port, 1/2" NPT

4M = 4 Port, Metric M25

4N = 4 Port, 3/4" NPT

c = Outputs:

11 = Relay

13 = Relay & 4-20 mA

14 = LON Eagle Quantum Premier

15 = Relay & Pulse

16 = Addressable module (third party type), for Ex d version only

17 = RS485

19 = Power Loop (AUTRONICA only)

21 = Relay Automotive (X3301 only)

22 = EQP Automotive (X3301 only)

23 = Relay / 4-20 mA & HART

d = Approvals agency:

A = FM* / CSA*

B = Brazil*

C = CSA*

E = ATEX / IECEx*

N = None*

R = Russian*

T = SIL* / FM* / CSA* / ATEX / IECEx*

U = Ukraine*

V = VdS* / ATEX / CINBOP*

W = FM* / CSA* / ATEX / IECEx*

Y = China*

e = Classification:

1 = Division / Zone Ex d e

2 = Division / Zone Ex d

Notes:

1. The *-marked options are stated for information only and are not covered within this certification.
2. Refer to drawing No. 007288-001 for details.
3. Type 'Approvals' can use one or more letters to designate the approval on the product.

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Temperature range for X3301, X3302 and X33AF:

The relation between ambient temperature and the assigned temperature class is as follows:

For Ex db eb and Ex tb:

Ambient temperature range
-50 °C to +60 °C
-50 °C to +75 °C

Temperature class
T6
T5

For Ex db:

Ambient temperature range
-55 °C to +60 °C
-55 °C to +75 °C
-55 °C to +125 °C

Temperature class
T6
T5
T4

Electrical data

Rated voltage: 18- 30 Vdc
Power consumption: max. 17 W

Optional third party addressable module:

Rated voltage: 30 Vdc
Rated current: 30 mA

Installation instructions

The field wiring connections in the terminal compartment are ATEX certified and accept wiring diameters from 14 AWG to 22 AWG (2.08 – 0.33mm²).

The Multispectrum Infrared (IR) flame detectors type X3301, X3302 and X33AF shall be installed according to the instructions given by the manufacturer.

The device is not provided with cable glands or sealing devices. Proper selection of suitable cable glands or sealing devices shall occur in the field.

Unused entries shall be closed with suitable certified blanking elements.

The metal housing for the Multispectrum Infrared (IR) flame detectors type X3301, X3302 and X33AF, must be electrically connected to earth ground.

For ambient temperatures below –10 °C and above +60 °C use field wiring suitable for both minimum and maximum ambient temperature.

Mounting instructions

Refer to "Instructions".

Routine tests

Routine tests for dielectric strength according to EN 60079-7 cl. 7.1 are required for the increased safe 'e' terminal compartment circuits. Tests shall be conducted at a voltage of 500 VAC or 710VDC for at least one minute without dielectric breakdown occurring.

Routine tests according to EN 60079-1 cl. 16 (at a test pressure of 16.7 bar / 250 psi) are only required for the aluminium front assemblies of the electronic 'd' compartment.

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Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

[17]

Specific conditions of use:

- The front window assembly contains a special joint construction. In accordance with EN60079-1 clause 5.1, all inspections, repair and/or adjustments to this front window assembly shall be done by Detector Electronics Corporation only.
- The EOL resistor can only be used within the flameproof terminal compartment.
- EOL resistor must be ceramic, wirewound type, rated 5 watts minimum, with actual power dissipation not to exceed 2.5 watts.
- The Multispectrum Infrared (IR) flame detectors type X3301, X3302 and X33AF are to be installed in places where there is a low risk of mechanical damage.
- See the "maintenance" section of the manual for guidance on minimizing the electrostatic discharge.
- Flameproof joints are not intended to be repaired.

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Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The Multispectrum Infrared (IR) flame detector types X3301, X3302 and X33AF have in addition passed the tests for Ingress Protection to IP 66 and/or IP 67 in accordance with EN 60529:1991+A1:2000+A2:2013. The models marked for Ex db eb and Ex tb have an IP66 rating. Models marked with Ex db only have an IP66/67 rating.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.