CERTIFICATE OF CONFORMITY

FM Approvals
Member of the FM Global Group

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** **FM22US0083X**

3. **Equipment:**
   (Type Reference and Name) **UniVario FMX5000 Flame Detector**
   UniVario FMX5000 3GD Flame Detector
   UniVario WMX5000 Heat Detector
   UniVario WMX5000 3GD Heat Detector

4. **Name of Listing Company:** **Minimax GmbH**

5. **Address of Listing Company:** **Postfach 1260,**
   Industriestraße 10/12, D-23840 Bad Oldesloe,
   Germany

6. The examination and test results are recorded in confidential report number:

   3045182 dated 14th June 2013

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   FM 3600:2022, FM 3611:2021, FM 3810:2021, ANSI/UL 121201:2021, ANSI/UL 60079-0:2020, ANSI/UL 60079-15:2017, ANSI/UL 60079-31:2015, ANSI/UL 60079-7:2013, ANSI/IEC 60529:2004, ANSI/UL 61010-1:2012

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. Equipment Ratings:

    Nonincendive for Class I, II, III, Division 2, Groups A, B, C, D, E, F and G Temperature Class T4 Ta = -40ºC to +80ºC; Zone 2, AEx ec nC IIC T4 Gc Ta = -40ºC to +80ºC; Zone 22, AEx tc IIIC T110ºC Dc Ta = -40ºC to +80ºC hazardous (Classified) locations, IP65.

Certificate issued by:

J.E. Marquedant

9 June 2023

J.E. Marquedant
VP, Manager - Electrical Systems

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

SCC Accredited CB-P/S OCPS Accrédité CCN

11. The marking of the equipment shall include:

    Class I, II, III Division 2, Groups A, B, C, D, E, F, G; T4 Ta = -40°C to +80°C; IP65
    Zone 2, AEx ec nC IIC T4 Gc Ta = -40°C to +80°C; IP65
    Zone 22, AEx tc IIIC T110°C Dc Ta = -40°C to +80°C; IP65

12. **Description of Equipment:**

    See Annnex

13. **Specific Conditions of Use:**

    See Annex

14. **Test and Assessment Procedure and Conditions:**

    This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. **Schedule Drawings**

    A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

    Details of the supplements to this certificate are described below:

Date	Description
14 June 2013	Original Issue.
9 June 2023	Supplement 1: Report Reference: PR463721 dated 9 June 2023. Description of the Change(s): ◦ Update certificate to new style certificate ◦ Update all standards to latest eddtion ◦ Update minimum operating ambient temperature from -20°C to -40°C. ◦ Change Level of Protection "nA" to "ec" ◦ Change O-ring material ◦ Addition of KMX5000 RK 3GD relay module requiring addition Level of Protection "nC" ◦ Addition of KMX5000 AP communication module ◦ Documentation updates

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T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

ANNEX

UniVario FMX5000 IR 3GD Flame Detector

Description of Equipment

The UniVario FMX5000 IR 3GD Flame Detector is used to detect open flames with IR-light radiating flames. It consists of a painted aluminum enclosure with a sapphire-window and optional accessories for mounting that can be fitted onto the detector body. The detector glass window is monitored for optical integrity in the IR spectral range. All three sensors are monitored. The detector is designed to detect open flames that can be caused by combustibles of solid or liquid material. The detector can be equipped with a communication module type KMX5000 AP that is used to transfer serial data of the detector status via the supply connection cable. Alternatively, the detector can be equipped with a relay module type KMX5000 RK 3GD that includes two relays with contacts for alarm and fault connections. The detector is rated for an operating voltage of 24Vdc and a maximum current of 40mA.

UniVario FMX5000 IR 3GD Flame Detector

UniVario FMX5000 UV 3GD Flame Detector

Description of Equipment

The UniVario FMX5000 UV 3GD Flame Detector is used to detect open flames with UV-light radiating flames. It consists of a painted aluminum enclosure with a sapphire-window and optional accessories for mounting that can be fitted onto the detector body. The detector glass window is monitored for optical integrity in the UV spectrum range. The detector is designed to detect open flames that can be caused by the combustion of solid or liquid materials. The detector can be equipped with a communication module type KMX5000 AP that is used to transfer serial data of the detector status via the supply connection cable. Alternatively, the detector can be equipped with a relay module type KMX5000 RK 3GD that includes two relays with contacts for alarm and fault connections. The detector is rated for an operating voltage of 24Vdc and a maximum current of 40mA.

UniVario FMX5000 UV 3GD Flame Detector

UniVario WMX5000 3GD Heat Detector

Description of Equipment

The UniVario WMX5000 3GD Heat Detector is used to detect open fires with fast heat development. It consists of a painted aluminum enclosure and a temperature sensor encapsulated in a stainless steel cap which protrude from the enclosure. The detector has an alarm feature that can be selected between 0ºC (32ºF) and 105ºC (221ºF). This detector can be equipped with a communication module type KMX5000 AP that is used to transfer serial data of the detector status via the supply connection cable. Alternatively, the detector can be equipped with a relay module type

KMX5000 RK 3GD that includes two relays with contacts for alarm and fault connections. The detector is rated for an operating voltage of 24Vdc and a maximum current of 40mA.

UniVario WMX5000 3GD Heat Detector

Specific Conditions of Use

1. The maximum permitted operating temperature of the WMX5000 3GD Heat Detector is 80ºC. To avoid the effects of process temperature and other thermal effects care shall be taken to ensure that the “Enclosure Temperature” does not exceed 80ºC.

UniVario WMX5000 FS 3GD Heat Detector

Description of Equipment

The UniVario WMX5000 FS 3GD Heat Detector is a high temperature heat detector used to detect open fires with fast heat development. It consists of a painted aluminum enclosure and a temperature sensor encapsulated in a stainless steel rod which protrudes from the enclosure. The detector has an alarm feature that can be selected between 0ºC (32ºF) and 400ºC (752ºF) or 250ºC (482ºF) and 840ºC (1544ºF). The detector is specifically designed for use in object protection, such as monitoring of exhaust ducts or test benches, especially suited for high temperature application. The detector can be equipped with a communication module type KMX5000 AP that is used to transfer serial data of the detector status via the supply connection cable. Alternatively, the detector can be equipped with a relay module type KMX5000 RK 3GD that includes two relays with contacts for alarm and fault connections. The detector is rated for an operating voltage of 24Vdc and a maximum current of 40mA.

UniVario WMX5000 FS 3GD Heat Detector

Specific Conditions of Use

1. The maximum permitted operating temperature of the WMX5000 FS 3GD Heat Detector is 80ºC. To avoid the effects of process temperature and other thermal effects care shall be taken to ensure that the “Enclosure Temperature” does not exceed 80ºC.

UniVario WMX5000 FS Flex 3GD Heat Detector

Description of Equipment

The UniVario WMX5000 FS Flex 3GD Heat Detector is a high temperature heat detector used to detect open fires with fast heat development. It consists of a painted aluminum enclosure and a temperature sensor encapsulated in a stainless steel flexible hose which protrudes from the enclosure. The detector has an alarm feature that can be selected between 0ºC (32ºF) and 400ºC (752ºF) or 250ºC (482ºF) and 840ºC (1544ºF). The detector is specifically designed for use in object protection, such as monitoring of exhaust ducts or test benches, especially suited for high temperature application. The detector can be equipped with a communication module type KMX5000 AP that is used to

transfer serial data of the detector status via the supply connection cable. Alternatively, the detector can be equipped with a relay module type KMX5000 RK 3GD that includes two relays with contacts for alarm and fault connections. The detector is rated for an operating voltage of 24Vdc and a maximum current of 40mA.

UniVario WMX5000 FS Flex 3GD Heat Detector

Specific Conditions of Use

1. The maximum permitted operating temperature of the WMX5000 FS Flex 3GD Heat Detectors is 80ºC. To avoid the effects of process temperature and other thermal effects care shall be taken to ensure that the "Enclosure Temperature" does not exceed 80ºC.

UniVario WMX5000 Einloch 3GD Heat Detector

Description of Equipment

The UniVario WMX5000 Einloch 3GD Heat Detector is used to detect open fires with fast heat development. It consists of a painted aluminum enclosure and a temperature sensor encapsulated in a stainless steel cap which protrude from the enclosure. The temperature sensor is provided with a mounting nut to mount it to a housing or duct. The detector has an alarm feature that can be selected between 0ºC (32ºF) and 105ºC (221ºF). This detector can be equipped with a communication module type KMX5000 AP that is used to transfer serial data of the detector status via the supply connection cable. Alternatively, the detector can be equipped with a relay module type KMX5000 RK 3GD that includes two relays with contacts for alarm and fault connections. The detector is rated for an operating voltage of 24Vdc and a maximum current of 40mA.

UniVario WMX5000 Einloch 3GD Heat Detector

Specific Conditions of Use

1. The maximum permitted operating temperature of the WWMX5000 Einloch 3GD Heat Detector is 80ºC. To avoid the effects of process temperature and other thermal effects care shall be taken to ensure that the "Enclosure Temperature" does not exceed 80ºC.