

CERTIFICATE OF CONFORMITY



Member of the FM Global Group

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

2. **Certificate No:** FM16US0031X
3. **Equipment:** FG-ALS4-OD Hydrocarbon Leak Detector
(Type Reference and Name)
4. **Name of Listing Company:** TTK SAS
5. **Address of Listing Company:** 19 Rue du Général Foy,
Paris, 75008, France

6. The examination and test results are recorded in confidential report number:
3054085 dated 14th November 2016

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 3610:2021, FM 7745:2021, ANSI/ISA 60079-0:2013, ANSI/UL 60079-11:2014

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:**

Intrinsically Safe for Class I, Division 1, Groups C and D, T4 hazardous (classified) locations in accordance with drawing 160405; Intrinsically Safe for Class I, Zone 0, AEx ia IIB T4 hazardous (classified) locations in accordance with drawing 160405.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

13 May 2024

Date

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

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. One Technology Way, Norwood, MA 02062 USA
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SCHEDULE

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11. The marking of the equipment shall include:

FG-ALS4-OD:

Not for use in Hazardous Location.

FG-ODa, FG-ODRa FG-ODCa and FG-ODC+a

CL 1 DIV 1 GP CD T4,
CL 1 ZN 0 AEx ia IIB T4

12. **Description of Equipment:**

The FG-ALS4-OD Leak Detection System provides Hydrocarbon leak detection with a control panel, lengths of sensing cables and accessories. The FG-ALS4-OD controller includes an LCD touchscreen which shows the alarm indication by zone. The controller has the capacity to monitor up to 4 individual zones with each zone consisting of up to 4 lengths of sensor cables FG-OD, FG-ODR, FG-ODC or FG-ODC+ up to a maximum of 20 m (65 Ft).

The FG-OD and FG-ODR series sensing cables are used with the FG-ALS4-OD Hydrocarbon Leak Sensing System, a maximum cable length of 20 m (67 Ft) is approved for detection. The minimum wet cable exposure length of 1 m (3.3 Ft) is required to meet the application for Category 2 below ground hydrocarbon leak detection.

The FG-ODC series sensing cable is used with the FG-ALS4-OD Hydrocarbon Leak Sensing System, a maximum cable length of 12 m (39 Ft) is approved for detection. The minimum wet cable exposure length of 15 cm (5.9 in) is required to meet the application for Category 1 below ground hydrocarbon leak detection.

The FG-ODC+ series sensing cable is used with the FG-ALS4-OD Hydrocarbon Leak Sensing System, a maximum probe length of 3 m (9.8 Ft) is approved for detection. The minimum wet cable exposure length of 15 cm (5.9 in) is required to meet the application for above ground leak detection of Gasoline, and 1 m (3.3 Ft) is required to meet the application for above ground leak detection of Jet-A and Kerosene.

| Models | Description |
|------------|---|
| FG-ALS4-OD | Leak detection controller for above and below ground hydrocarbon leaks, with LCD and 5 SPDT relays. Firmware Version: 3.0.0, Power Input: 100 – 240 VAC |
| FG-ODa | Sensing Cable; a = length: 1, 3, 7, 12 or 20; Performance compliant as a Category 2 Below Ground Hydrocarbon Leak Detector. Minimum wet cable exposure length of 1 m (3.3 Ft) |
| FG-ODRa | Sensing Cable; a = length: 1, 3, 7, 12 or 20; Performance compliant as a Category 2 Below Ground Hydrocarbon Leak Detector. Minimum wet cable exposure length of 1 m (3.3 Ft) |
| FG-ODCa | Sensing Cable; a = length: 1, 3, 7 or 12; Performance compliant as a Category 1 Below Ground Hydrocarbon Leak Detector. Minimum wet cable exposure length of 1 m (3.3 Ft) |
| FG-ODC+a | Sensing Cable; a = length; 1 or 3; Performance compliant as a Above Ground Leak |

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| | |
|----------|---|
| | Detector for Jet-A, Kerosene and Gasoline. Minimum wet cable exposure length of 15 cm (5.9 in) for Gasoline, 1 m (3.3 Ft) for Jet-A and Kerosene. |
| FG-CLODa | Leader Cable - Indoor Only, a = length; 3.5 or XX |
| FG-NODa | Jumper Cable; a = length; 3, 7, 15 or XX |
| FG-TMOD | End Terminator |

Application Notes:

- The FG-ALS4-OD shall not be installed in hazardous locations and shall only be used in safe/unclassified areas.

13. Specific Conditions of Use:

1. For FG-ALS4-OD, surge suppression is required on detection circuits for installations that may be exposed to surge transients.
2. The FG-OD, FG-ODR, FG-ODC and FG-ODC+ sensor cables shall be terminated only using the FG-TM-OD end of line terminator.
3. The maximum accumulated length of Lead and Jumper cable must be less than or equal to 150m (492ft).
4. For reuse of sensor cable, follow manufacture's cleaning procedure for cleaning a contaminated sensor.

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 November 2016 | Original Issue. |
| 19 December 2016 | <u>Supplement 1:</u> Description of the Change: Correction of typographical error in the certificate number. |
| 13 May 2024 | <u>Supplement 2:</u> Report Reference: PR462476 dated 13 May 2024. Description of the Change(s): Added FM Class 7745 approval. |

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