

CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM18US225X
3. **Equipment:** KFD0-CS-Ex*.5* Loop-Powered SMART Fire Detector Repeater
(Type Reference and Name)
4. **Name of Listing Company:** Pepperl+Fuchs GmbH
5. **Address of Listing Company:** Lilienthalstrasse 200
D-68307 Mannheim
Germany
6. The examination and test results are recorded in confidential report number:

3036564 dated 17th January 2011
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:1998, FM Class 3610:2010, FM Class 3611:2004, FM Class 3810:2005,
ANSI/ISA 60079-0:2009, ANSI/UL 60079-11:2014, ANSI/ISA 12.12.02:2009
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.

Certificate issued by:



J. E. Marquedant
VP, Manager - Electrical Systems

10 August 2018

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. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
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SCHEDULE



US Certificate Of Conformity No: FM18US0225X

10. Equipment Ratings:

Associated intrinsically safe (entity) equipment with connections for Class I, II, III, Division 1, applicable Groups A, B, C, D, E, F, G; Associated intrinsically safe (entity) equipment with [AEx ia] connections for Class I, Zone 0, Group IIC per control drawing 116-0129; Class I, Division 2, Groups A, B, C, D, temperature class T4, AEx nA II for Class I, Zone 2, temperature class T4 hazardous (classified) locations. The equipment is Approved for use over an ambient temperature range of -20°C to 60°C.

11. The marking of the equipment shall include:

CL I, DIV 2, GP A-D, IS circuits for CL I, II, III, DIV 1, GP A-G; CL 1, ZN 2 AEx nA II, IS circuits for CL 1, ZN 0, [AEx ia] IIC, install per 116-0129, Temperature Class T4

12. Description of Equipment:

General – The repeater modules are associated apparatus providing one or two isolated channels for transferring signals from intrinsically safe fire and smoke alarm transmitters within hazardous locations.

Construction - The modules utilize a plastic enclosure which is configured for mounting to a 35 mm DIN rail. Connection to field wiring is by way of externally-mounted screw terminals.

Ratings - The repeaters operate from a 24 V DC source (loop powered) over an input current range of 1 – 20 mA. The repeaters are rated for use over an ambient temperature range of -20°C to +60°C.

Model numbers and entity parameters are as follows:

Loop-Powered SMART Fire Detector Power Supply. Models:

- KFD0-CS-Ex1.54
- KFD0-CS-Ex2.54
- KFD0-CS-Ex1.56
- KFD0-CS-Ex2.56
- KFD0-CS-Ex1.54-Y2
- KFD0-CS-Ex2.54-Y2
- KFD0-CS-Ex1.54-Y1
- KFD0-CS-Ex2.54-Y1
- KFD0-CS-Ex1.54-Y3
- KFD0-CS-Ex2.54-Y3

Parameter	Models / Terminals		
	KFD0-CS-Ex*.54 KFD0-CS-Ex*.54-Y1 KFD0-CS-Ex*.54-Y3	KFD0-CS-Ex*.54-Y2	KFD0-CS-Ex*.56
	Terminals 1&2 or 4&5	Terminals 1&2 or 4&5	Terminals 1&2 or 4&5
Voc, Uo (V)	28	25.2	21
Isc, Io (mA)	93	43	252
Po (mW)	653	271	1323

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Ca, Co, Groups, A, B, IIC (uF)	0.077	0.101	0.182
Ca, Co, Groups C, E, IIB (uF)	0.64	0.81	1.264
Ca, Co, Groups D, F, G, IIA, (uF)	2.14	2.89	4.774
La, Lo, Groups, A, B, IIC (mH)	4.3	19.6	0.56
La, Lo, Groups C, E, IIB (mH)	17	72	2.24
La, Lo, Groups D, F, G, IIA, (mH)	35	153	4.48
Lo/Ro, Groups A, B, IIC (uH/Ω)	55	131	26.9
Lo/Ro, Groups C, E, IIB (uH/Ω)	199	508	107.6
Lo/Ro, Groups D, F, G, IIA (uH/Ω)	431	964	215.3

13. Specific Conditions of Use:

1. In Class I, Division 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70).
2. In Class I, Zone 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70). The equipment shall be installed in an enclosure with a minimum ingress protection rating of IP54 unless the apparatus is intended to be afforded an equivalent degree of protection by location.

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.

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16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
20 th January 2011	Original Issue.
20 th December 2011	<u>Supplement: 1</u> Report Reference: 3036564rev111213 dated 20 th December 2011 Description of Change: Addition of -Y1 & -Y3 variants. Replacement of -Y72221 & -Y72222 variants with -Y2 variant. Addition of alternate conformal coating.
10 th August 2018	<u>Supplement: 2</u> Report reference: RR214869 dated 10 th August 2018 Description of Change: Minor changes to construction and documentation. Adopt new format certificate. Update to 2009 edition of ANSI/ISA 60079-0 and 2014 edition of ANSI/ISA 60079-11.

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