CERTIFICATE OF CONFORMITY

FM Approvals

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM26US0161X**
3. **Equipment:** **KCD2-SLD-Ex1.*, KCD0-SD3-Ex1.* Solenoid Drivers**
   (Type Reference and Name)
4. **Name of Listing Company:** **Pepperl+Fuchs SE**
5. **Address of Listing Company:** **Lilienthalstrasse 200, D-68307 Mannheim, Germany**
6. The examination and test results are recorded in confidential report number:

   PR475397 dated 29th June 2026

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 3611:2021, FM 3810:2021, ANSI/UL 60079-0:2013, ANSI/UL 60079-7:2017, ANSI/UL 60079-11:2014, ANSI/UL 60079-15:2013, ANSI/UL 61010-1:2024, ANSI/UL 121201:2021

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:

    See Annex

11. The marking of the equipment shall include:

    See Annex

12. **Description of Equipment:**

    General
    The Solenoid Drivers KCD2-SLD-Ex1.* and KCD0-SD3-Ex1* are designed as associated apparatuses and can be installed in the non-hazardous area or in a Division 2/Zone 2 Gas Area (EPL Gc). The device is an associated

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

06/29/2026
Date

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

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apparatus for Zone 0 (EPL Ga), or Zone 20 (EPL Da). The voltage and current at the output terminals are limited to intrinsically safe levels. The hazardous area circuit is galvanically isolated from the non-hazardous area circuit.

Mechanical
The components are mounted on a multilayer printed circuit board and housed in a plastic enclosure with polarized plug-in terminals or optional spring terminals for hazardous and non-hazardous area connections. The device is intended to be DIN rail mounted.

Electrical
This isolated barrier is used for intrinsic safety applications. It supplies power to solenoids, LEDs, and audible alarms, located in a hazardous area. The device is controlled with a loop-powered signal or a logic signal, so the available energy at the output is received from the input signal. The output signal has a resistive characteristic. As a result the output voltage and current are dependent on the load and the input voltage. At full load, 45mA at 10V (*=1045), 45mA at 12V (*=1245), or 65mA at 10V (*=1065) is available for the hazardous area. The device is rated 19 ... 30Vdc.

Environmental
KCD2-SLD-Ex1.:* Ta = -20°C to +60°C

KCD0-SD3-Ex1.:* Ta = -20°C to +70°C

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
29 June 2026	Original Issue.

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ANNEX

KCD0-SD3-Ex1.1045*(.SP)* Solenoid Driver

Equipment Ratings:

Associated intrinsically safe apparatus providing outputs for connection to Class I, II and III, Division 1, Groups A, B, C, D, E, F and G; [AEx ia] outputs for connection to Zone 0, Group IIC; AEx ec for Zone 2, Group IIC and Zone 20, Group IIIC; Nonincendive for Class I, Division 2, Groups A, B, C and D; in accordance with drawing number 116-0511; hazardous (classified) locations; T4 for -20°C < Ta < +70°C.

Markings:

Associated Apparatus providing Intrinsically Safe connections to Class I, II, III, Division 1, Groups ABCDEFG
Class I, Division 2, Groups ABCD T4
Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc
[AEx ia Da] IIIC
Ta = -20°C to +70°C

Description of Equipment:

KCD0-SD3-Ex1.1045*(.SP)* Solenoid Driver
".SP" = spring clamp terminals, optional. Blank = screw terminals
The asterisks shown can be replaced by a combination of tokens, not safety relevant.

Entity Parameters (Terminals 1+, 2-):

Gas Group	Voc, Uo (V)	Isc, Io (mA)	Po (mW)	Co (nF)	Lo (mH)	Lo/Ro (uH/Ohm)
Groups A/B (IIC)	26	93	605	99	4.1	59.1
Groups C, E, F, G (IIB/IIIC)				770	16.4	236.4
Group D (IIA)				2600	32.8	472.9

Specific Conditions of Use:

1. If the barriers are intended to be mounted in a Division 2 location, they 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) or Canadian Electrical Code (C22.1), as applicable. The equipment shall be installed in an enclosure with a minimum ingress protection of IP2X.
2. If the barriers are intended to be mounted in a Zone 2 location, they 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

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(ANSI/NFPA 70) or Canadian Electrical Code (C22.1), as applicable. The equipment shall be installed in an AEx or Ex certified IP54 enclosure unless the apparatus is intended to be afforded an equivalent degree of protection by location.
3. The device must be installed and operated only in an environment of overvoltage category II (or better) according to IEC 60664-1.
4. The device must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC 60664-1.
5. Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

KCD0-SD3-Ex1.1065*(.SP)* Solenoid Driver

Equipment Ratings:

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Class I, Division 2, Groups ABCD T4
Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc
[AEx ia Da] IIIC
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Gas Group	Voc, Uo (V)	Isc, Io (mA)	Po (mW)	Co (nF)	Lo (mH)	Lo/Ro (uH/Ohm)
Groups A/B (IIC)	17.3	220	947	353	0.73	37.5
Groups C, E, F, G (IIB/IIIC)				2060	2.9	150.3
Group D (IIA)				8500	5.8	300.7

Specific Conditions of Use:

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KCD0-SD3-Ex1.1245*(.SP)* Solenoid Driver

Equipment Ratings:

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Groups A/B (IIC)	26	110	715	99	2.9	49.3
Groups C, E, F, G (IIB/IIIC)				770	11.7	197.5
Group D (IIA)				2600	23.5	395

Specific Conditions of Use:

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KCD2-SLD-Ex1.1045*(.SP)* Solenoid Driver

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Markings:

Associated Apparatus providing Intrinsically Safe connections to Class I, II, III, Division 1, Groups ABCDEFG
Class I, Division 2, Groups ABCD T4
Class I, Zone 2, AEx ec nC [ia Ga] IIC T4 Gc
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Description of Equipment:

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6. Only use operating elements in the absence of a potentially explosive atmosphere.

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