


UK Type Examination Certificate CML 23UKEX2155 Issue 0**United Kingdom Conformity Assessment**


- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Safety isolation amplifier type KFD2-SH-Ex1***
- 3 Manufacturer **Pepperl+Fuchs SE**
- 4 Address **Lilienthalstrasse 200
68307 Mannheim
Germany**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.


The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-11:2012

- 10 The equipment shall be marked with the following:

 II (1) G
[Ex ia Ga] IIC

 II (1) D
[Ex ia Da] IIIC

 I (M1)
[Ex ia Ma] I



11 Description

The safety isolation amplifier, type KD-SH-EX1 is used for the transmission of control commands from the explosion hazardous area into the non-explosion hazardous area.

The safety isolation amplifier, type K*D*-SH-Ex1 * shall be installed outside of the explosion hazardous area.

The type code of the safety isolation amplifier of type KD-SH-Ex1 reads as follows:

KFD2-SH-Ex1* Enclosure: KF = Enclosure with removable terminals

KFD2-SH-Ex1* Supply: DC with a nominal voltage of 24V

KFD2-SH-EX1* Function: Safety isolation amplifier

KFD2-SH-Ex1* Ex-version

KFD2-SH-Ex1* Channels: 1

KFD2-SH-Ex1* Options having no influence on the type of protection
(may be dispensed with)

The maximum permissible ambient temperature is 60°C.

Electrical data

Supply circuit..... U = 20 ... 35 V DC
(terminals 22, 23, 24 or Um = 40 VAC/DC
powerrail contacts)

Control circuit.. type of protection Intrinsic Safety Ex ia IIC/IIB/IIIC/IIA/I
(terminals 10, 12) or Ex ib IIC/IIB/IIIC/IIA/I

Maximum values:

U_o = 9.56 V
I_o = 16.8 mA
P_o = 41 mW

linear characteristic

R_i = 567.6 Ω

L_i negligibly low

C_i negligibly low

Maximum values for individually occurring external reactances:
(according to EN 60079-11, Annex A)

	Ex ia or ib			
	IIC	IIB/IIIC	IIA	I
Lo	125 mH	500 mH	1 H	1 H
Co	3,6 μF	26 μF	210 μF	500 μF

Maximum values for external reactances occurring together:
(according to Ispark 6.2)

	Ex ia or ib				
	IIC	IIC	IIB/IIIC	IIA	I
Lo	3 mH	4 mH	6 mH	10 mH	10 mH
Co	910 nF	860 nF	4,2 μF	5,4 μF	6,9 μF

Output circuits

Relay..... (terminals 13, 14, 15 or 19, 20, 21)	Alternating current	Direct current
	U ≤ 253 V AC	U ≤ 24 VDC
	I ≤ 1 A	I ≤ 1 A
	S ≤ 253 VA	P ≤ 24 W
	cos φ ≥ 0.7	
	Um = 253 VAC/DC	



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Fault signal output.....U ≤ 40 V
(terminals 16, 17) I ≤ 15 mA
P ≤ 600 mW
Um = 60 VAC/DC

The intrinsically safe control circuit is safely electrically isolated from all further circuits up to a peak value of the nominal voltage of 375 V.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	22 Mar 2023	R14112DG/00	Prime Certificate issued.

Note: Drawings that describe the equipment are listed or referred to in the Annex.

13 Conditions of Manufacture

None.

14 Specific Conditions of Use

None.

Certificate Annex

Certificate Number CML 23UKEX2155
Equipment Safety isolation amplifier type KFD2-SH-Ex1*
Manufacturer Pepperl+Fuchs SE



The following documents describe the equipment defined in this certificate:

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For drawings describing the equipment, refer to attached certificate PTB 00 ATEX 2042. In addition to the drawings listed on PTB 00 ATEX 2042, the following drawings include the additional marking required for this UK Type Examination certification:

Drawing No	Sheets	Rev	Approved date	Title
16-1555CM-10	1 to 2	0	22 Mar 2023	Additional Marking Requirements for UKCA