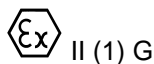


UK Type Examination Certificate CML 21UKEX2897 Issue 0**United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Transformer Isolated Voltage Repeater Type KFD2-VR-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

Ta= -20°C to +60°C



II (1) D

[Ex ia Da] IIIC

Ta= -20°C to +60°C



I (M1)

[Ex ia Ma] I

Ta= -20°C to +60°C



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11 Description

The Transformer Isolated Repeater Type KFD2-VR-Exl.** ... is designed to restrict the transfer of energy from unspecified non-hazardous area equipment to intrinsically safe temperature sensors located in a hazardous area and provides galvanic isolation between the hazardous area and non-hazardous area circuits.

The equipment comprises a number of electronic components, including transformers, an opto-isolator, fuses, resistors and zener diodes, all mounted on a single printed circuit board and housed within a plastic enclosure fitted with terminals for external connections.

The segregation of the hazardous area circuits meets the requirements for 250V.

Input I Output Parameters

KFD2-VR-Exl.18, KFD2-VR-Exl.19, KFD2-VR-Exl.19-Y109129

Terminals 7, 8, 11 & 12 and Power Rail

$U_m = 253V$

The equipment is designed to operate from a d.c. supply of up to 40V.

All types except KFD2-VR-Exl.19-Y109129 variant

Terminals 4 & 5

$U_o = 18V$ $C_i = 0$

$I_o = 4.2mA$ $L_i = 0$

$P_o = 19mW$

KFD2-VR-Exl.19-Y109129 variant

Terminals 4 & 5

$U_o = 15.5V$ $C_i = 0$

$I_o = 7.2mA$ $L_i = 0$

$P_o = 28mW$

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area load connected to the hazardous area connections of the apparatus must not exceed the following values:

Group	Capacitance (μF)	Inductance (mH) or L/R Ratio ($\mu H/\Omega$)
IIC	0.309	492 952
IIB	1.78	1000 3807
IIA	7.60	1000 7615
I	10.00	1000 14000



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The above parameters apply when one of the two conditions below is given:

- the total L, of the external circuit (excluding the cable) is < 1% of the L value or
- the total C, of the external circuit (excluding the cable) is < 1% of the C value.

The above parameters are reduced to 50% when both of the two conditions below are given:

- the total L, of the external circuit (excluding the cable) $\geq 1\%$ of the L value and
- the total C, of the external circuit (excluding the cable) $\geq 1\%$ of the C value.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 μF for Groups I, IIA & IIB/IIIC and 600nF for Group IIC

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	22 Oct 2021	R14112AP/00	Prime Certificate issued.

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

13 Conditions of Manufacture

The following condition is required of the manufacturing process for compliance with the certification.

- Each transformer shall withstand a routine test of 1500Vrms for 60s (1800Vrms for 1s) applied between W1, W2

14 and W3, W4, W5, W6. Specific Conditions of Use

None.

Certificate Annex

Certificate Number CML 21UKEX2897
Equipment Transformer Isolated Voltage Repeater Type KFD2-VR-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 BAS 01ATEX7262. In addition to the drawings listed on BAS 01ATEX7262, 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 Oct 2021	Additional Marking Requirements for UKCA