



UK Type Examination Certificate CML 21UKEX21109X 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 **Resistance Repeater Type KCD2-RR(2)-Ex1(.SP)**
- 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	(-20°C / -40°C ≤ Ta ≤ +60°C / +70°C)
	II (1)D	[Ex ia Da] IIIC	(-20°C / -40°C ≤ Ta ≤ +60°C / +70°C)
	I (M1)	[Ex ia Ma] I	(-20°C / -40°C ≤ Ta ≤ +60°C / +70°C)



CML 21UKEX21109X
Issue 0

11 Description

The Resistance Repeater Type KCD2-RR(2)-Ex1(.SP) is designed to transfer a resistance value from a hazardous area to unspecified apparatus located in a non-hazardous area. The hazardous area circuit is galvanically isolated from the non-hazardous area circuit using transformers and the voltage and current appearing at the hazardous area connectors are limited to intrinsically safe levels.

The Resistance Repeater Type KCD2-RR(2)-Ex1(.SP) comprises a number of electronic components including three isolating transformers, fuses, zener diodes and resistors all mounted on a single printed circuit board and housed in a plastic enclosure with removable terminals (units fitted with the spring terminal plugs in place of screw terminal plugs will have the addition of ".SP" to the type name i.e. KCD2-RR(2)-Ex1(.SP). An LED provides power status indication.

The KCD2-RR(2)-Ex1(.SP) may be marked as follows:

See Section 10

Input / Output Parameters

Non-Hazardous Area Terminals

KCD2-RR-Ex1{.SP} & KCD2-RR2-Ex1{.SP}

Power Supply

Terminal 9 wrt 10 or Power rail (terminal 1 wrt 2)

Um= 250V

The apparatus is designed to operate from a d.c. supply of up to 30V on the above terminals.

Output

Terminals 5, 6, 7 & 8

Um= 250V

Hazardous Area Terminals

KCD2-RR-Ex1(SP)

Input

Terminals 1, 2, 3 & 4

U_o = 12.4 V C_i = 0

I_o = 17.4 mA L_i = 0

P_o = 54 mW

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



CML 21UKEX21109X
Issue 0

GROUP	CAPACITANCE (μ F)	Inductance (mH)	OR L/R RATIO (μ H/ohm)
IIC	1.24	117	597
IIB / IIIC	7.9	469	2388
IIA	30	939	4776
I	31	1541	7838

NOTE:

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

- the total L_i of the external circuit (excluding the cable) is $< 1\%$ of the L_o value or
- the total C_i of the external circuit (excluding the cable) is $< 1\%$ of the C_o value.

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

- the total L_i of the external circuit (excluding the cable) $\geq 1\%$ of the L_o value and
- the total C_i of the external circuit (excluding the cable) $\geq 1\%$ of the C_o value.

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

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	28 Sept 2021	R14112BN/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

1. The KCD2-RR(2)-Ex1(.SP) must be installed in a controlled environment with suitably reduced pollution.

Certificate Annex

Certificate Number CML 21UKEX21109X
Equipment Resistance Repeater Type KCD2-RR(2)-Ex1(.SP)
Manufacturer Pepperl+Fuchs SE



The following documents describe the equipment defined in this certificate:

Issue 0

For drawings describing the equipment, refer to attached certificate Baseefa10ATEX0061X. In addition to the drawings listed on Baseefa10ATEX0061X, 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	28 Sept 2021	Additional Marking Requirements for UKCA