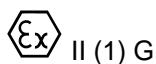


UK Type Examination Certificate CML 21UKEX2940X Issue 1**United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Galvanically Isolated Barrier Series KCD2-STC-Ex1(.SP)-** and KCD2-SCD-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



II (1) D

[Ex ia Da] IIIC



I (M1)

[Ex ia Ma] I



CML 21UKEX2940X
Issue 1

11 Description

The SMART Transmitter Power Supply KCD2-STC-Ex1(.SP) and SMART Current Driver and KCD2-SCD-Ex1(.SP) are galvanically isolated apparatus. The equipments input circuit is isolated from the output circuit by the transformer. The voltage and current limitation for the input circuit is achieved with zener diodes and current limiting devices.

All Equipment are mounted inside plastic housing and equipped with terminal blocks (a pair is for circuitry related to intrinsic safety and the other is for circuitry not related to intrinsic safety).

The products share the same circuit, components and electronic board; they differ as follows:

- Module KCD2-STC-Ex1 has screw terminal blocks.
- Module KCD2-STC-Ex1.SP has spring terminal blocks.
- Module KCD2-SCD-Ex1 has screw terminal blocks.
- Module KCD2-SCD-Ex1.SP has spring terminal blocks.

The product names could be supplemented by additional characters, indicating equipment variants that have no influence on the approval.

The SMART Transmitter Power Supply types KCD2-STC-Ex1 and KCD2-STC-Ex1.SP supply 2-wire SMART transmitters in a hazardous area and can also be used with 2-wire SMART current sources, It transfers the analog input signal to the safe area as an isolated current value.

Digital signals may be superimposed on the input signal in the hazardous or safe area and are transferred bi-directionally. Selectable output of current source, sink mode, or voltage output is available via DIP switches.

The SMART Current Driver types KCD2-SCD-Ex1 and KCD2-SCD-Ex1.SP drives SMART I/P converters, electrical valves, and positioners in hazardous areas. Digital signals are superimposed on the analog values at the field or control side and are transferred bi-directionally. Current transferred across the DC/DC converter is repeated at terminals 1 and 2. Sockets for the connection of a HART communicator are integrated into the terminals of the device.

Electrical characteristic- type of protection: [Ex ia]

Non-intrinsically safe circuits

Power supply - Terminals: 9(+); 10(-) and/or PowerRail (PR1; PR2)

Um: 250 Vac Rated voltage Un: 24 Vdc (19 ÷ 30 Vdc)

Analog Input/Output - Terminals: 6(+); 5(-) and 8(+); 7(-)

Um: 250 Vac Rated voltage Un: up to 30 Vdc

Tamb.: -40°C up to +70 °C

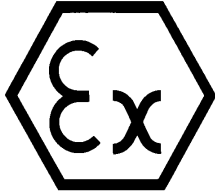
Intrinsically safe circuits – equipment KCD2-STC-Ex 1 ... and KCD2-SCD-Ex 1 ...

Terminals	Uo	Io	Po	Gas Group	Co (µF)	Lo (mH)	Lo/Ro (µH/Ω)
1(+); 2(-)	25.2V	100 mA	630 mW	IIC	0.100	3.5	55
				IIB	0.81	14	222
				IIA	2.8	28	444
				I	4.14	46	743

Ci = 5.7nF;

Li = negligible;

Output characteristic: linear.



Intrinsically safe circuits – equipment KCD2-STC-Ex 1 ... only

Terminals	Uo	Io	Po	Gas Group	Co (µF)	Lo (mH)	Lo/Ro (µH/Ω)
	Ui	Ii	Pi				
3(+); 4(-)	7.2V	100 mA	25 mW	IIC	13.49	3.5	27
				IIB	239	14	108
	30 V	128 mA	1 W	IIA	1000	28	216
				I	1000	46	356

Ci = 5.7nF; Li = negligible; Output characteristic: linear.

Note - The maximum permitted external values for capacitances, inductances and L/R, written on the above tables apply when one of the two below conditions is given.

The above maximum Lo and Co parameters apply where:

- the total Ci of the external circuit (excluding the cable) is < 1% of the Co value or
- the total Li of the external circuit (excluding the cable) is < 1% of the Lo value.

The above Lo and Co parameters shall reduce to 50% when both of the two conditions below are given:

- the total Li of the external circuit (excluding the cable) > 1% of the Lo value and
- the total Ci of the external circuit (excluding the cable) > 1% of the Co value.

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

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	19 Nov 2021	R14112AY/00	Prime Certificate issued.
1		R16523A/00	Introduction of Variation 1.

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

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. The Manufacturer shall carry out on the transformer T1, the Routine Tests for Infallible Transformers with an applied voltage of 1500 V applied between the input and output windings. The test voltage shall be applied for a period of at least 60 s. Alternatively, the test may be carried out at 1.2 times the test voltage, but with reduced duration of at least 1 s.

14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. The equipment must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to EN 60664-1.
- ii. The equipment must be installed and operated only in an environment of overvoltage category II (or better) according to EN 60664-1.

Certificate Annex

Certificate Number CML 21UKEX2940X
Equipment Galvanically Isolated Barrier Series KCD2-STC-Ex1(.SP)-
.** and KCD2-SCD-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 CESI 06ATEX021. In addition to the drawings listed on CESI 06ATEX021, 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	19 Nov 2021	Additional Marking Requirements for UKCA

Issue 1

For drawings describing the equipment, refer to attached certificate CESI 06ATEX021.