# UK Type Examination Certificate CML 21UKEX2894X 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 **Transmitter Power Supply Type KCD2-STC-Ex1.2O***

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 60079-0:2018 EN 60079-11:2012

10 The equipment shall be marked with the following:

| | | |
|---|---|---|
| Ex II(1)G | Ex II(1)D | Ex I(MI) |
| [Ex ia Ga]IIC | [Ex ia Da] IIIC | [Ex ia Ma]I |
| (-20C< Ta < +60C /+70C) | (-20C <Ta < +60°C /+70C) | (-20C < Ta < +60C /+70C) |

Certification Officer

## 11 Description

The Transmitter Power Supply Type KCD2-STC-Ex1.2O is designed to monitoring signals from equipment in a hazardous area to unspecified apparatus located in a non-hazardous area and communication signals in both directions. 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 Transmitter Power Supply KCD2-STC-Ex1.2O comprises a number of electronic components including four isolating transformer, fuses, zener diodes and resistors all mounted on a single printed circuit board and housed in a plastic enclosure with plug-in terminals for hazardous and non-hazardous area connections. LED indication is provided for power• on status.

The following variants are covered by this certificate:

KCD2 - STC - Ex1.2O
KCD2 - STC - Ex1.2O.ES
KCD2 - STC - Ex1.2O.DE
KCD2 - STV - Ex1.2O
KCD2 - STV - Ex1.2O.ES
KCD2 - STC - Ex1.2O(**) – Y1…n
KCD2 - STV – Ex1.2O(**) – Y1…n

**Input/ Output Parameters**

Non – Hazardous Area Connector(s)

Power Supply: Terminals 9 & 10 and power rail 1 & 2.

Um = 253V r.m.s

Output Terminals 5, 6, 7 & 8

Um = 253V r.m.s

The circuit connected to the output is designed to operate from a d.c supply of up to 30V.

**Hazardous Area Connectors(s)**

Input: Terminals 1 & 2

Uo = 25.2V

Io = 93mA

Po = 656mW

Ci = 12nF

Li = 0

The output characteristic is trapezoidal, Uq= 28.2 (see Annex C, EN 60079-25:2010)

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 (µH/ohm) |
|---|---|---|---|---|
| IIC | 0.095 | 3.400 | | 54.53 |
| IIB | 0.808 | 16.44 | | 218.12 |
| IIA | 2.888 | 32.88 | | 436.25 |
| I | 4.788 | 53.95 | | 715.73 |

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

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

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

The above parameters are reduced 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 and

- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

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

| Input: Terminals 3 & 4 | Input: Terminals 3(+ve) wrt 4 | Input: Terminals 4 (+ve) wrt 3 |
|---|---|---|
| Uo = 30 V | Uo = 5 V | Uo = 0.9 V |
| Io = 115 mA | Io = 0 mA | Io = 6.8 mA |
| Po = 700 mW | Po = 0 mW | Po = 1.6 mW |
| Ci = 12 nF | Ci = 12 nF | Ci = 12 nF |
| Li = 0 | Li = 0 | Li = 0 |

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 (µH/ohm) |
|---|---|---|---|---|
| IIC | 1000 | 768 | | 23466 |
| IIB | 1000 | 3075 | | 93866 |
| IIA | 1000 | 6151 | | 187773 |
| I | 1000 | 10092 | | 208000 |

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

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

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

The above parameters are reduced 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 and
- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

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

## 12 Certificate history and evaluation reports

| Issue | Date | Associated report | Notes |
|---|---|---|---|
| 0 | 13 Aug 2021 | R14112AJ/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

The KCD2-STC-Ex1.2O must be installed in a controlled environment with suitable reduced pollution.

# Certificate Annex

| | |
|---|---|
| **Certificate Number** | **CML 21UKEX2894X** |
| **Equipment** | **Transmitter Power Supply Type KCD2-STC-Ex1.2O*** |
| **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 Baseefa 13ATEX0077X Issue 1. In addition to the drawings listed on Baseefa 13ATEX0077X Issue, 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 | 13 Aug 2021 | Additional Marking Requirements for UKCA |