

**UK Type Examination Certificate CML 22UKEX2509 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 **Impulse Evaluating device type KF\*\*-D\*\*-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:



I M1

[Ex ia Ma]



II (1) G

[Ex ia Ga] IIC



II (1) D

[ Ex ia Da] IIIC



CML 22UKEX2509  
Issue 0

## 11 Description

The impulse evaluating device type KF\*\*-D\*\*-Ex1\*\* is used for evaluating of connected transmitter, which may be installed inside of hazardous explosive areas.

### Type Code

**KF\*\*-GUT-Ex1.\***

Housing: **KF**: K-Housing with removable terminals

Supply voltage: \*\* = D2 = 20 ... 30 V d.c. or

U8 = 20 ... 90 V d.c. or 48 ... 253 V a.c.

A5 = 115 V a.c. +- 10 %

A6 = 230 V a.c. +- 10 %

Device type: **DU** = Switch Amplifier, Timer Relay Transmitter supply isolator

**DWB** = Rotation Speed Monitor

**Supply voltage**: Number of channels: **Ex1.** = 1 intrinsically safe channel

Display: \* = - (without Display) or .D (with Display)

### **Electrical data:**

Supply circuit  
(Terminals 23, 24)

For connection to non-intrinsically safe circuits with the following maximum values:

KFD2-D\*\*-Ex1\*\*:

U = 20 V ... 30 V d.c.

Um = 40 V

KFU8-D\*\*-Ex1\*\*:

U = 20 V ... 90 V d.c. or 48 ... 253 V a.c.

Um = 253 V

KFA5-D\*\*-Ex1\*\*:

U = 115 V a.c.

Um = 253 V

KFA6-D\*\*-Ex1\*\*:

U = 230 V a.c.

Um = 253 V

or

Via Power Rail  
(Terminals PR: 1, 2)

For connection to non-intrinsically safe circuits with the following maximum values:

Only KFD2-D\*\*-Ex1\*\*:

U = 20 V ... 30 V d.c.

Um = 40 V



CML 22UKEX2509  
Issue 0

Contact circuits  
(Terminals 10, 11, 12 and 16, 17, 18)

For connection to non-intrinsically safe circuits with the following maximum values:

Alternating voltage:

$U = 253 \text{ V}$   
 $I = 2 \text{ A}$   
 $S = 500 \text{ VA}$   
 $\cos \varphi = 0.7$   
 $U_m = 253 \text{ V}$

Direct voltage:

$U = 40 \text{ V}$   
 $I = 2 \text{ A}$   
 $P = 80 \text{ W}$   
 $U_m = 253 \text{ V}$

Transistor output  
(Terminals 19, 20)

For connection to non-intrinsically safe circuits with maximum rated voltage:

$U_m = 40 \text{ V}$

Control input  
(Terminals 13, 14)

For connection to non-intrinsically safe circuits with maximum rated voltage:

$U_m = 40 \text{ V}$

RS232 interface  
(Terminals PR 3, 5)

For connection to non-intrinsically safe circuits with maximum rated voltage:

$U_m = 40 \text{ V}$

Collective Error Messaging  
(Terminal PR 4)

For connection to non-intrinsically safe circuits with maximum rated voltage:

$U_m = 40 \text{ V}$

Sensor input  
(Terminals 1, 3)

In type of protection intrinsic safety Ex ia I/IC/IIB/IIA with the following maximum values:

$U_o = 10,1 \text{ V}$   
 $I_o = 13,5 \text{ mA}$   
 $P_o = 34 \text{ mW}$

Characteristic line: Linear

Effective internal capacitance  $C_i$   
Effective internal inductance  $L_i$

Negligibly small  
Negligibly small



CML 22UKEX2509  
Issue 0

The maximum permissible values for the external inductance  $L_o$  and the external capacitance  $C_o$  can be taken from the following table:

	<b>IIC</b>	<b>IIB resp. IIIC</b>	<b>IIA</b>	<b>I</b>
$L_o$ [mH]	195	730	1000	1000
$C_o$ [ $\mu$ F]	2.87	19.4	93	79

The above mentioned values of the outer reactance apply only on condition that simultaneous appearance of the outer inductance and capacitance does not need to be considered.

In case of simultaneous appearance of capacitance and inductance in concentrated form the permissible maximum values have to be taken from the following table:

	<b>IIC</b>	<b>IIB resp. IIIC</b>	<b>IIA</b>	<b>I</b>
$L_o$ [mH]	5	10	20	20
$C_o$ [ $\mu$ F]	0.4	1.5	3.0	3.0

The input circuits are safely galvanically separated from all other circuits up to a peak value of the nominal voltage of 375 V.

## 12 Certificate history and evaluation reports

<b>Issue</b>	<b>Date</b>	<b>Associated report</b>	<b>Notes</b>
0	19 Aug 2022	R14112CN/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 22UKEX2509  
**Equipment** Impulse Evaluating device type KF\*\*-D\*\*-Ex1\*\*  
**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 TUV 99 ATEX 1408. In addition to the drawings listed on TUV 99 ATEX 1408, 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 Aug 2022	Additional Marking Requirements for UKCA