

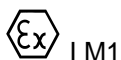
UK Type Examination Certificate CML 22UKEX2510 Issue 0**United Kingdom Conformity Assessment**

- 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**-UF*-Ex*-***
- 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.

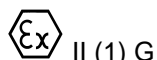
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 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

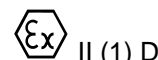
- 10 The equipment shall be marked with the following:



[Ex ia Ma] I



[Ex ia Ga] IIC



[Ex ia Da] IIIC





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11 Description

The impulse evaluating device type KF**-UF*-Ex** is used for evaluating of connected Namur sensors or mechanical contacts, 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.

Device type: **UFC** = Frequency Converter with trip values

UFT = Frequency Converter with Direction and Synchronization

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

Ex2 = 2 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-UF*-Ex***

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

Um = 40 V

KFU8-UF*-Ex***

U = 20 V ... 90 V d.c. or 48 ... 253 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-UF*-Ex***

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

Um = 40 V

Current output
(Terminals 7, 8)

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

Um = 40 V



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

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

Alternating voltage:

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

Direct voltage:

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

Transistor outputs
(Terminals 19, 20 and 20, 21)

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

$U_m = 40 \text{ V}$

Control inputs
(Terminals 13, 14 and 14, 15)

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 inputs
(Terminals 1, 3 or 4, 6)

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

Per input: 2 inputs parallel

$U_o = 10.1 \text{ V}$ $U_o = 10.1 \text{ V}$
 $I_o = 13.5 \text{ mA}$ $I_o = 27 \text{ mA}$
 $P_o = 34 \text{ mW}$ $P_o = 68 \text{ mW}$

Characteristic line: Linear



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Effective internal capacitance C_i Negligibly small
Effective internal inductance L_i Negligibly small

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

Per Input				
	IIC	IIB resp. IIIC	IIA	I
Lo [mH]	195	730	1000	1000
Co [μ F]	2.87	19.4	93	79

2 inputs parallel				
	IIC	IIB resp. IIIC	IIA	I
Lo [mH]	46	170	380	20
Co [μ 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 per input or for 2 inputs in parallel have to be taken from the following table:

	IIC	IIB resp. IIIC	IIA	I
Lo [mH]	5	10	20	20
Co [μ 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

Issue	Date	Associated report	Notes
0	19 Aug 2022	R14112CO/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

This certificate shall only be copied
in its entirety and without change
www.CMLEx.com

Certificate Annex

Certificate Number CML 22UKEX2510
Equipment Impulse Evaluating Device type KF**-UF*-Ex*-*
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 99ATEX1471. In addition to the drawings listed on TUV 99ATEX1471, 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