

UK Type Examination Certificate CML 21UKEX21280X Issue 0**United Kingdom Conformity Assessment**

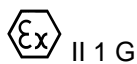
- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Capacitive Sensors CJ..-12GK-N...and CJ..-18GK-N...**
- 3 Manufacturer **Pepperl+Fuchs SE**
- 4 Address **Lilienthalstrasse 200
68307 Mannheim
Germany**

- 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.

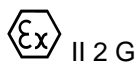
The examination and test results are recorded in the confidential reports listed in Section 12.

- 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

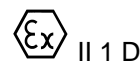
- 10 The equipment shall be marked with the following:



Ex ia IIC T6...T1 Ga



Ex ia IIC T6...T1 Gb



Ex ia IIIC T₂₀₀135°C Da



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11 Description

The sensors of the types CJ..-12GK-N... and CJ..-18GK-N... are capacitive proximity sensors according to the Namur-Standard.

The electrical connection is realised with terminals, prefabricated cable, plug/socket connection or connector depending on the sensor type.

Type code:

CJ	..	-	12	G	K	-	N	-	...	-	Y	...	Capacitive Sensor
CJ	..	-	12	G	K	-	N	-	...	-	Y	...	Sensing distance in mm
CJ	..	-	12	G	K	-	N	-	...	-	Y	...	Sensor diameter in mm
CJ	..	-	12	G	K	-	N	-	...	-	Y	...	Enclosure with thread
CJ	..	-	12	G	K	-	N	-	...	-	Y	...	Enclosure material plastic
CJ	..	-	12	G	K	-	N	-	...	-	Y	...	NAMUR electronics
CJ	..	-	12	G	K	-	N	-	...	-	Y	...	Additional sensor parameters without impact on safety
CJ	..	-	12	G	K	-	N	-	...	-	Y	...	Customer specific version

Electrical and thermal data:

For the use of the capacitive sensors type CJ..-12GK-N... and CJ..-18GK-N... as II 1 G and II 2 G equipment, the following data apply:

Sensor circuit

In type of protection Intrinsic Safety Ex ia IIC

(Connection, see operating instructions)

Only for the connection to certified intrinsically safe circuits.

Maximum values:

Type 1

$U_i = 16\text{ V}$

$I_i = 25\text{ mA}$

$P_i = 34\text{ mW}$

Type 2

$U_i = 16\text{ V}$

$I_i = 25\text{ mA}$

$P_i = 64\text{ mW}$

Type 3

$U_i = 16\text{ V}$

$I_i = 52\text{ mA}$

$P_i = 169\text{ mW}$

The permissible ambient temperature range for the use of the capacitive sensors depends on the electrical data of the devices. The permissible lower ambient temperature is -60°C , the permissible maximum ambient temperature is given in the following table:

Group II			Type 1			Type 2			Type 3		
			$U_i = 16\text{ V}$			$U_i = 16\text{ V}$			$U_i = 16\text{ V}$		
			$I_i = 25\text{ mA}$			$I_i = 25\text{ mA}$			$I_i = 52\text{ mA}$		
			$P_i = 34\text{ mW}$			$P_i = 64\text{ mW}$			$P_i = 169\text{ mW}$		
Maximum permissible ambient temperature in $^\circ\text{C}$ for use in temperature class											
Type	C_i / nF	L_i / μH	T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1
CJ..-12GK-N...	60	10	73	88	100	66	81	100	45	60	89
CJ..-18GK-N...	60	10	73	88	100	66	81	100	45	60	89

The stated values of effective internal capacitance C_i and inductance L_i consider already a connection cable of a length of 10 m.



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For the use of the capacitive sensors type CJ..-12GK-N... and CJ..-18GK-N... as II 1 D equipment, the following data apply:

Sensor circuit
(Connection, see operating
Instructions)

In type of protection Intrinsic Safety Ex ia IIIC
Only for the connection to certified intrinsically safe
circuits.

Maximum values:

Type 1	Type 2	Type 3
U _i = 16 V	U _i = 16 V	U _i = 16 V
I _i = 25 mA	I _i = 25 mA	I _i = 52 mA
P _i = 34 mW	P _i = 64 mW	P _i = 169 mW

The permissible range of ambient temperature for the use of capacitive sensors depends on the electrical data of the devices. The permissible lower ambient temperature is -60°C, the permissible maximum ambient temperature is given in the following table:

Group III			Type 1	Type 2	Type 3
			U _i = 16 V	U _i = 16 V	U _i = 16 V
			I _i = 25 mA	I _i = 25 mA	I _i = 52 mA
			P _i = 34 mW	P _i = 64 mW	P _i = 169 mW
Maximum permissible ambient temperature					
Type	C _i / nF	L _i / μH	[°C]	[°C]	[°C]
CJ..-12GK-N...	60	10	97	91	69
CJ..-18GK-N...	60	10	97	91	69

The stated values of effective internal capacitance C_i and inductance L_i consider already a connection cable of a length of 10 m.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	19 Nov 2021	R14112BV/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 capacitive sensors type CJ..-12GK-N... and CJ..-18GK-N... are not marked with the permissible ambient temperature range in dependence on the temperature class and the type of the intrinsically safe supply. The designation has to be taken from the table above or from the operating instructions.



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2. The capacitive sensors type CJ..-12GK-N... and CJ..-18GK-N... shall be protected against hazardous electrostatic charging when used as category 1 apparatus in gases of group IIC.
3. The capacitive sensors type CJ..-12GK-N... and CJ..-18GK-N... shall be protected against hazardous electrostatic charging when used inside explosion hazardous dust atmospheres

Certificate Annex

Certificate Number CML 21UKEX21280X
Equipment Capacitive Sensors CJ..-12GK-N...and CJ..-18GK-N...
Manufacturer Pepperl+Fuchs SE



The following documents describe the equipment defined in this certificate:

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For drawings describing the equipment, refer to attached certificate TUV 03 ATEX 2003X. In addition to the drawings listed on TUV 03 ATEX 2003X, 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