CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **KEMA 05ATEX1111 X** Issue Number: **2**

(4) Product: **Ultrasonic Level Transmitter Series**

LUC-M10-.....-...-.., LUC-M20-.....-...-.. and LUC-M40-....-.....-..

(5) Manufacturer: **Pepperl+Fuchs SE**

(6) Address: **Lilienthalstrasse 200, 68307 Mannheim Germany**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number 208378800, Issue 2.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0 : 2018	**EN 60079-1 : 2014**	**EN 60079-11 : 2012**
EN 60079-26 : 2015	**EN 60079-31 : 2014**	

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 1/2 G or II 2 G Ex ia IIC T6…T4 Ga/Gb or Ex ia IIC T6…T4 Gb or
II 1/2 G or II 2 G Ex db [ia] IIC T6…T4 Ga/Gb or Ex db [ia] IIC T6…T4 Gb or
II 1/2 D or II 2 D Ex ta/tb IIIC T104 °C Da/Db or Ex tb IIIC T95 °C Db or
II 1/3 D Ex ta/tc IIIC T104 °C Da/Dc

Date of certification: 17 January 2025

DEKRA Certification B.V.

R. Schuller
Certification Manager

Throughout this document, a point is used as the decimal separator.

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(13) # SCHEDULE

(14) **to EU-Type Examination Certificate KEMA 05ATEX1111 X** Issue No. **2**

(15) **Description**

The Ultrasonic Level Transmitters Series LUC-M10-.....-...-.. (with 1½" sensor diameter), LUC-M20-.....-...-.. (with 2" sensor diameter) and LUC-M40-....-.....-.. (with 3" sensor diameter) are used for continuous, contactless level measurement in fluids and coarse bulk materials in a potentially explosive atmosphere.
The Level Transmitter detects the level and converts it into an electrical signal (2-wire, 4 … 20 mA, with digital communication HART).
The plastic sensor is suitable for use in atmospheres where the use of apparatus of equipment category 1 G or 1 D is required.

In addition to the sensor diameter, the different types of level transmitters differ in type of enclousure, process connection and cable entry.

The level transmitters series LUC-M10-..A4.-...-EX, LUC-M20-..A4.-...-EX and LUC-M40-.A4.-.....-EX are provided with an integrated overvoltage protection (OVP).

Optionally a display with local adjustment can be fitted.

Alternatively to the built-in display, the level transmitter may be constructed such that an external certified Display Unit, for example type LUC-Z40-Ex1., can be connected.
The electronics enclosure of the level transmitters series LUC-M10-....*-...-E2, LUC-M20-....*-...-E2 and LUC-M40-...*-.....-E2, as well as the display itself, may only be applied in equipment category 3 D; also refer to the electrical data of these series.

Equipment category and type of protection, dependent on the type designation in accordance with the following table:

model series			equipment category and type of explosion protection
LUC-M10-	LUC-M20-	LUC-M40-	
.....-...-EX	.....-...-EX	....-.....-EX	II 1/2 G or II 2 G Ex ia IIC T6…T4 Ga/Gb or Ex ia IIC T6…T4 Gb
.....-...-SX	.....-...-SX	....-.....-SX	II 1/2 G or II 2 G Ex db [ia] IIC T6…T4 Ga/Gb or Ex db [ia] IIC T6…T4 Gb
.....-...-ES	.....-...-ES	....-.....-ES	II 1/2 D or II 2 D Ex ta/tb IIIC T104 °C Da/Db or Ex tb IIIC T95 °C Db
.....-...-E2	.....-...-E2	....-.....-E2	II 1/3 D Ex ta/tc IIIC T104 °C Da/Dc

The enclosure of the level transmitters series ...-ES and ...-E2 provides a degree of protection of at least IP65 in accordance with EN 60529.

(13) **SCHEDULE**

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Temperature data

Series ...EX, ...SX

Ambient temperature range dependent on type and temperature class in accordance with the following table:

Maximum process temperature Tp = +80 °C

model series			temperature class		
LUC-M10-	LUC-M20-	LUC-M40-	T6	T5	T4
			ambient temperature range		
..A1.-IH.-EX	..A1.-IH.-EX	..A1.-IH.-EX	-40 °C … +60 °C	-40 °C … +80 °C	-40 °C … +80 °C
..A4.-IH.-EX	..A4.-IH.-EX	..A4.-IH.-EX	-40 °C ... +60 °C	-40 °C ... +75 °C	-40 °C ... +80 °C
…..-…-SX	…..-…-SX	....-…..-SX	-40 °C … +60 °C	-40 °C … +60 °C	-40 °C … +60 °C

Series ...ES, ...E2

Ambient temperature range -20 °C ... +80 °C for LUC-M10 and LUC-M20.
Ambient temperature range -40 °C ... +80 °C for LUC-M40.

Maximum process temperature Tp = +80 °C

The maximum surface temperature "T" of the level transmitter, as given in the following table, is based on the maximum ambient temperature of 80 °C.

model series			max. temperature of the level transmitter (T)
LUC-M10-	LUC-M20-	LUC-M40-	
.....-IH.-ES	.....-IH.-ES	.....-IH.-ES	104 °C
.....-IH.-E2	.....-IH.-E2	.....-IH.-E2	95 °C

Electrical data

Series ...-EX

The supply and output circuit (terminals 1 and 2) of level transmitters series ...-IH... is in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the maximum values according to the table below:

model series			maximum values				
LUC-M10-	LUC-M20-	LUC-M40-	U_i	I_i	P_i	C_i	L_i
..A1.-IH…-EX	..A1.-IH…-EX	..A1.-IH…-EX	30 V	300 mA	1 W	13 nF	0 mH
..A4.-IH…-EX	..A4.-IH…-EX	..A4.-IH…-EX	30 V	273 mA	1 W	13 nF	0 mH

(13) # SCHEDULE

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Series ...-SX

The electrical data of level transmitters series ...-SX are according to the following table:

model series			function	terminals	nominal values
LUC-M10-	LUC-M20-	LUC-M40-			
....IH...SX			supply and output circuit	1 and 2	$U \leq 30$ Vdc I = 4 ... 20 mA $U_m \leq 250$ Vac

Series ...-ES and ...-E2

The electrical data of level transmitters series ...-ES and ...-E2 are according to the following table:

model series			function	terminals	nominal values
LUC-M10-	LUC-M20-	LUC-M40-			
....-IH...-ES			supply and output circuit	1 and 2	$U \leq 30$ Vdc
....-IH...-E2			supply and output circuit	1 and 2	$U \leq 30$ Vdc $U_m = 32$ Vdc

All models

Display output circuit in type of protection intrinsic safety Ex ia IIC (display/service connection or connector) with the following maximum values:
$U_o = 4.2$ V; $I_o = 34$ mA; $P_o = 36$ mW; $C_o = 4$ µF; $L_o = 5$ mH.

The display may only be used in explosive atmospheres requiring the use of apparatus of at least equipment category 2 G, 3 G or 3 D.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. 208378800, Issue 2.

(17) **Specific conditions of use**

- Low risk of mechanical danger for specific enclosures as specified in Installation manual; This concerns the windowed cover of enclosures in type of protection Ex t;
- The flameproof joints of the flameproof enclosures are not intended to be repaired.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. 208378800, Issue 2.