



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment or protective systems Intended for use in Potentially Explosive Atmospheres – Directive 2014/34/EU

3 EU-Type Examination Certificate Number **LOM 16ATEX2062X** **Issue: 3**

4 Product Counter / Flow controller
Types ZOK-E*K*F3** and ZOK-E*M*F3**

5 Manufacturer Kobold Messring GmbH

6 Address Nordring 22-24
D-65719 Hofheim
GERMANY

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

8 Laboratorio Oficial J.M. Madariaga (LOM), Notified Body No. 0163, in accordance with Article 17 of the 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 the confidential Report **LOM 22.481N**

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

- Standards **EN IEC 60079-0:2018** **EN 60079-11:2012**

Where additional criteria beyond those given here have been used, they are listed at item 18 in 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 2G Ex ia IIC T4 Gb

Getafe,
Electronically signed by:

Certification Committee

RCPCR 25.7/17

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Page 1/3





LABORATORIO OFICIAL J. M. MADARIAGA

13 SHEDULE

14 EU-Type Examination Certificate Number **LOM 16ATEX2062X** **Issue: 3**

15 Description of product

The electronic units ZOK-E... are designed to calculate, display and transmit volume and flow from flowmeters having pulse output or frequency. These units can display flow rate, accumulated flow and zeroing in engineering units as programmed by the user.

The ZOK-E... units are stand alone, or are designed for meter mounting on existing pulse output flowmeters.

ZOK-E3, ZOK-E4 and ZOK-E5 variants comprise a full flow controller including analog and pulse outputs, while ZOK-E1 variant is reduced to a counter function without signal output.

Variants and type codification

Counter/flow controller electronics for meter mount	
ZOK-E1M*F3**	Flow counter, battery and external powered, no outputs, pulse signal input(s).
ZOK-E2M*F3**	Dosing unit, external powered, 2 optocoupler outputs, pulse signal input.
ZOK-E3M*F3**	Flow controller, battery, external or loop powered, 4-20mA output, 2/3-wire, pulse signal input(s). Outputs disabled during battery powering.
ZOK-E4M*F3**	Flow controller, battery, external or loop powered, 4-20mA output with fully HART functionality, pulse signal input(s). Outputs disabled during battery powering.
ZOK-E5M*F3**	Flow controller, external powered, 4-20mA output 3-wire, switching and pulse optocoupler outputs, pulse signal input(s).

Stand alone counter/flow controller electronics	
ZOK-E1K*F3**	Flow counter, battery and external powered, no outputs, pulse signal input(s).
ZOK-E2K*F3**	Dosing unit, external powered, 2 optocoupler outputs, pulse signal input.
ZOK-E3K*F3**	Flow controller, battery, external or loop powered, 4-20mA output, 2/3-wire, pulse signal input(s). Outputs disabled during battery powering.
ZOK-E4K*F3**	Flow controller, battery, external or loop powered, 4-20mA output with fully HART functionality, pulse signal input(s). Outputs disabled during battery powering.
ZOK-E5K*F3**	Flow controller, external powered, 4-20mA output 3-wire, switching and pulse optocoupler outputs, pulse signal input(s).

* = other constructional variants

The variants ZOK-E... support up to two external inputs pulses that can be:

- Potential-free contacts, simple electrical apparatuses
- Intrinsically safe devices powered from this equipment, and with appropriate certification
- Galvanically isolated intrinsically safe outputs from self-powered devices, and appropriate certification

Specific parameters of the type of protection

Power and 4-20 mA input terminals	U_i : 28 V C_i : 0 (negligible)	I_i : 100 mA L_i : 0 (negligible)	P_i : 0,7 W
Input terminals for external sensors External power supply or from loop	U_o : 8,2 V C_o : 3 uF	I_o : 100 mA L_o : the same as the power supply	P_o : 0,7 W
Input terminals for external sensors Internal battery power supply	U_o : 3,9 V C_o : 1000 uF	I_o : 48 mA L_o : 15 mH	P_o : 40 mW
Optocoupler outputs	U_i : 30 V C_i : 0 (negligible)	P_i : 550 mW L_i : 0 (negligible)	



LABORATORIO OFICIAL J. M. MADARIAGA

13 SCHEDULE

14 EU-Type Examination Certificate Number **LOM 16ATEX2062X** **Issue: 3**

15 Description of product (continued)

Ambient temperature: $-20\text{ °C} \leq T_a \leq +60\text{ °C}$

Changes in this edition

To allow the use of two new types of primary lithium thionyl chloride battery cells.

16 Report LOM 22.481N

17 Specific conditions of use

- Attention to electrostatic risk arising from the outer shell, made of plastic material, should be given. It must follow the safety instructions provided by the manufacturer.
- Pulse inputs from intrinsically safe self-powered devices must have galvanic isolation from its internal power supplies.
- Input specific parameters when the device is powered form a three wire connection correspond to the combination of the associated apparatuses.

18 Essential health and safety requirement

Essential Health and Safety Requirements (EHSRs) are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Sheets	Issue	Date	Description
023.617	1	0	2013-07-31	Electronics housing base
023.615	1	0	2013-08-22	Electronics housing cover
023.616	1	0	2013-08-22	Electronics housing transparent cover
802.191	12	3	2016-05-10	PCB interface board
802.192	14	3	2016-05-10	PCB processor board
802.204	7	1.1	2017-01-25	PCB battery circuit
802.218	9	1	2016-04-15	PCB optocouplers board
904.049	1	1.2	2022-08-19	*Electronic assembly documentation set
904.050	1	1	2015-06-15	Electronic assembly documentation set
904.058	4	2	2016-05-09	Electronic assembly documentation set
904.060	10	2	2016-05-09	Electronic assembly documentation set
904.061	10	2	2016-05-09	Electronic assembly documentation set
904.202	1	0	2014-01-28	EX-Battery Pack complete
304.213	1	3	2016-04-25	Block diagram
008.08x	1	0	2016-04-25	Marking labels
023.002	1	0	2013-11-01	Front label
ZOK-Ex K10/0722	30	-	2022	*User Manual

Note: An * is included before the description of documents that are new or revised

20 History of variations

Issue	Date	Report number	Description
0	2016-09-26	LOM 14.084 SP	First certificate
1	2017-04-20	16.832K	Modification of the internal battery circuit The denomination and options of the different variants are modified. No other changes in the circuits
2	2021-11-05	LOM 21.486J	The intrinsic safety parameters corresponding to the optocoupled outputs are assigned