



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx ULD 19.0002X

Issue No: 0

Certificate history:

[Issue No. 0 \(2019-08-21\)](#)

Status: **Current**

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Date of Issue: **2019-08-21**

Applicant: **LIKA Electronic s.r.l.**
Via San Lorenzo 25
Carrè, VI, 36010
Italy

Equipment: **ROTAMAG, Bearingless magnetic ring encoder, Series SMLAX**

Optional accessory:

Type of Protection: **Encapsulation "mc"**

Marking:

Ex mc IIC T4 Gc

-10°C ≤ Ta ≤ +85°C

*Approved for issue on behalf of the IECEx
Certification Body:*

Lucy Frieders

Position:

Staff Engineer

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](#).

Certificate issued by:

UL International DEMKO A/S
Borupvang 5A,
DK-2750 Ballerup
Denmark





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Manufacturer: **LIKA Electronic s.r.l.**
Via San Lorenzo 25
Carrè, VI, 36010
Italy

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-18 : 2014 Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”
Edition:4.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[DK/ULD/ExTR19.0002/00](#)

Quality Assessment Report:

[IT/CES/QAR19.0001/00](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

SMLAX is a series of bearingless encoders for position and speed feedback on applications with large rotating shaft in potentially explosive atmospheres. The SMLAX reading head must be paired with an MRx series magnetic ring.

SMLAX rotary encoder is available with an SSI absolute interface, with an incremental output, and with a dual output (absolute + incremental). An absolute sensor, an incremental sensor, and a reference sensor can be installed in the same package. Thus the magnetic ring can be equipped with two or three tracks according to model.

The absolute resolution does not affect the safety requirements of the system and can be typically 12 bits (4.096 cpr), 13 bits (8.192 cpr), and 14 bits (16.384 cpr) or according to customer's request and the physical characteristics of the measuring system. The absolute position is provided through the SSI interface.

Also the incremental resolution is according to customer's request and the physical characteristic of the measuring system; square wave signals are provided via Push-Pull and Line Driver output circuits.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Care shall be taken to prevent accumulation of electrostatic charges. See installation instructions.



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Additional information:

Annex:

[Annex to IECEx ULD 19.0002X Issue 0.pdf](#)



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TYPE DESIGNATION

Nomenclature:

Series SMLAX:

Type 1 Sensor (Absolute + incremental version):

SMLAX	-	B0	1	-	XX	-	L1	/SXXX
I		II	III		IV		V	VI

I – Series: SMLAX

II – Output circuits:

B0 = SSI, Binary + 1024 PPR Line Driver

G0 = SSI, Gray + 1024 PPR Line Driver

B5 = SSI, Binary + 1024 PPR Push Pull

G5 = SSI, Gray + 1024 PPR Push Pull

III – Supply Voltage:

1 = +5V±5% (not for B5, G5)

2 = +10V÷ +30V

IV – Resolution: Two numeric character to indicate resolution, not safety relevant.

V – Connections – Cable length:

L1 = cable output 1 m

Lx = cable output x meters

VI – Customer version: Three numeric character to indicate specific customer requirements, not safety relevant.



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Type 2 Sensor (Absolute or incremental version):

SMLAX	-	L	1	-	XXX	-	R	-	L1	/SXXX
I		II	III		IV		V		VI	VII

I – Series: SMLAX

II – Output circuits:

- L = Line Driver (RS422)
- Y = Push-Pull AB0 /AB0
- BG = SSI binary coded
- GG = SSI Gray coded

III – Supply Voltage:

- 1 = +5V±5% (not for B5, G5)
- 2 = +10V ÷ +30V

IV – Resolution: Three numeric character to indicate resolution, not safety relevant.

V – Index:

- R = unique reference signal (no output for BG, GG)

VI – Connections – Cable length:

- L1 = cable output 1 m
- Lx = cable output x meters

VII – Customer version: Three numeric character to indicate specific customer requirements, not safety relevant

PARAMETERS RELATING TO THE SAFETY

Power supply: +5Vdc ± 5%, +10Vdc ÷ +30Vdc

Output current (each channel): 20 mA



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MARKING

Marking has to be readable and indelible; it has to include the following indications:

CE	 II 3 G Ex mc IIC T4 Gc, Zone 2	Ex mc IIC T4 Gc, Zone 2	
		DEMKO 19 ATEX 2195 X	IECEX ULD 19.0002 X
Mod. SMLAX-xxx-xx-xx/xxxx		 lika Electronic s.r.l. Via S.Lorenzo, 25 36010 Carré (VI) ITALY	
Serial n° xxxxxxxxx			
V= xxxxx	P= xxxxx		PERMITTED SUPPLY SHORT_CIRCUIT CURRENT: 10A
-10°C ≤ Ta ≤ 85°C			

The equipment must also carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

Each piece of equipment defined above has to have successfully passed before delivery:

- Each SMLAX bearingless encoder shall be subjected to a visual inspection to determine such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion or softening per Cl. 9.1 of IEC 60079-18.