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Machinery Directive 2006/42/EC Annex. IX - EC type-examination certificate for safety components (ref. Annex IV – 19, 21)

Certificate No.: TÜV IT 0948 23 MAC 403 B

Name and address of manufacturer: Leuze Electronic GmbH&Co. KG
In der Braike, 1
D-73277 Owen/Teck - Germany

Address of production site: --

Product: Logic unit to ensure safety functions,
designed to detect the presence of persons

Model/type: LBK S-01 System

Reference standards: EN ISO 13849-1:2015
EN ISO 13849-2:2012
EN 62061:2005 + A1:2013 +A2:2015
EN IEC 62061:2021
IEC/EN 61508:2010
EN 61496-1:2013
EN IEC 62046:2018

Test report: TR 0948 MAC 0159 B Rev.6

We herewith certify that the safety component for the respective scope of application stated in the annex to this EC type-examination certificate meets the requirements of the Directive:

2006/42/CE

First Issue date: 02/10/2023

Issue date: 02/10/2023

Expiry date: 05/08/2025



PRD N° 081B

Membro degli Accordi di Mutuo Riconoscimento
EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual
Recognition Agreements



TÜV Italia S.r.l.
Notified Body, Identification N° 0948

Alberto Carelli
Industrie Service Division Manager



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Annex to EC type examination Certificate no. TÜV IT 0948 23 MAC 403 B

1. Scope

Brand label models LBK S-01 System, composed of:

LBK ISC BUS PS

LBK ISC100E-F

LBK ISC-02

LBK ISC-03

LBK ISC110E-P

LBK ISC110E-F

LBK ISC110E

LBK ISC110

LBK S-01.

The safety component is included in the Annex IV points 19 and 21 of the Machinery Directive 2006/42/EC as it belongs to the categories “Protective device designed to detect the presence of persons” and “Logic units to ensure safety functions”.

2. Application of standards

The standards mentioned on the reference certificate of this annex (see above):

have been completely applied

have been partially applied

3. Main technical characteristics

The controller is an independent unit that can control up to six sensors. The controller communicates with the sensors using a CAN bus. The sensors detect movements inside a forbidden area. The controller can put the OSSD output (in redundant configuration) in safe state (de-energised state) to block the machinery movement. The controller provides power supply for the connected sensors. The product has the following interfaces with external world:

- Input signals (Type 3 according to EN 61131-2)
- OSSD outputs in redundant configuration
- PROFINET/PROFIsafe or FSoE fieldbus output
- USB / Ethernet communication for system configuration



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Parameter	Value	Measuring unit
Type (EN 62061, EN 61508)	B	--
Category (EN ISO 13849-1/2)	Sensor: in 1oo1: 2; in 1oo2: 3 Controller: risk reduction equivalent to category 3	--
Architecture (EN 62061, EN 61508)	Single Sensor: 1oo1(D) Controller: 1oo1(D) (1oo2(D) for OSSD output)	--
MTTF _D (EN ISO 13849-1/2)	42	Years
DC _{AVG} (EN ISO 13849-1/2)	>98	%
SFF (EN 62061, EN 61508)	>98	%
CCF (EN ISO 13849-1/2)	75	--
β , β_D (EN 62061, EN 61508)	5, 1	%
PFH _D		
- Overall safety functions:	without PROFINET/PROFIsafe or FSoE: Controller + Sensor (in 1oo1 configuration): 4,53E-08 Controller + Sensor (in 1oo2 configuration): 8,03E-09	1/h
	with PROFINET/PROFIsafe or FSoE (C201A (ISC-B01) or C201B only): Controller + Sensor (in 1oo1 configuration): 4,63E-08 Controller + Sensor (in 1oo2 configuration): 9,03E-09	
- Additional safety functions:	without PROFINET/PROFIsafe or FSoE: Muting / Dynamic config. switch: 5,37E-09 Stop signal / Restart signal / I/O Fieldbus: 5,45E-09	1/h
	with PROFINET/PROFIsafe or FSoE (C201A (ISC-B01) or C201B only): Muting / Dynamic config. switch: 6,37E-09 Stop signal / Restart signal / I/O Fieldbus: 6,45E-09	
PL (EN ISO 13849-1/2)	d	--
SIL (EN 62061, EN 61508)	2	--
ESPE Type (EN 61496-1)	3	--



4. Conditions for certificate validity

The product shall be used according to the Information for Use, in particular for what concerns sensor position, installation and use (including parameterisation and validation).

5. Notes

A copy of the test report no. TR 0948 MAC 0159 B Rev.6 is given to the manufacturer.

The validity of the test report is linked to the validity of the EC type examination certificate no. TÜV IT 0948 20 MAC 0190 B Rev.6.

According to what foreseen by Machinery Directive 2006/42/EC, the applicant shall inform the notified body about the modifications, even if of little importance, that he made or that he wants to make to the safety component object of the certificate.

This annex is integral part of the EC type examination certificate no. TÜV IT 0948 23 MAC 403 B.

Milano, 02/10/2023

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Information regarding the TÜV Italia Certificate

This certificate is only valid for the referenced company and its facilities stated on the certificate. Only the Certification Body is allowed to transfer (assign) it to a third party.

The right to use the marking depicted on the certificate covers solely products, which match with the type approval and the specifications within the test report or within its complementary (additional) agreements.

Each product has to contain (be accompanied) the necessary operating and assembly instructions. Each product must bear the clearly visible identification of the manufacturer or importer as well as a type plate, in order to identify the compliance of the type approval with the product placed on the market.

The holder of the TÜV Italia certificate is obliged to continuously observe if the manufacture of the marked products complies with the test requirements; he is obliged to perform the control tests defined within the test requirements or by the Certification Body in an orderly manner.

Aside from the conditions referenced above, the conditions within the General Contract are effective for the TÜV Italia certificate.

It is valid as long as the state-of-the-art requirements on which the test (approval) was based, are effective, if it was not withdrawn prior on conditions within the General Contract.

If this certificate expires or is withdrawn it has to be returned to the Certification Body immediately.