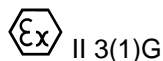


UK Type Examination Certificate CML 21UKEX2660X Issue 0
United Kingdom Conformity Assessment

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **I/O-device type LB3104*2, LB3105*2**
- 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.

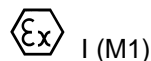
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 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 EN 60079-15:2010
- 10 The equipment shall be marked with the following:



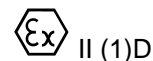
Ex nA [ia Ga] IIC T4 Gc

Alternative: Ex nAc [ia] IIC T4



[Ex ia Ma] I

[Ex ia] I



[Ex ia Da] IIIC

[Ex ia] IIIC



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11 Description

The I/O-device type LB3xO4*2 / LB3xO5*2 is designed as associated apparatus and designated for installation in the safe area or alternatively in areas requiring EPL Gc equipment.

Electronic components of the I/O-device are arranged on printed-circuit-boards (PCB) packaged in a plastic enclosure suitable for Installation on special backplanes.

The I/O-device provides safe galvanic Separation between intrinsically safe circuits and non-intrinsically safe signal circuits / non-intrinsically safe power supply on the PCB according to 'Ex ia' level of requirements.

The up to four active output / passive input circuits, level of IS protection Ex ia IIC Ex ia IIIC/ Ex ial can be used to supply 2-wire or 3-wire transmitter circuits and/or analogue inputs for measurement purposes.

The up to four active output / passive input circuits are not galvanically separated of each other (common ground).

LB3xO4*2, LB3xO5*2 provide the same hardware setup but different firmware.

The I/O-devices type LB3xO4*2 / LB3xO5*2 are designated for Installation on special backplanes, fitted with power supply (power supply unit type LB9006* / type LB9104*).

The backplanes and power supplies are subject to other ATEX certificates.

Listing of all components used referring to older Standards: not applicable.

Parameters:

Non-intrinsically safe circuits (backplane connectors on the rear side of I/O-Devices)

- Non-intrinsically safe circuits (backplane connectors on the rear side of I/O-Devices)
- Powersupply (I/O-Device, supplied by power supply unit type LB9006*/type LB9104.)

Rated voltage $U = DC 12 V +4 \%/ -2\%$ (details: see manual)

$U_m = DC 60V SELV / PELV$

- Input / output signal circuits (communication)

Rated voltage $U = +2.5V +/- 2.5V$ (Manchester Signal)

$U_m = AC/DC 30 V SELV / PELV$

- Intrinsically safe circuits, type of protection Ex ia IIC/IIB/IIA, Ex ia IIIC, Ex ia I- The maximum values for the permissible external impedances (C_g, L_a) include

The maximum values for the permissible external impedances (C_o, L_o) include the internal impedances already.

- Intrinsically safe C_o, L_o parameters listed in the following tables shall not be combined if present as discrete components.

- The maximum external L over R ratio (L_o/R_o) has been calculated on the basis of the simplified equation to EN 60079-11, chapter 6.2.3.



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Intrinsically safe circuits type of protection Ex ia IIC/IIB/IIA, Ex ia IIIC Ex ia I

L83104*2 L83105*2	Transmitter Supply 2-wire transmitter (LB3105*2 with HART) or 3-wire supply: Ch.1: 1(+)-2/3 (-) Ch.2: 5(+)-6/7 (-) Ch. 3:9(+)- 10/11 (-) Ch. 4: 13 (+) - 14/15 (-)	Analog input Rs= 32.67 kΩ 4-or 3-wire input: Ch. 1: 2/3(+)-4 (-) Ch. 2: 6/7(+)-8 (-) Ch. 3: 10/11 (+)- 12 (-) Ch. 4: 14/15 (+)-16 (-)	3-wire Transmitter (combination of transmitter supply and analog input) Ch. 1:1 (+)-2/3 (In) - 4 (-) Ch. 2: 5 (+) - 6/7 (In) -8 (-) Ch. 3:9(+)- 10/11 (In) - 12 (-) Ch. 4: 13 (+)- 14/15 (In) -16 (-)
Characteristic	Linear	Trapezoidal	Linear
Maximum Values	Uo= 27V Io= 90mA Po= 588mW Ci= negligible Li = negligible	Uo= 0.7V Io= 2.78mA Po= 2mW Ci= 242 nF Li = negligible	Uo= 27 V Io= 93 mA(<0.7 V) {3}} Po= 630 mW Ci= 242 nF {3}} Li = negligible
Maximum Values	Ui/Ii/Pi N/A	U _i = 30 Vdc {1}} I _i = 100 mA P _i = 100 mw {1}}	Ui/Ii/Pi N/A
Ex ia IIC	Co= 0.090 μF Lo= 4.47mH Lo/Ro= 57.74 μH/Ω	Co= 50.7 μF Lo=100 mH	Co= 0.090 μF Lo= 4.1mH Lo/Ro= 56.6 μH/Ω
Ex ia IIB/IIIC	Co= 0.705 μF Lo= 17.89 mH Lo/Ro= 230.9 μH/Ω	Co= 239.7 μF Lo= 100 mH	Co= 0.705μF Lo= 16.4mH Lo/Ro= 226.5 μH/Ω
Ex ia IIA	Co= 2.33 μF Lo= 35.78mH Lo/Ro= 481.9 μH/Ω	Co= 349.7 μF Lo= 100 mH	Co= 2.33 μF Lo= 32.8 mH Lo/Ro= 453.1 μH/Ω
Ex ia I	Co= 4.12 μF Lo= 59.70 mH Lo/Ro= 793 μH/Ω	Co= 459.7 μF Lo= 100 mH	Co= 4.12 μF Lo= 53.9 mH Lo/Ro= 743.3 μH/Ω
<p>{1}} 100 mW at 0.7 V (Voltage is internal limited to 0.7 V, clearance and creepage distances designed for 30 V); Power dissipation based on current. {2}} listed values apply only if no external source exceeding U_o = 0.7 V is present {3}} listed values apply due internal limiting of analog input to 0.7 V, therefore, Ci is negligible</p>			



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12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	12 Aug 2021	R14112W/00	Issue of the prime certificate. BVS 12ATEXE024X, Issue 1 is attached and shall be referred to in conjunction with this certificate.

Note: Drawings that describe the equipment are listed or referred to in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. The manufacturer shall carry out the routine verifications and tests by EN 60079-0:2018 necessary to ensure that the subject produced complies with the specification submitted to the testing station together with the prototype or sample. He shall also make any routine verifications and tests required by the respective European Standards.
- ii. (I/O-Device type LB3104*2, LB3 105*2)
These routine verifications and tests do not Substitute for the procedure defined in annexes IV to VII inclusive of Directive 2014/34/EU as required, in addition to the module EU-Type Examination, for the conformity assessment procedure (article 13 of Directive 2014/34/EU).
- iii. (I/O-Device type LB3004*2, LB3005*2)
These routine verifications and tests do not substitute the procedure defined in Annex VIII of Directive 2014/34/EU as required for the conformity assessment procedure (article 13 of Directive 2014/34/EU).

14. Specific Conditions of Use

The following relate to the installation and/or safe use of the equipment:

- i. General:
 - The devices shall only be used together with the respective backplanes. The backplanes are subject to other certificates.
- ii. Installation in the safe area:
The devices must be installed:
 - in an enclosure complying with IEC/EN 60079-0 providing degree of IP protection IP54 according to IEC/EN 60529, or
 - in a controlled environment providing pollution degree 2 according to IEC/EN 60664-1.
 -
 - Installation in areas requiring EPL Gc equipment (Zone 2):
 - The devices shall be installed in an enclosure corresponding at least to EPL Gc according to IEC/EN 60079-15 / IEC/EN 60079-0 and providing degree of IP protection IP54 according to IEC/EN 60529.

Certificate Annex

Certificate Number CML 21UKEX2660X
Equipment I/O-device type LB3104*2, LB3105*2
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 BVS 12ATEXE024X Issue 1. In addition to the drawings listed on BVS 12ATEXE024X Issue 1, 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	12 Aug 2021	Additional Marking Requirements for UKCA