

UK Type Examination Certificate CML 21UKEX2939 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 **Galvanically Isolated Barrier Type: HiC2025, HiC2025A and HiC2031**
- 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 60079-0:2018 EN 60079-11:2012
- 10 The equipment shall be marked with the following:

 I (M1)
[Ex ia Ma] I

 II (1) G
[Ex ia Ga] IIC

 II (1) D
[Ex ia Da] IIIC



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11 Description

The SMART Transmitter Power Supply HiC2025, HiC2025A and SMART Current Driver HiC2031 are galvanically isolated, associated apparatus.

The HiC2025 and HiC2025A devices are suitable for supply/interface signal transmitter placed in hazardous area and transfer the analog signal to a safe area. The hazardous area connections (Input circuit) are for "Sink Input" (2-wire transmitters) or 4-wire transmitters.

The HiC2031 device is suitable to repeat a current signal coming from a safe area to drive smart I/P converter, valve actuator and displays placed in hazardous area.

For all equipment, a SMART digital communication can be superimposed on the measurement signal of the transmitter, as input or output and can be transferred in both directions.

The products have a plastic enclosure, the boards are equipped with two DIN 41612 B/3 connectors, suitable for direct insertion in the ATEX certified Termination Boards HiC series, produced by Pepperl+Fuchs.

For particular variants, the equipment's name can be extended with additional characters at the end of the name (es. HiC2025(A)** or HiC2031 **). These variants do not change the function or the type of protection of the products in anyway.

Electrical characteristics

Non-intrinsically safe circuits

Um: 250 Vac

Power supply [connector SL1 pins: 2a,2b (+) and 1 a,/ b (-)]: Un: 24 Vdc (19 +30 Vdc)

Analog Input/Output [connector SL1 pins: 8a (+) and 7a (-)]: Un: up to 30 Vdc

Tamb.: from -40 °C up to +70 °C

Intrinsically safe circuits – equipment HiC2025**

Connector SL2 pins	Uo	Io	Po	Gas Group	Co (μF)	Lo (mH)	Lo/Ro (μH/Ω)
5a(+); 5b(-)	25.2V	100 mA	630 mW	IIC	0.100	3.5	55
				IIB	0.81	14	222
				IIA	2.8	28	444
				I	4.14	46	743

Ci = 5.7nF;

Li = negligible;

Output characteristic: linear.

Intrinsically safe circuits – equipment HiC2025**

Connector SL2 pins	Uo	Io	Po	Gas Group	Co (μF)	Lo (mH)	Lo/Ro (μH/Ω)
	Ui	Ii					
5a(+); 1b(-) 7a(-)	7.2V	100 mA	25 mW	IIC	13.49	3.5	27
				IIB	239	14	108
	30 V	128 mA		IIA	1000	28	216
				I	1000	46	356

Ci = 5.7nF;

Li = negligible;

Output characteristic: diodes blocking barrier.



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Intrinsically safe circuits – equipment HiC2025A**

Connector SL2 pins	Uo	Io	Po	Gas Group	Co (μF)	Lo (mH)	Lo/Ro (μH/Ω)
5a(+); 5b(-)	25.2V	93 mA	586 mW	IIC	0.100	4.1	61
				IIB	0.81	16.4	244
				IIA	2.8	32.8	488
				I	4.14	53.9	800

Ci = 5.7nF; Li = negligible; Output characteristic: linear.

Connector SL2 pins	Uo	Io	Po	Gas Group	Co (μF)	Lo (mH)	Lo/Ro (mH/Ω)
	Ui	Ii					
5a(+); 1b(-) 7a(-)	1	100 mA	25 mW	IIC	100	3.5	1.4
				IIB	1000	14	5.6
	30 V	128 mA		IIA	1000	28	11.2
				I	1000	46	18

Ci = 5.7nF; Li = negligible; Output characteristic: diodes blocking barrier.

Intrinsically safe circuits – equipment HiC2031**

Connector SL2 pins	Uo	Io	Po	Gas Group	Co (μF)	Lo (mH)	Lo/Ro (μH/Ω)
5a(+); 5b(-)	25.2V	100 mA	630 mW	IIC	0.100	3.5	55
				IIB	0.81	14	222
				IIA	2.8	28	444
				I	4.14	46	743

Ci = 5.7nF; Li = negligible; Output characteristic: linear.

Note - External circuits with both inductance and capacitance

The above maximum Lo and Co parameters apply where:

- the total Ci of the external circuit (*excluding the cable*) is < 1% of the Co value or
- the total Li of the external circuit (*excluding the cable*) is < 1% of the Lo value.

The above Lo and Co parameters shall reduce to 50% when both of the two conditions below are given:

- the total Li of the external circuit (*excluding the cable*) > 1% of the Lo value and
- the total Ci of the external circuit (*excluding the cable*) > 1% of the Co value.

The reduced capacitance of the external circuit (*including cable*) shall not be greater than 1 uF for Groups I, IIA, IIB and 600 nF for Group IIC.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0		R14112AX/00	Prime Certificate issued.

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



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13 Conditions of Manufacture

None.

14 Specific Conditions of Use

None.

Certificate Annex

Certificate Number CML 21UKEX2939
Equipment Galvanically Isolated Barrier Type: HiC2025, HiC2025A and HiC2031
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 CESI 06 ATEX 017. In addition to the drawings listed on CESI 06 ATEX 017 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	17 Nov 2021	Additional Marking Requirements for UKCA