



# Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE MINE HEALTH AND SAFETY ACT, ACT NO 29 OF 1996 (AND REGULATIONS), THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND REGULATION 17 OF THE ELECTRICAL MACHINERY REGULATIONS

<b>IA CERTIFICATE</b>	MASC MS/23-8351X	<b>Issue</b>	0
<b>Issue Date</b>	20 July 2023	<b>Expiry Date</b>	23 July 2024
<b>** Based on Certificate No</b>	IECEX CSAE 21.0010X	<b>Issue / Variations / Amendment</b>	0
<b>Requested by</b>	Pepperl+Fuchs (Pty) Ltd Zerwick Forum, 8 Glen Eagle Office Park Cnr Monument Rd and Braambos St, Glen Erasmia, Kempton Park 1619, South Africa		
<b>Manufacturer</b>	Pepperl+Fuchs SE Lilienthalstrasse 200, 68307 Mannheim Germany		
<b>Description</b>	The HiD2030 and HiD2030SK Smart Transmitter Power Supplies comprise a printed circuit board and connectors housed inside a plastic IP20 enclosure. They are designed as associated apparatus to provide two channels of a galvanically isolated intrinsically safe electrical supply to Group II zone 0, or Group I located equipment. They are installed in a non-hazardous area. The hazardous area circuits are galvanically isolated from the non-hazardous area circuits using transformers. The 1.2V Uo connections may optionally be used with intrinsically safe source inputs. There are two plugs in connectors in the base of the assembly, SL1 for the non-hazardous area connections and SL2 for the two IS output channels. The devices are powered from a dc source in the range of 19-30V, but is nominally 24V. Um=250V. Refer to the Annexe of Base Certificate** for the output parameters etc.		
<b>Equipment</b>	Smart Transmitter Power Supplies	<b>Type</b>	HiD2030 and HiD2030SK
<b>MARKING:</b> Original marking as per certificate ** remains applicable. <b>IA number must be added.</b>	<b>Type:</b> <b>Ex Marking:</b>  <b>IA Number:</b> <b>Warnings:</b>	HiD2030 and HiD2030SK Smart Transmitter Power Supplies [Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia Ma] I Ta = -40°C to +60°C MASC MS/23-8351X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)	
<b>Quality Assurance report (QAR) / Notification (QAN):</b>	DE/PTB/QAR06.0008/19		
<b>Quality Assurance report (QAR) / Notification (QAN)</b>	23 July 2024		
<b>Expiry date:</b>			
<b>Compliance:</b>	The equipment as described above has been allocated the rating <u>Explosion Protected 'as above'</u> utilizing the SANS/IEC Standards: <ul style="list-style-type: none"> <li>SANS (IEC) 60079-0: 2019 Equipment - General requirements</li> <li>SANS (IEC) 60079-11: 2012 Equipment protection by intrinsic safety "i"</li> </ul> <i>Note: This certificate covers only the listed standards and does not imply compliance to any other standard, related or inferred. It is up to the manufacturer to ensure that the product complies to all relevant standards for the application.</i>		
<b>Special conditions of safe use "X":</b>	<ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>		
<b>Conditions of manufacture:</b>	<ul style="list-style-type: none"> <li>Refer to Annex A below for more details.</li> </ul>		
<b>C. WELTHAGEN</b> TECHNICAL SPECIALIST		<b>N. VILOJEN</b> TECHNICAL OFFICER	
<small>This certificate covers all units sold as long as the QAR/QAN remains valid. According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).</small>			

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:  
SANS 10086 requirements;  
Any conditions mentioned in the above certificate;  
Any relevant requirements of the MHS Act;  
Any restrictions and conditions enforced by the chief inspector of mines, principal inspector (Group I equipment) or chief inspector of factories (Group II equipment).

This certificate may only be reproduced in full  
The certificate is not transferable and remains the property of the issuing body.

**IA CERTIFICATE: MASC MS/23-8351X**  
**Equipment: Smart Transmitter Power Supplies**  
**(Expiry date: 23 July 2024)**

ANNEX A

This document is based on and must be read in conjunction with certificate IECEX CSAE 21.0010X.	
<b>Description (According to Base Certificate) **</b>	
"Refer to description in Base Certificate ** (and any applicable schedules/issues/variations)."	
<b>Standard compliance</b>	See Base Certificate **
<b>Special conditions of safe use ("X")</b>	<ul style="list-style-type: none"> <li>The device must be installed and operated only in an environment of overvoltage category II (or better) according to IEC 60664-1.</li> <li>The device must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC 60664-1</li> </ul>
<b>Conditions of manufacture</b>	<ul style="list-style-type: none"> <li>The isolating transformers used in the equipment shall be subjected to an electric strength test using a test voltage of 1500 Vac applied between the input and output windings for 60 s. Alternatively, a voltage of 20% higher may be applied for 1 s. There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.</li> </ul>
<b>Conditions of Certification</b>	<ul style="list-style-type: none"> <li>This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate.</li> <li>As per ARP 0108 a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date).</li> <li>The apparatus must be additionally marked with the MASC marking details above.</li> <li>This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date.</li> <li>The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate.</li> <li>The certification on which this IA Certificate is based must remain valid.</li> <li>The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged.</li> <li>The Ex-quality assurance notification/report for the equipment must remain valid.</li> </ul>
<b>Conclusion:</b>	<ul style="list-style-type: none"> <li>From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **.</li> <li>The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).</li> </ul>

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions, or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices.

This document may only be reproduced in full.  
This certificate is not transferable and remains the property of the issuing body.  
This document will not be supported by MASC for certification purposes outside the borders of South Africa.

Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07  
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# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX CSAE 21.0010X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2021-09-27

Applicant: **Pepperl+Fuchs SE**  
Lilienthalstrasse 200  
68307 Mannheim  
Germany

Equipment: **HiD2030 and HiD2030SK Smart Transmitter Power Supplies**

Optional accessory:

Type of Protection: **Intrinsically Safe**

Marking: [Ex ia Ga] IIC  
[Ex ia Da] IIIC  
[Ex ia Ma] I  
Ta = -40°C to +60°C

Approved for issue on behalf of the IECEx  
Certification Body:

**Neil Jones**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

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 [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**CSA Group Testing UK Ltd**  
Unit 6, Hawarden Industrial Park  
Hawarden, Deeside CH5 3US  
United Kingdom





# IECEX Certificate of Conformity

Certificate No.: **IECEX CSAE 21.0010X**

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Date of issue: 2021-09-27

Issue No: 0

Manufacturer: **Pepperl+Fuchs SE**  
Lilienthalstrasse 200  
68307 Mannheim  
**Germany**

Manufacturing locations: **Pepperl+Fuchs Asia Pte. Ltd.**  
18 Ayer Rajah Crescent  
Singapore 139942  
**Singapore**

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 equipment 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 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

This Certificate **does not** indicate compliance with 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:

[GB/CSAE/ExTR21.0080/00](#)

Quality Assessment Report:

[DE/PTB/QAR06.0008/16](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX CSAE 21.0010X**

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Date of issue: 2021-09-27

Issue No: 0

## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The HiD2030 and HiD2030SK Smart Transmitter Power Supplies comprise a printed circuit board and connectors housed inside a plastic IP20 enclosure. They are designed as associated apparatus to provide two channels of a galvanically isolated intrinsically safe electrical supply to Group II zone 0, or Group I located equipment. They are installed in a non-hazardous area. The hazardous area circuits are galvanically isolated from the non-hazardous area circuits using transformers. The 1.2V U<sub>o</sub> connections may optionally be used with intrinsically safe source inputs.

There are two plug in connectors in the base of the assembly, SL1 for the non-hazardous area connections and SL2 for the two IS output channels.

The devices are powered from a dc source in the range of 19-30V, but is nominally 24V. U<sub>m</sub>=250V.

Refer to the Annexe for the output parameters etc.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. The device must be installed and operated only in an environment of overvoltage category II (or better) according to IEC 60664-1.
2. The device must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC 60664-1.

## **Annex:**

[IECEX CSAE 21.0010X Annexe Issue 0.pdf](#)

Annexe to: I ECEX CSAE 21.0010X Issue 0

Applicant: Pepperl+ Fuchs SE

Apparatus: The HiD2030 and HiD2030SK Smart Transmitter Power Supplies.



The intrinsically safe output parameters are as follows: -

SL2 Connector pins channels 1 and 2	Uo (V)	Io (mA)	Po (mW)	Ci (nF)	Li	Ui	Ii
Channel 1							
5a, 5b	26	93	605	1.05	0		
5b, 7a	1.2	50	15	5.64	0	28V	93mA
Channel 2							
1a, 1b	26	93	605	1.05	0		
1b, 3b	1.2	50	15	5.64	0	28V	93mA

### Cable/ load parameters

Connector SL2 pins 5a(+), 5b(-) and 1a(+), 1b(-)

Group	I	IIA	IIB/IIC	IIC
Co	4.79 $\mu$ F	2.6 $\mu$ F	770nF	99nF
Lo	53.8mH	32.8mH	16.4mH	4.1mH
Lo/Ro	771 $\mu$ H/Ohm	470 $\mu$ H/Ohm	235 $\mu$ H/Ohm	58 $\mu$ H/Ohm

Connector SL2 pins 5b(+),7a(-) and 1b(+), 3b(-)

Group	I	IIA	IIB/IIC	IIC
Co	1000 $\mu$ F	1000 $\mu$ F	1000 $\mu$ F	1000 $\mu$ F
Lo	180mH	110mH	52mH	14mH
Lo/Ro	27.5mH/Ohm	16.8mH/Ohm	8.4 mH/Ohm	2.1mH/Ohm

### Note

The above parameters apply when one of the two conditions below is given:

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

The above parameters are reduced to 50% when both of the two conditions below are given:

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

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

### Conditions of Manufacture

1. The isolating transformers used in the equipment shall be subjected to an electric strength test using a test voltage of 1500 Vac applied between the input and output windings for 60 s. Alternatively, a voltage of 20% higher may be applied for 1 s. There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.