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

Certificate No.: **IECEx IBE 15.0018**

Certificate history:
Issue 2 (2019-11-22)
Issue 1 (2017-10-09)
Issue 0 (2015-08-25)

Status: **Current**

Issue No: 3

Date of Issue: 2020-06-02

Applicant: **Sigmann DELTA GmbH**
Hauptstraße 53
74928 Hüffenhardt
Germany

Equipment: **Supply module SDVM 125ex Type SD.211.XXX1.XX**

Optional accessory:

Type of Protection: **increased safety 'e', protection by enclosure 't', intrinsic safety 'i', powder filling 'q'**

Marking: Ex eb q [ib IIC/IIB] IIC T4 Gb

Ex tb [ib] IIIC T135 °C Db

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

Position: **Deputy Head of department Certification Body**

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 www.iecex.com or use of this QR Code.

Certificate issued by:

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg
Germany

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Manufacturer: **Sigmann DELTA GmbH**
Hauptstraße 53
74928 Hüffenhardt
Germany

Additional manufacturing locations:

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

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-5:2015 Explosive atmospheres –Part 5: Equipment protection by powder filling “q”
Edition:4.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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 Reports:

DE/IBE/ExTR15.0008/00 DE/IBE/ExTR15.0008/01 DE/IBE/ExTR15.0008/02
DE/IBE/ExTR15.0008/03

Quality Assessment Report:

DE/IBE/QAR15.0005/01

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The supply module SDVM125^{ex} consists of an enclosure made of aluminium including separate termination compartments for the connection of non-intrinsically safe circuits (type of protection “e”) and intrinsically safe circuits and the PCB with the electronic components which is located in powder filling.

The supply modules are used for intrinsically safe supply of an external hardware and implementation of non-intrinsically safe data signals on intrinsically safe data signals.

For technical data see Annex

SPECIFIC CONDITIONS OF USE: NO

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- The sealing of supply module has been changed.
- A separately certified venting element is used.
- The internal boards have been changed, thus alternate fuses and resistors may be used. A EMC filter has been added. The intrinsically safe parameter remain unchanged.

Annex:

Annex_IBE15.0018_03.pdf

IECEx Certificate of Conformity - Annex

Certificate No: IECEx IBE 15.0018 Issue No: 3

Date of Issue: 2020-06-02

Technical data

Ambient temperature range: -25 °C up to +60 °C

Degree of protection: IP64 (EN 60529)

Supply circuits:

Type SD.211.1XX1.XX DC +12 V +10 %
Type SD.211.2XX1.XX DC +24 V ± 25 %
Type SD.211.3XX1.XX AC 90 – 253 V, 50 – 60 Hz

Data circuits:

Type SD.211.X0X1.XX (RS232) DC ±12 V, 4 mA
Type SD.211.X0X1.XX (RS422) DC +12 V / -7 V, 4 mA
Type SD.211.X1X1.XX (USB) DC +5 V, 68 mA
Type SD.211.X2X1.XX (USB2) DC +5 V, 68 mA

Non-intrinsically safe circuits

Maximum voltage U_m AC 253 V

Intrinsically safe circuits in type of protection Ex ib:

Version RS232/RS422 (terminal X9, X10, X11; X12, X13)

Type	SD.211.X001.XX		SD.211.X011.XX		SD.211.X021.XX		SD.211.X031.XX	
U_o	5.5 V		4.9 V		4.9 V		5.3 V	
I_o	440 mA		440 mA		710 mA		1125 mA	
P_o	(trapezoidal) 1.20 W		(trapezoidal) 1.17 W		(trapezoidal) 1.95 W		(trapezoidal) 3.16 W	
R_i	25 Ω		25 Ω		16 Ω		10 Ω	
C_i	2.2 µF		2.2 µF		2.2 µF		2.2 µF	
	IIB	IIC	IIB	IIC	IIB	IIC	IIB	IIC
C_o [1]	1000 µF	55 µF	1000 µF	113 µF	1000 µF	113 µF	1000 µF	68 µF
L_o [2]	1.3 mH	0.1 mH	1.3 mH	0.1 mH	0.55 mH	0.1 mH	0.2 mH	0.06 mH

[1] if L_o negligible
[2] if C_o negligible

Version USB Type SD.211.X111.XX or USB2 Type SD.211.X211.XX

terminal	X11…X13, supply		X9…X11, data	
U_o	4.9 V		4.9 V	
I_o	440 mA		40 mA	
P_o	(trapezoidal) 1.17 W		(linear) 48 mW	
R_i	25 Ω		246 Ω	
C_i	2.2 µF		1.2 µF	
	IIB	IIC	IIB	IIC
C_o [1]	1000 µF	113 µF	1000 µF	113 µF
L_o [2]	0.53 mH	0.1 mH	0.53 mH	0.1 mH

[1] if L_o negligible
[2] if C_o negligible

Version USB Type (High Power) SD.211.X121.XX or USB2 Type SD.211.X221.XX

terminal	X11…X13, supply		X9…X11, data	
U_o	4.9 V		4.9 V	
I_o	710 mA		40 mA	
P_o	(trapezoidal) 1.95 W		(linear) 48 mW	
R_i	16 Ω		246 Ω	
C_i	2.2 µF		1.2 µF	
	IIB	IIC	IIB	IIC
C_o [1]	1000 µF	113 µF	1000 µF	113 µF
L_o [2]	0.53 mH	0.1 mH	0.53 mH	0.1 mH

[1] if L_o negligible

[2] if C_o negligible

Version USB2 Type SD.211.X231.XX

terminal	X11…X13, supply		X9…X11, data	
U_o	5.3 V		4.9 V	
I_o	1125 mA		40 mA	
P_o	(trapezoidal) 3.16 W		(linear) 48 mW	
R_i	10 Ω		246 Ω	
C_i	2.2 µF		1.2 µF	
	IIB	IIC	IIB	IIC
C_o [1]	1000 µF	67 µF	1000 µF	67 µF
L_o [2]	0.2 mH	0.06 mH	0.2 mH	0.06 mH

[1] if L_o negligible

[2] if C_o negligble

The intrinsically safe circuits are galvanically connected to the supply circuit. During installation, continuous equipotential bonding must be ensured within the hazardous area.