



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx UL 13.0030X issue No.:0 Certificate history:.....

Status: **Current**

Date of Issue: **2013-08-19** Page 1 of 3

Applicant: **Migatron Corp**
935 Dieckman Street,
Woodstock, IL 60098
United States of America

Electrical Apparatus: **Zener Diode Safety Barrier**
Optional accessory:

Type of Protection: **Intrinsic Safety "ia"**

Marking: [Ex ia Ma/Ga] I/IIC
[Ex ia Da] IIIC

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

Paul T. Kelly

Position:

Principal Engineer, Global Hazardous Locations

*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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

UL LLC
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America





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Manufacturer: **Migatron Corp.**
935 Dieckman Street
Woodstock, IL 60098
United States of America

Additional Manufacturing location
(s):

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 electrical apparatus 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical 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:
[US/UL/ExTR13.0029/00](#)

Quality Assessment Report:
[US/UL/QAR11.0011/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Model ZSB-409A is a 3-channel dc positive polarity zener diode safety barrier providing intrinsically safe circuits.

See Annex for additional details.

CONDITIONS OF CERTIFICATION: YES as shown below:

- For installations in which both the C_i and L_i of the intrinsically safe apparatus exceeds 1% of the C_o and L_o parameters of the associated apparatus/equipment (excluding cable), then no more than 50% of C_o and L_o parameters are applicable. Additionally, the reduced capacitance of the external circuit (including cable) shall not be greater than 1 μF for Groups I, IIA, IIB, IIIA, IIIB and IIIC, and 600 nF for IIC.
- Model ZSB-409A must be installed inside an end-use enclosure with suitable ratings for the environment, with at least an ingress protection rating of IP20.

Annex to IECEx UL 13.0030X

Nomenclature for type ZSB-409A:

Model ZSB-409A

Temperature range

The ambient temperature range is -40°C to +60°C.

Electrical data

Input:

U_m : 250 V rms or dc

Channel #	Terminals	Supply Voltage maximum (V dc)	Supply Current maximum (mA)
1	7 & GND	25.5	89
2	5 & GND	10.4	5
3	6 & GND	10.4	5

GND = Safe Area ground terminals are 8, 13, 14, 15, & 16

Intrinsically Safe Entity Parameters:

ZSB-409A Entity Parameters																
Model Number	Terminals	Voc or Uo (V dc)	Isc or Io (mA)	Po (W)	Ca or Co (µF)				La or Lo (mH)				La/Ra or Lo/Ro (µH/ohm)			
					I*	A, B, or IIC	C, E, or IIB	D, F, G, or IIA	I*	A, B, or IIC	C, E, or IIB	D, F, G, or IIA	I*	A, B, or IIC	C, E, or IIB	D, F, G, or IIA
ZSB-409A	3 & GND	28.4	100	0.710	3.64	0.079	0.632	2.07	5	1	5	5	657	50	200	401
	1 & GND	11.6	6	0.017	46.0	1.59	10.8	43.0	1000	987	1000	1000	26800	2040	8170	16300
	2 & GND	11.6	6	0.017	46.0	1.59	10.8	43.0	1000	987	1000	1000	26800	2040	8170	16300

GND = Hazardous Location ground terminals are 4, 9, 10, 11, & 12.

* Values are for Group I, ATEX and IECEx installations only.

Routine tests

A routine test shall be carried out on each completed barrier to check correct operation of each barrier component and the resistance of any fuse.