



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 UL 09.0022X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 5	Issue 4 (2020-03-05)
Date of Issue:	2022-09-27		Issue 3 (2017-03-29)
Applicant:	Otto Engineering Inc. 2 East Main Street Carpentersville, IL 60110 United States of America		Issue 2 (2016-06-17)
Equipment:	Radio Accessories		Issue 1 (2010-09-30)
Optional accessory:			Issue 0 (2010-01-11)
Type of Protection:	Intrinsic safety "ia"		
Marking:	Ex ia IIC T4 Gb or Ex ia IIB T4 Gb -40°C ≤ Ta ≤ +40°C		

Approved for issue on behalf of the IECEx
Certification Body:

Katy A. Holdredge

Position:

Senior Staff Engineer

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 or use of this QR Code.



Certificate issued by:

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





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Manufacturer: **Otto Engineering Inc.**
2 East Main Street
Carpentersville, IL 60110
United States of America

Manufacturing locations: **Otto Engineering Inc.**
2 East Main Street
Carpentersville, IL 60110
United States of America

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 Reports:

[US/UL/ExTR09.0021/00](#)
[US/UL/ExTR09.0021/03](#)

[US/UL/ExTR09.0021/01](#)
[US/UL/ExTR09.0021/04](#)

[US/UL/ExTR09.0021/02](#)
[US/UL/ExTR09.0021/05](#)

Quality Assessment Report:

[US/UL/QAR06.0010/10](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The apparatus is a series of accessories to be connected to intrinsically safe radios by entity parameters.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- These radio accessories are only intended for connection to intrinsically safe radios that have been evaluated to have intrinsically safe (entity) parameters at the accessory connection.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Addition of Model V2-S2CM11121-S

Issue 2: Updated 60079-0 and 60079-11 to current version. Addition of Storm Speaker Microphone Model V2-S2MF11111-S and Earphone Kit Model V1-11155-S. Reduction of Li value of Model V1-T12MF117-S from 0.5mH to 0.14 mH.

Issue 3: Addition of Headset Models V4-10961-S, V4-11016-S and alternate speaker part number for use in headsets.

Issue 4: An alternate plastic material, RTP type 2500 A Permastat Plus was evaluated and determined suitable for the enclosures for the V2 series Speaker Mics.

Issue 5: Minor editorial updates to manual and schedule drawings and updating standards to the latest edition of IEC 60079-0.

Annex:

[Annex to IECEx UL 09.0022X Issue 5.pdf](#)



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TYPE DESIGNATION

Speaker Microphones:

Models: V2-10030-S, V2-10031-S, V2-10068-S, V2-10134-S, V2-10162-S, V2-10168-S, V2-10240-S, V2-10241-S, V2-10273-S, V2-10278-S, V2-10318-S, V2-10375-S, V2-S2ER12111-S, V2-S2KC12111-S, V2-S2MF11111-S, V2-S2MJ11111-S, V2-S2VJ11111-S, and V2-S2CM11121-S.

A speaker microphone consisting of a speaker, microphone, a press to talk switch, with or without a high/low volume control, with or without antenna connection, with or without an emergency switch, a straight or coil cord, various connections facilities to an intrinsically safe radio. Connection to intrinsically safe radio via entity parameters. Optional output connection provided with entity parameters. Note: Models numbers beginning in "V2-S2" are considered Storm Speaker Microphones.

Headsets:

Models: V4-10018-S, V4-10019-S, V4-10080-S, V4-10081-S, V4-10150-S, V4-10316-S, V4-10317-S, V4-10391-S, V4-10430-S, V4-10431-S, V4-10433-S, V4-10434-S, V4-10523-S, V4-10693-S, and V4-10694-S.

Either behind the head, over the head, or light weight style headset with one or two speakers, one microphone, either straight or coil cord, with or without press to talk switch, with or without clothing clip and with a connection to an intrinsically safe radio via entity parameters.

Hurricane Headsets:

Models: V4-HN2CM3B-S, V4-HN2KB3B-S, V4-HN2MJ3B-S

Headset with two ear tip style speakers, a microphone, a straight cord, a press to talk switch, and a clothing clip and with connection to an intrinsically safe radio via entity parameters.

Earphone Kits:

Models: V1-10305-S, V1-10432-S, V1-10433-S, V1-11155-S.

Earphone consisting of a speaker, coil cord, connection clip, secondary coil cord and plug-in connection to an intrinsically safe apparatus. Electrical connection to intrinsically safe apparatus is made via entity parameters.

PTT Adapter Kits:

Model: V1-10513-S, V1-10514-S, V1-10515-S.

A press to talk switch consisting of a switch assembly, a straight or coil cord, with or without a connection strap and a plug-in connection to the intrinsically safe apparatus. Electrical connection to intrinsically safe apparatus is made via entity parameters.



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PARAMETERS RELATING TO THE SAFETY

Electrical data

Model	Ui (Volts)	Pi (Watts)	Ii (Amps)	Li (mH)	Ci (uF)	Uo (Volts)	Po (Watts)	Io (Amps)	Lo (mH)	Co (uF)	Group
Headsets											
V4-10018-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10019-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10080-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10081-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10150-S	9.6	1.3	0.24	0.4	1.0	None	None	None	None	None	IIC
V4-10316-S	9.6	1.3	0.24	0.4	1.0	None	None	None	None	None	IIC
V4-10317-S	9.6	1.3	0.24	0.4	1.0	None	None	None	None	None	IIC
V4-10391-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10430-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10431-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10433-S	9.6	1.3	0.24	0.4	1.3	None	None	None	None	None	IIB
V4-10434-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10523-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10693-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
V4-10694-S	9.6	1.3	0.24	0.4	0.01	None	None	None	None	None	IIC
Hurricane Headsets											
V4-HN2CM3B-S	9.6	1.3	0.24	0.2	0.2	None	None	None	None	None	IIC
V4-HN2KB3B-S	9.6	1.3	0.24	0.2	0.2	None	None	None	None	None	IIC
V4-HN2MJ3B-S	9.6	1.3	0.24	0.2	0.2	None	None	None	None	None	IIC
Earphone Kits											
V1-10305-S	9.6	1.3	0.22	0.1	1.3	None	None	None	None	None	IIC
V1-10432-S	9.6	1.3	0.22	0.1	1.3	None	None	None	None	None	IIC
V1-10433-S	9.6	1.3	0.22	0.1	0.01	None	None	None	None	None	IIC
V1-11155-S	9.6	1.3	0.22	0.1	0.01	None	None	None	None	None	IIC
PTT Adapter Kits											
V1-10513-S	9.6	1.3	0.22	0.2	0.01	None	None	None	None	None	IIC
V1-10514-S	9.6	1.3	0.22	0.2	0.01	None	None	None	None	None	IIC
V1-10515-S	9.6	1.3	0.22	0.2	0.01	None	None	None	None	None	IIC



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MARKING

Marking has to be readable and indelible; it has to include the following indications:

EACH UNIT SOLD WILL INCLUDE THE FOLLOWING MARKINGS ON A LABEL:

- A) THE NAME OF THE MANUFACTURE; INCLUDING THE ADDRESS OF THE MANUFACTURE
- B) THE MANUFACTURE'S TYPE IDENTIFICATION;
- C) THE SYMBOL Ex
- D) THE SYMBOL FOR EACH TYPE OF PRODUCTION USED: "ia": INTRINSIC LEVEL OF PROTECTION "ia"
- E) THE SYMBOL OF THE GROUP: IIC
- F) THE SYMBOL INDICATING THE TEMPERATURE CLASS: T4 ALONG WITH $-40^{\circ}\text{C} < \text{Ta} < +40^{\circ}\text{C}$
- G) THE EQUIPMENT PROTECTION LEVEL: Gb
- H) A SERIAL NUMBER THAT REPRESENTS THE DATE OF MANUFACTURE
- I) ATEX/IECEX CERTIFICATE NUMBERS AS INDICATED IN THE INTRINSICALLY SAFE (D) INSTALLATION INSTRUCTIONS
- J) THE SYMBOL "X" AFTER THE CERTIFICATE NUMBER AND; (D)
- K) CE LOGO FOLLOWED BY 0539 THEN Ex SYMBOL II 2 G
- L) THE INTRINSICALLY SAFE ENTITY PARAMETERS AS SHOWN IN THE INTRINSICALLY SAFE INSTALLATION INSTRUCTIONS
- M) UKCA LOGO FOLLOWED BY 0843 (D)
- N) UKEx CERTIFICATE NUMBER (D)