



# 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](http://www.iecex.com)

Certificate No.: IECEx ETL 17.0031X

Issue No: 0

Certificate history:

[Issue No. 0 \(2018-05-14\)](#)

Status: **Current**

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Date of Issue: **2018-05-14**

Applicant: **Extrel CMS**  
575 Epsilon Drive Suite 2  
Pittsburgh, PA 15238  
**United States of America**

Equipment: **MAX300-RTG-\*\*\* Mass Spectrometer**

*Optional accessory:*

Type of Protection: **Flameproof "db", Intrinisc safety "ib", Encapsulation "mb", Pressurized "pxb" pressurized "pzc"**

Marking:

Ex \* T4 Gb/Gc

\*See equipment description

-20°C to +50°C

IECEX ETL 17.0031X

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

Kevin J. Wolf

*Position:*

Certification Officer

*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](#).

Certificate issued by:

**Intertek**  
3933 US Route 11 South  
Cortland NY 13045-2995  
United States of America



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Manufacturer: **Extrel CMS**  
575 Epsilon Drive Suite 2  
Pittsburgh, PA 15238  
**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 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:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-11 : 2011</b> Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-18 : 2014</b> Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
<b>IEC 60079-2 : 2014-07</b> Edition:6	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"

*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/ETL/ExTR17.0036/00](#)

Quality Assessment Report:

[GB/ITS/QAR18.0001/00](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The MAX300™-RTG process mass spectrometer is a versatile real-time process analyzer capable of fully automatic operation. It can handle a wide range of applications for quantitative analysis of gases and vapors, as well as monitor multiple components in any one stream and analyze up to 128 streams (including calibration gases).

All electronics are housed inside a pressurized, 1.91mm thick, 436 liter, carbon or stainless steel (main enclosure) and stainless-steel (air conditioner enclosure) enclosure which is purged with an Expo Technologies Z-purge Controller or X-Purge controller except for the optional heater, flow switch, and communications box, see table below for details.

Electronics housed inside the purged enclosure cannot be powered without pressurization except for the battery for Memory Back Up which circuit which is powered by 3.0V Lithium / Manganese Dioxide (Li/MnO<sub>2</sub>) Coin cell (Reneta or Equivalent) Part No. CR2032 MFR SM which was evaluated and rated for Ex ib.

See Annex for additional information.

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

Equipment is only to be wiped with a damp cloth or when not in a hazardous area.

End user must supply suitable wire rated for temperature 80°C or higher.

End user must supply suitably rated seals for the optional communications box

End user must supply suitably rated seal for the MIU

### Annex:

[Annex\\_doc\\_for\\_IEC\\_Ex\\_C\\_of\\_C\\_or\\_TR.pdf](#)



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<b>Annex No. 1</b>		

### Manufacturer's documents

#### Drawings associated with Issue 0 of this certificate:

Title:	Drawing No.:	Rev. Level:	Date:
Certification Drawing ATEX/IEC Max300-RTG	823194	N	05/04/18
Schematic, Wiring Max300-RTG	823455	C	05/02/17
MAX300-RT Installation Manual	823518	H	May 2018
Certification Drawing Assy, PCB, IS Battery, Computer, RTG	824374	A	12/04/17
Certification Drawing Assy, Flow Switch MAX300-RTG	824443	0	12/20/17

#### Model and marking configuration:

Model Number	Marking	Description
MAX300-RTG-Z1CF	Ex db ib mb pxb IIC T4 Gb	Includes 'mb' flow switch (item 1 below) and 'd' heater (item 3 below)
MAX300-RTG-Z1C	Ex db ib pxb IIC T4 Gb	Includes 'd' heater (item 3 below)
MAX300-RTG-Z1BF	Ex db ib mb pxb IIB+H2 T4 Gb	Includes 'mb' inlet flow switch (item 1 below), 'd' heater (item 3 below), and 'd IIB+H2' communication box (item 4 below)
MAX300-RTG-Z1B	Ex db ib pxb IIB+H2 T4 Gb	Includes 'd' heater (item 3 below) and 'd IIB+H2' communication box (item 4 below)
MAX300-RTG-Z2CF	Ex ib mb pzc IIC T4 Gc	Includes 'mb' flow switch (item 1 below)
MAX300-RTG-Z2C	Ex ib pzc IIC T4 Gc	Does not include any of the optional accessories below
MAX300-RTG-Z2CFH	Ex db ib mb pzc IIC T4 Gc	Includes 'mb' inlet flow switch (item 1 below) and valve 'd' heater (item 3 below)
MAX300-RTG-Z2CH	Ex db ib pzc IIC T4 Gc	Includes 'd' heater (item 3 below)

#### Additional product information:

##### **Purge Parameters for Zone 1:**

Purge Gas: Air or inert

Minimum overpressure: 0.50 mbar

Normal overpressure: 2.5 mbar

Maximum overpressure: 5 mbar

Maximum leakage rate: 50l/min

Minimum purge flow rate: 300 l/min

Minimum purge time: 10 minutes

Minimum continuous dilution flow rate: 80 l/min

Supply pressure: 4-8 Bar

Enclosure with a containment system: Limited Internal Source of Release

Maximum sample flow rate: 0.015 l/min

Maximum sample supply pressure: 20 psig

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## Purge Parameters for Zone 2:

Purge Gas: Air or inert

Minimum overpressure: 0.25 mbar

Normal overpressure: 2.5 mbar

Maximum overpressure: 5 mbar

Maximum leakage rate: 50l/min

Minimum purge flow rate: 142 l/min

Minimum purge time: 10 minutes

Minimum continuous dilution flow rate: 142 l/min

Supply pressure: 4-8 Bar

Enclosure with a containment system: Limited Internal Source of Release

Maximum sample flow rate: 0.015 l/min

Maximum sample supply pressure: 20 psig

## Routine Tests:

Required per IEC 60079-2

Section 17.1 Functional Test

Section 17.2 Leakage Test

Section 17.3 Tests for an infallible containment system (Required for the input portion of the containment system)

Section 17.4 Tests for a containment section with a limited release (Required for the output portion of the containment system)

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**intertek**  
Total Quality. Assured.



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<b>Annex No. 1</b>		

### Incorporated Ex Equipment/Components:

No.:	Item:	Manufacturer:	Part No.:	Details:	
1.	Flow Switch  Ex mb IIC T6	Malema Sensors	M-50X-S13-02-014  Or  M-50X-H13-02-006	Certificate No.	IECEX UL 13.0067X ISSEp 08 ATEX 028X
				Standards/Versions:	IEC 60079-0: 2011, IEC 60079-18: 2009 EN 60079-0: 2012, EN 60079-18: 2009
				X/U Conditions:	-installed with conduit and sealed inside the purged enclosure -fuse connected externally inside the purge enclosure and is rated 1A -T-class T6 is good for 50C -connected to enclosure which is earthed
				Notes:	See gap analysis, in IEC 60079-18 ExTR, report 103006722CRT-001f
2.	Purge Controller – Z-purge  Ex [pzc] IIC -20 to 55C T6	EXPO Technologies Limited	071ZCF/PM/ S-INT	Certificate No.	IECEX SIR 07.0027X  Sira 01 ATEX 1295X
				Standards/Versions:	IEC 60079-0: 2011, IEC 60079-2: 2014  EN 60079-0: 2012, EN 60079-2:2014
				X/U Conditions:	<ol style="list-style-type: none"> <li>1. N/A CT Option</li> <li>2. Installed as per instructions</li> <li>3. Values are set accordingly</li> <li>4. Intertek evaluated combination</li> <li>5. N/A Low temp not used</li> <li>6. N/A vortex cooler not used</li> <li>7. These versions are not used.</li> </ol>
				Notes:	None
3.	Heater  Ex db IIC T4	Intertec-Hess GmbH	HABA-DDA4 0027	Certificate No.	IECEX PTB 07.0055X  PTB 02 ATEX 1116X
				Standards/Versions:	IEC 60079-0: 2011, IEC 60079-1: 2007 EN 60079-0: 2012, EN 60079-1: 2007
				X/U Conditions:	<ol style="list-style-type: none"> <li>1. Temperature test conducted, see ExTRs</li> <li>2. Leads are connected adequately</li> <li>3. Connections are in an enclosure which is good for IEC 60079-0</li> <li>4. Connected by Extel, connections are good.</li> <li>5. Not used in dust areas.</li> </ol>

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No.:	Item:	Manufacturer:	Part No.:	Details:
				Notes: See gap analysis, in IEC 60079-1 ExTR, report 103006722CRT-001e
4.	Communications box	Killark, Div. of Hubbell Inc.	EXB-10148N34 CEN+17617+m od	Certificate No. IECEx PTB 07.0022U PTB 07 ATEX 1025 U
				Standards/Versions: IEC 60079-0: 2004, IEC 60079-1: 2003,  Cert: EN 60079-0: 2006, EN 60079-1: 2004, DoC: EN 60079-0:2012, EN 60079-1: 2014
				X/U Conditions: <ol style="list-style-type: none"> <li>1. Openings are sealed with provided plugs and glands (see report 103006722CRT-001e) or by end user (see manual)</li> <li>2. See 1</li> <li>3. No repair of flamepaths</li> </ol>
				Notes: <ul style="list-style-type: none"> <li>• See report 103006722CRT-001e for the gap analysis.)</li> <li>• Not used for dust protection</li> </ul>
5.	Purge Controller – X-purge  Ex [pxb] IIC -20 to 55C T6	EXPO Technologies Limited	071XCF/HP/SS /PO07	Certificate No. IECEx SIR 07.0027X Sira 01 ATEX 1295X
				Standards/Versions: IEC 60079-0: 2011, IEC 60079-2: 2014  EN 60079-0: 2012, EN 60079-2:2014
				X/U Conditions: See item 2
				Notes: None
6.	IS barrier/Switch Amplifier	Pepperl + Fuch GmbH	KCD2-SR-EX-LB	Certificate No. IECEx BAS 06.0025 Baseefa06ATEX0092
				Standards/Versions: IEC 60079-0: 2007, IEC 60079-11: 2006, IEC 60079-26: 2004  EN 60079-0: 2009, EN 60079-11:2007
				X/U Conditions: None
				Notes: See gap analysis in report 103006722CRT-001d

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