



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 18.0030X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 4	Issue 3 (2021-07-20)
Date of Issue:	2022-04-12		Issue 2 (2019-12-19)
Applicant:	ExRobotics B.V. Effenseweg 1 Breda, 4838 BA Netherlands		Issue 1 (2019-01-28)
Equipment:	ExR-1 Robot Operator, ExR-1 Robot Operator Revision 2 and ExR-1 Robot Operator Revision 3		
Optional accessory:			
Type of Protection:	Flameproof "db", Increased safety "eb", Intrinsic safety "ib", Encapsulation "mb", Powder filling "qb"		
Marking:	Ex db eb ib mb qb IIB T4 Gb -20°C ≤ Ta ≤ +50°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





IECEX Certificate of Conformity

Certificate No.: **IECEX UL 18.0030X**

Page 2 of 4

Date of issue: 2022-04-12

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Manufacturer: **ExRobotics B.V.**
Effenseweg 1
Breda, 4838 BA
Netherlands

Manufacturing locations: **ExRobotics B.V.**
Effenseweg 1
Breda, 4838 BA
Netherlands

Ex Robotics B.V.
Delftechpark 26,
Delft 2628 XH
Netherlands

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 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

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

[IEC 60079-18:2017](#) Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

[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:

[US/UL/ExTR18.0036/00](#)
[US/UL/ExTR18.0036/03](#)

[US/UL/ExTR18.0036/01](#)
[US/UL/ExTR18.0036/04](#)

[US/UL/ExTR18.0036/02](#)

Quality Assessment Report:

[DK/ULD/QAR18.0002/06](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX UL 18.0030X**

Page 3 of 4

Date of issue: 2022-04-12

Issue No: 4

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The ExR-1 Robot Operator, ExR-1 Robot Operator Revision 2 and ExR-1 Robot Operator Revision 3 are remotely operated robotic vehicles that are used to inspect oil and gas facilities. The ExR-1 Robot Operator, ExR-1 Robot Operator Revision 2 and ExR-1 Robot Operator Revision 3 are constructed of certified components including cameras, lights, motors, and various sensors. The various components are interconnected with certified cable glands and suitable cables.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Do not repair the flameproof joints of the robot or any of the accessories.
- The flameproof joint of the R Stahl FX15 series beacon will only be secured using fasteners supplied by R Stahl. Where fasteners are used to secure other flameproof joints they have a yield stress $\geq 450 \text{ Nmm}^2$.



IECEX Certificate of Conformity

Certificate No.: **IECEX UL 18.0030X**

Page 4 of 4

Date of issue: 2022-04-12

Issue No: 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Updates to the Electronics Box and the addition of new sensor options.

Issue 2: Minor drawing updates, the addition of Model ExR-1 Robot Operator Revision 2, a Battery Management System, and the addition of the Infrared Leak Detection Module.

Issue 3: Minor drawing updates, the addition of Model ExR-1 Robot Operator Revision 3, addition of an HP Induction Charger, addition of alternate cable glands, addition of an optional inspection module with thermal camera, and alternate gas detector options. There are no differences between IEC 60079-7, Edition 5.0 and IEC 60079-7, Edition 5.1 that affect this product.

Issue 4: Update of manufacturing location address.

Annex:

[Annex to IECEx UL 18.0030X Issue 4.pdf](#)



IECEX Certificate of Conformity

Certificate No.: IECEX UL 18.0030X

Issue No.: 4

Page 1 of 4

PARAMETERS RELATING TO THE SAFETY

Maximum Wattage 1300W

Um = 240VAC

MARKING

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

		ExRobotics B.V. Effenseweg 1 4838 BA Breda The Netherlands	
CE 0539	Year of manufacture 2021		
ExR-1 Robot Operator Revision 3	Weight 100kg		
ExR-SW-000001	Serial number #202		
IECEX UL 18.0030X	DEMKO 18 ATEX 1932X		
II 2 G Ex db eb ib mb qb IIB T4 Gb			
-20°C ≤ Ta ≤ +50°C		See Instructions	
⚡ Total power housed < 1300 W • Um = 240V • Operating < 45 V DC			
WARNING THIS PRODUCT IS ONLY TO BE SERVICED BY EXROBOTICS	WARNING DO NOT REMOVE ANY PARTS	WARNING DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE	WARNING DO NOT CHARGE IN A HAZARDOUS AREA



ExRobotics B.V.
Effenseweg 1
4838 BA Breda
The Netherlands

CE 0539	Year of manufacture 2019		
ExR-1 Robot Operator Revision 2			
EXR-SW-000001			
IECEX UL 18.0030X	DEMKO 18 ATEX 1932X		
II 2G Ex db eb ib mb qb IIB T4 Gb			
-20°C ≤ Ta ≤ +50°C		See Instructions	
⚡ Total power housed < 1300 W • Um = 240V • Operating < 45V DC			
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IECEX Certificate of Conformity

Certificate No.: IECEX UL 18.0030X

Issue No.: 4

Page 2 of 4



ExRobotics B.V.
Effenseweg 1
4838 BA Breda
The Netherlands

CE 0539	Year of manufacture	2019	
ExR-1 Robot Operator			
EXR-SW-000002	01		
IECEX UL 18.0030X DEMKO 18 ATEX 1932X			
Ⓔ II 2G Ex db cb ib mb qb IIB T4 Gb			
-20°C ≤ Ta ≤ +50°C <i>See instructions</i>			
⚡ Total power housed < 1300 W · U _n = 240V · Operating < 45V DC			
WARNING THIS PRODUCT IS ONLY TO BE SERVICED BY EXROBOTICS	WARNING DO NOT REMOVE ANY PARTS	WARNING DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE	WARNING DO NOT CHARGE IN A HAZARDOUS AREA

ROUTINE EXAMINATIONS AND TESTS

Each piece of equipment defined above has to have successfully passed; before delivery:

- Routine Surface Resistance test in accordance with Clause 4.2.3 of IEC 60079-32-2 shall be conducted on each Thistle Track Centipede. Reference Drawing 20180716IP1 for further details.
- Routine Dielectric Strength Test in accordance with Clause 5.2.2 of IEC 60079-5 shall be performed on each lot of Swarco glass beads. Reference Drawing 20180720RS1 for further details.
- Routine Pressure Test in accordance with Clause 5.2.1 of IEC 60079-5 shall be performed on each Electronics Box at a pressure of 50kPa for a duration of not less than 10 seconds. No permanent deformation of the enclosure is to exceed 0.5mm in any dimension. Reference Drawing 20180710IP1 for further details.

The following clauses from IEC 60079-14 Ed. 5 were verified as part of the Ex equipment assembly: 4.1, 4.4.1.1, 4.4.1.2, 4.4.2, 5.12, 5.14.2, 6.1, 6.2, 6.5.1, 6.5.2, 6.7.1, 6.7.2, 7, 8.1, 8.2, 8.3, 9.1, 9.3.1, 9.3.2, 9.3.8, 9.5, 9.6.2, 10.1, 10.2, 10.3, 10.5, 10.6.1, 10.6.2, 11.1, 14.1, 15.1, 16.1, 16.2.1, 16.2.2.1, 16.2.2.2, 16.2.2.5.1, 16.2.2.5.2, 16.2.2.6, 16.2.3, 16.4, 20, and 21.

The following clauses from IEC 60079-14, Ed. 5, were considered not applicable: 4.4.3, 5.4.3, 5.4.5, 5.6.3, 5.8, 5.10.3, 5.11.4, 5.11.5, 5.13.1, 5.13.2, 5.13.3, 5.15, 5.16, 6.3, 6.4, 6.5.3, 6.8, 9.2, 9.3.3, 9.3.4, 9.3.5, 9.3.9, 9.4, 9.6.1, 9.6.3, 9.6.4, 9.6.5, 10.4, 10.7, 10.8, 11.2.1, 11.2.2, 11.3, 11.4, 11.5, 11.6, 12, 13, 14.2, 14.4, 15.2, 15.3, 15.4, 16.2.2.3, 16.2.2.4, 16.2.2.5.3, 16.2.2.7, 16.2.2.8, 16.2.4, 16.3, 16.5, 16.6, 17, 18, 19, 22, 23, and Annex H.

The following clauses from IEC 60079-14, Ed. 5, need to be verified on site: 4.2, 4.3, 4.5, 5.1, 5.2, 5.3, 5.4.1, 5.4.2, 5.4.3, 5.4.4, 5.5, 5.6.1, 5.6.2, 5.7, 5.9, 5.10.1, 5.10.2, 5.11.1, 5.11.2, 5.11.3, 5.14.1, 6.6, 6.9, 9.3.6, 9.3.7, 9.6.6, 14.3, Annex A, Annex C, Annex G, and Annex K.



IECEX Certificate of Conformity

Certificate No.: IECEX UL 18.0030X

Issue No.: 4

Page 3 of 4

LIST OF CERTIFIED COMPONENTS

The following additional previous editions of Standards noted under the "Standards" section of this Certificate were applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the "Standards" section.

Product	Certificate Number	Standards
CMP Ex "d" barrier gland 20S16PX2KREX1RA4 and 20SPX2KREX1RA4	IECEX SIR 13.0027X	IEC 60079-0:2011 IEC 60079-1:2007-04 IEC 60079-15:2010 IEC 60079-31:2008 IEC 60079-7:2006-07
R. Stahl Switches 8003/121-015 and 8003/131-726-2r	IECEX PTB 06.0065X	IEC 60079-0 Edition 2004 IEC 60079-1 Edition 2001 IEC 60079-7 Edition 2001
Multibox Terminal Boxes MBA 202311 and MBA 332311	IECEX IBE 14.0020U	IEC 60079-0:2011 IEC 60079-31:2013 IEC 60079-7:2006-07
Raxton Breather Drain CTE1300YU	IECEX ITS 13.0018X	IEC 60079-1 Edition 2007
Ion Science Ltd Gas Detector Falco 1.1	IECEX FTZU 16.0011X	IEC 60079-1 Edition 2007
R. Stahl FX15 Beacon	IECEX BAS 13.0003	IEC 60079-0:2011 IEC 60079-1:2014-06 IEC 60079-31:2013
Crowcon Detection Instruments Limited Gas Detector IR Gas Detector	IECEX BAS 09.0109X	IEC 60079-0 Edition 2007 IEC 60079-1 Edition 2007
PMP.E4 or E5	IECEX CML 16.0046X	IEC 60079-0:2011 IEC 60079-1:2007-04 IEC 60079-31:2008 IEC 60079-7:2006-07
XRL	IECEX UL 17.0038X	IEC 60079-0:2017 IEC 60079-1:2014-06 IEC 60079-31:2013
GD10-P00	IECEX PRE 19.0015X	IEC 60079-0:2017 IEC 60079-1:2014-06 IEC 60079-7:2016
GD10P and GD10PE	IECEX NEM 07.0006	IEC 60079-0:2011 IEC 60079-1:2007-04 IEC 60079-7:2006-07
8573/15-210 241387	IECEX PTB 16.0030U	IEC 60079-0:2017 IEC 60079-1:2014-06 IEC 60079-31:2013 IEC 60079-7:2015



IECEX Certificate of Conformity

Certificate No.: IECEX UL 18.0030X

Issue No.: 4

Page 4 of 4

The following additional previous editions of Standards noted under the "Standards" section of this Certificate were applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the "Standards" section.

Product	Certificate Number	Standards
XIMIC	IECEX BAS 18.0026X	IEC 60079-0:2011 IEC 60079-11:2011
8003/121-015 8003/131-726-2r	IECEX PTB 06.0065X	IEC 60079-0:20013 IEC 60079-1:2001 IEC 60079-7:2001 IEC 61241-0:2004 IEC 61241-1:2004