



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

Certificate No.: **IECEX UL 21.0025X** Page 1 of 3 [Certificate history:](#)  
Status: **Current** Issue No: 0  
Date of Issue: 2021-05-11  
Applicant: **ExRobotics B.V.**  
Effenseweg 1  
Breda 4838 BA  
Netherlands  
Equipment: **Robot Operator and Docking Station, ExR-2 Robot Operator (Includes ExR-2 Docking Station)**  
Optional accessory:  
Type of Protection: **Equipment assemblies**  
Marking: Ex 60079-46 IIB T4 Gb  
-40°C to +55°C

Approved for issue on behalf of the IECEx  
Certification Body:

**Katy A. Holdredge**

Position:

**Senior Staff Engineer**

Signature:  
(for printed version)

Date:

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Northbrook IL 60062-2096  
United States of America





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

Additional manufacturing locations: **ExRobotics B.V.**  
Elektronicaweg 29  
Delft 2628 XG  
**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

**IEC TS 60079-46:2017** Explosive atmospheres - Part 46: Equipment assemblies  
Edition:1.0

**ISO 80079-36:2016** Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements  
Edition:1.0

**ISO 80079-37:2016** Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"  
Edition:1.0

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 Report:

[US/UL/ExTR21.0025/00](#)

Quality Assessment Report:

[DK/ULD/QAR18.0002/04](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The ExR-2 Robot Operator is a remotely operated vehicle that is used to inspect oil and gas facilities. The ExR-2 Docking Station is provided as one method of charging the ExR-2 Robot Operator and is permissible for charging within the Hazardous (Explosive) Atmosphere. The vehicle is 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:**

- Follow instructions for installation
- Do not repair the flameproof joints of robots or any of their components.
- Flameproof joints are closed using fasteners with a yield stress  $\geq 450 \text{ Nmm}^2$ .
- Do not repair robots' electronics boxes or any other components that are not mentioned in the section on Robot Servicing.

## **Annex:**

[Annex to IECEx UL 21.0025X Issue 0.pdf](#)



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## TYPE DESIGNATION

ExR-2 Robot Operator and ExR-2 Docking Station

## PARAMETERS RELATING TO THE SAFETY

ExR-2 Docking Station 100V to 240Vac, 1300W max

ExR-2 Robot Operator: Um = 240V, 45Vdc max, 1300W max

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, 5.14.1., 6.1, 6.2, 6.5.1, 6.5.2, 6.7.1, 6.7.2, 7, 8.1, 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, 5.12, 5.13.1, 5.13.2, 5.13.3, 5.15, 6.5.3, 6.8, 9.2, 9.3.3, 9.3.4, 9.3.5, 9.4, 9.6.1, 9.6.3, 9.6.4, 9.6.5, 9.6.6, 10.4, 10.7, 10.8, 11.2.1, 11.2.2, 11.3, 11.4, 11.5, 11.6, 12, 13, 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, 5.14.2, 5.16, 6.3, 6.4, 6.6, 6.9, 8.2, 8.3, 9.3.6, 9.3.7, 9.3.9, 14.2, 14.3, Annex A, Annex C, Annex G, and Annex K.

## 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	Date of manufacture	September 2021	
ExR-2 Robot Operator	Weight	100kg	
ExR-SW-003377	Serial number	#202	
IECEx UL 21.0025X	UL 21 ATEX 2535X	UL 21 ATEX 2536X	
Ex 60079-46 IIB T4 Gb	II 2 G Ex db eb ib mb q IIB T4 Gb	Ex h IIB T4 Gb	
-40°C ≤ Ta ≤ +55°C	See Instructions		
⚡ Total power housed < 1300 W • Um = 240V • Operating < 45 V DC			
WARNING		WARNING	
OPEN ONLY IN NON- HAZARDOUS AREA		MAINTENANCE TO BE PERFORMED ONLY BY EXROBOTICS' APPROVED COMPANIES	

		ExRobotics B.V. Effenseweg 1 4838 BA Breda The Netherlands	
CE 0539	Date of manufacture	September 2021	
ExR-2 Docking Station	Weight	25kg	
DCX-SW-003721	Serial number	#001	
Part of IECEx UL 21.0025X UL 21 ATEX2535X UL 21 ATEX2536X			
IEC 61439-1			
-40°C ≤ Ta ≤ +55°C		See Instructions	
⚡ Total power housed < 1300 W • Um = 240V			
WARNING	WARNING	WARNING	
OPEN ONLY IN NON- HAZARDOUS AREA	CONNECT TO A 100 TO 240 VAC POWER SUPPLY WITH A 20A FUSE,	MAINTENANCE TO BE PERFORMED ONLY BY EXROBOTICS' APPROVED COMPANIES	



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## **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/EN 60079-32-2 shall be conducted on each Thistle Track Centipede. Reference Drawing ExR-SW-003377 for further details.
- Routine Dielectric Strength Test in accordance with Clause 5.2.2 of IEC/EN 60079-5 shall be performed on each lot of Swarco glass beads.
- Routine Pressure Test in accordance with Clause 5.2.1 of IEC/EN 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.

## **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.

<b>Product</b>	<b>Certificate Number</b>	<b>Standards</b>
DRV-SW-001925	IECEX UL 18.0036X	IEC 60079-0:2017 IEC 60079-1:2014-06
MBA 332311 MBA 101080	IECEX IBE 14.0020U	IEC 60079-0:2011 IEC 60079-7:2006-07 IEC 60079-31:2013
757 & 767 Range	IECEX CML 18.0177X	IEC 60079-0:2017 IEC 60079-1:2014-06 IEC 60079-7:2017 IEC 60079-31:2013
1.640 & 1.642 Ranges	IECEX KEM 07.0014X	IEC 60079-0:2011 IEC 60079-7:2015 IEC 60079-31:2013
CTE1300YU	IECEX ITS 13.0018X	IEC 60079-0:2011 IEC 60079-1:2007-04 IEC 60079-31:2008 IEC 60079-7:2006-07
RXSMS0400RX0	IECEX MSC 19.0001X	IEC 60079-:2017 IEC 60079-1:2014-06 IEC 60079-11:2011 IEC 60079-18:2017 IEC 60079-31:2013
LEX15	IECEX DEK 17.0046X	IEC 60079-0:2011 IEC 60079-1:2014-06 IEC 60079-11:2011 IEC 60079-15:200 IEC 60079-31:2013 IEC 60079-7:2015



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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
CCB-SW-03342	IECEX UL 20.0131X	IEC 60079-0:2017 IEC 60079-1:2014-06
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
PMP.E4 or E5 PMS.N6.C.20	IECEX CML 16.0046X	IEC 60079-0:2011 IEC 60079-1:2007-04 IEC 60079-31:2008 IEC 60079-7:2006-07
XIMIC	IECEX BAS 18.0026X	IEC 60079-0:2011 IEC 60079-11:2011
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
MDR-SW-003678	IECEX DEK 20.0067X	IEC 60079-0:2017 IEC 60079-1:2014-06
LDR-SW-003226	IECEX UL 20.0132X	IEC 60079-0:2017 IEC 60079-1:2014-06
CCB-SW-003342	IECEX UL 20.0131X	IEC 60079-0:2017 IEC 60079-1:2014-06
S3KAL2	IECEX UL 11.0011X	IEC 60079-0:2011 IEC 60079-1:2014-06 IEC 60079-11:2011 IEC 60079-26:2006 IEC 60079-31:2013
S3KXS*1SS	IECEX UL 08.0013X	IEC 60079-0:2017 IEC 60079-11:2011
XRL	IECEX UL 17.0038X	IEC 60079-0:2017 IEC 60079-1:2014-06 IEC 60079-31:2013
FALCO 1.1	IECEX FTZU 16.0011X	IEC 60079-0:2011 IEC 60079-1:2007-04 IEC 60079-11:2011
IRMAX, S0121130	IECEX BAS 09.0109X	IEC 60079-0:2007-10 IEC 60079-1:2007-04 IEC 60079-31:2008
GD10-P00	IECEX PRE 19.0015X	IEC 60079-0:2017 IEC 60079-1:2014-06 IEC 60079-7:2016
ATX10	IECEX ULD 13.0003X	IEC 60079-0:2011 IEC 60079-1:2007-04 IEC 60079-31:2008



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Product	Certificate Number	Standards
AC100	IECEX ULD 13.0002X	IEC 60079-0:2011 IEC 60079-1:2014-06 IEC 60079-11:2011 IEC 60079-31:2013
DB20 11C	IECEX BAS 05.0083X	IEC 60079-0:2004 IEC 60079-1:2003 IEC 60079-7:2001 IEC 61241-0:2004 IEC 61241-1:2004
20S16PX2KREX1RA4	IECEX CML 18.0182X	IEC 60079-0:2017 IEC 60079-1:2014-06 IEC 60079-15:2010 IEC 60079-31:2013 IEC 60079-7:2017 IEC 60079-7:2015