



# 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)

### UNIT VERIFICATION

Certificate No.: IECEx ETL 19.0001X Issue No: 0 Certificate history:  
Issue No. 0 (2019-08-20)

Status: **Current** Page 1 of 3

Date of Issue: **2019-08-20**

Applicant: **Electron Machine Corporation**  
15824 Co Rd 450  
Umatilla, FL 32784  
**United States of America**

Equipment: **MPR E-Scan I.S. CCD Sensor Head**

Serial number(s) or Unique Identification: **14408-X, 14409-X, 14412-X, 14415-X, 14411-X, 14316-X, 14410-X, 14407-X, 14414-X, 14413-X**

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

Marking:  
Ex ia IIC T4  
-20°C ≤ Tamb ≤ +52°C  
IECEX ETL 19.0001X

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

Certificate issued by:

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





# IECEX Certificate of Conformity

Certificate No: IECEX ETL 19.0001X Issue No: 0

Date of Issue: **2019-08-20** Page 2 of 3

Manufacturer: **Electron Machine Corporation**  
15824 Co Rd 450  
Umatilla, FL 32784  
**United States of America**

Additional Manufacturing location(s):

This Unit verification certificate is issued as verification that the Apparatus identified on page 1, was assessed and tested and found to comply with the IEC Standard list below. 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:

**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 electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

*The Apparatus listed has successfully met the examination and test requirements as recorded in*

Test Report:

[US/ETL/ExTR19.0002/00](#)

Quality Assessment Report:

As this is a Unit Verification Certificate, no QAR is applicable as this certificate is specific to the items listed by serial number or other unique identification.



# IECEX Certificate of Conformity

Certificate No: IECEx ETL 19.0001X

Issue No: 0

Date of Issue: 2019-08-20

Page 3 of 3

## Schedule

### EQUIPMENT:

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

The product covered by this report is an Inline Process Refractometer. The evaluation for present certification includes only the sensing head that directly comes in contact with the process fluid. Supply to the sensor head is fed through a head barrier.

The sensing head utilizes charged coupled device technology to accomplish scanning the reflected light returned from the prism. Light radiated from LED passes through the prism surface to be reflected off mirror to the prism-to-process interface. Light intersecting the interface at an angle greater than critical angle is refracted into the solution. The light intersecting the interface at an angle less than critical angle is reflected upto mirror 2 and out of prism to the CCD linear array to be scanned.

Part of the sensing head comes in contact with the process fluids for measurement purposes. The max. process fluid temperature is 150°C.

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

- Process fluid temperature must not exceed 150°C
- Refer to instruction manual before use.
- All sealing devices/connections including cable glands, blanking elements, thread adapters, stopping plugs, cables and connectors shall maintain a minimum degree of protection of IP-66 depending on installation and environmental condition.
- For use only with a certified barrier with the following entity parameters:  $U_i = 7.14V$   $I_i = 0.729A$   $C_i = 2.87\mu F$   $L_i = 0HP$   $P_i = 0.784W$   $R_{barrier} = 9.8\Omega$

### Annex:

[SFT-IECEX-OP-19f Annex for IECEx Certificate of Conformity.pdf](#)



# Annex to IECEx Certificate of Conformity

<b>Certificate No:</b>	<b>IECEX ETL 19.0001X</b>	<b>Issue No. 0</b>
<b>Annex No. 1</b>		

<b>Technical Documents</b>			
<b>Title:</b>	<b>Drawing No.:</b>	<b>Rev. Level:</b>	<b>Date:</b>
Electron Machine Corporation – MPR E-Scan – I.S. CCD Sensor Head – Marking Information – V1R3	MKG-BGS-CCD_V1R3	V1R3	08/09/2019
MPR E-Scan Low Power CCD PCB V1R3	PCB-BGS-CCD_V1R3	V1R3	11/13/2018
Electron Machine Corporation - E-Scan - Low Power CCD Board Schematic - V1R7	SCH-BGS- CCD_V1R7.SchDoc	7	01/17/2019
OPERATING AND SERVICE MANUAL	MPR E-SCAN I/S	B	08/12/2019
Electron Machine Corporation - MPR E-Scan - I.S. CCD Sensor Head - Bill of Materials V1R4	BOM-BGS-CCD_V1R4	V1R4	08/19/2019
Squeeze fitting nut	A-7919	A	02/20/1986
Cover assembly E-scan	B-11450	A	05/08/1996
Assembly MPR E-Scan head for Intrinsic Safety	B-11805	I	10/22/2001
Assembly, LED E-Scan	A-11399	D	10/26/2018
Inter Diag, Intrinsic Safety Sensing Head	B-11827	A	11/12/2018

<b>Required Manufacturer Routine Testing</b> N/A
---