



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 SIR 14.0108X**

Page 1 of 4

Certificate history:

Status: **Current**

Issue No: 6

[Issue 5 \(2020-08-13\)](#)

[Issue 4 \(2019-03-21\)](#)

[Issue 3 \(2017-11-07\)](#)

[Issue 2 \(2016-10-20\)](#)

[Issue 1 \(2015-07-09\)](#)

[Issue 0 \(2015-02-10\)](#)

Date of Issue: 2024-04-02

Applicant: **Sun Yeh Electrical Ind. Co., Ltd**
No. 68, Lane 854, Sec.1, Shatian Rd., Dadu District
Taichung City TW-432403
Taiwan

Equipment: **LE Series Explosion-Proof Linear Valve Actuators**

Optional accessory:

Type of Protection: **Flameproof and Dust Protection by Enclosure**

Marking: Ex db IIB T4 Gb
Ex tb IIIC T130°C Db
Ta = -30°C to +70°C
IP68 (72h, 7m)

Approved for issue on behalf of the IECEx
Certification Body:

Michelle Halliwell

Position:

Director Operations, UK & Industrial Europe

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:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom





IECEx Certificate of Conformity

Certificate No.: **IECEx SIR 14.0108X**

Page 2 of 4

Date of issue: 2024-04-02

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Manufacturer: **Sun Yeh Electrical Ind. Co., Ltd**
No. 68, Lane 854, Sec.1, Shatian Rd., Dadu District
Taichung City TW-432403
Taiwan

Manufacturing locations: **Sun Yeh Electrical Ind. Co., Ltd**
No. 68, Lane 854, Sec.1, Shatian Rd.,
Dadu District
Taichung City TW-432403
Taiwan

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

[IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

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:

[GB/SIR/ExTR15.0029/00](#)
[GB/SIR/ExTR17.0229/00](#)
[GB/SIR/ExTR24.0039/00](#)

[GB/SIR/ExTR15.0197/00](#)
[GB/SIR/ExTR19.0083/00](#)

[GB/SIR/ExTR16.0247/00](#)
[GB/SIR/ExTR20.0108/00](#)

Quality Assessment Report:

[NO/NEM/QAR14.0013/06](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx SIR 14.0108X**

Page 3 of 4

Date of issue: 2024-04-02

Issue No: 6

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The LE Series Explosion-Proof Linear Valve Actuator comprises a cylindrical aluminium flameproof enclosure, containing a motor and associated electronics which drive a stainless steel linear actuator via a mechanical transmitting unit. A rotating handle may be used to manually drive the mechanical transmitting unit, when the equipment is unpowered, which can be removed from the mechanical circuit to prevent movement of the handle when the motor is driven.

The internal motor winding contains a bimetallic strip for thermal protection, which is set to operate at 125°C. The motor is provided with class F insulation.

The equipment is rated as IP68 (7 metres for 72 hours), which is maintained by O-ring seals in each joint and oil seals in the interface between the main housing and actuator/drive handle shafts.

The flameproof housing features two threaded cable entries, which may be NPT3/4", NPT1/2", M20x1.5 or M25x1.5. Each cable entry is supplied by the manufacturer with a proprietary stainless steel blanking plug which may be replaced by the end user with suitably certified and rated flameproof cable entry devices.

Refer to the Annexe for Model Nomenclature

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The flamepaths in this equipment are different to the standard dimensions given in IEC 60079-1. If specific flamepath dimensions are required then the manufacturer (OEM) must be contacted.
2. Caution - Use fasteners with yield stress $\geq 450\text{MPa}$.



IECEx Certificate of Conformity

Certificate No.: **IECEx SIR 14.0108X**

Page 4 of 4

Date of issue: 2024-04-02

Issue No: 6

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, Issue 6, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. Postal code change from 43244 to 432403.
2. Warning plate change YIELD STRESS value from "≥ 700MPa" to "≥ 450Mpa".
3. For the middle plate, adjust dimension from Ø140(-0.05 to +0) into Ø140(-0.1 to +0)
For the middle plate, adjust the accuracy of the bearing hole from Ø25.4(+0.01 to +0.03)to Ø25(+0.01 to +0.03)
4. Adjust the accuracy for the worm gear from JIS Level 4 to JIS Level 6
5. Cancel the accuracy of the drive shaft.
6. Material change for the Handwheel from Plastic (N6) to ADC10.
7. Upgrade IEC 60079-31:2013 to IEC 60079-31:2022
8. Based on Prime ExTR assessed complied result, add IP68 together with markings

Annex:

[IECEx SIR 14.0108X Annexe Issue 6.pdf](#)

Annexe to: IECEx SIR 14.0108X Issue 6 Annexe
Applicant: Sun Yeh Electrical Ind. Co., Ltd.
Apparatus: LE Series Explosion-Proof Linear Valve Actuators



Model nomenclature:

LE-X1-X2-X3

L – Linear Valve Actuator

E – Explosion Proof

X1 – Thrust (kg): 250 / 500 / 1000 / 2000

X2 – Voltage:

D24 – 24 VDC

24 – 24 VAC

100 – 100 VAC

120 – 110-120 VAC

200 – 200 VAC

220 – 220-240 VAC

X3 – Control Method:

M – Modulating

F – Floating

Conditions Of Manufacture

- i. IEC 60079-1:2014, Cl.16.1.1 Routine overpressure test – first method and acceptance criteria applied to all Models.

Test conditions as below:

| Applied Model Series | Batch testing routine test value (MPa) | Duration (seconds) |
|----------------------|--|--------------------|
| LE-250, LE-500 | ≥ 1.0 | ≥ 10 |
| LE-1000, LE-2000 | ≥ 1.1 | ≥ 10 |

Note: Equivalent unit and value may be applied as long as actual value meet above criteria.

Full Certificate Change History

Issue 1 – this Issue introduced the following change:

1. The company logo was changed on the label drawing.

Issue 2 – this Issue introduced the following changes:

1. The Certificate Holder's address was changed:
No. 81, Lane 355, San Kang Rd.,
Lung Ching Vil.
Lung Ching District
Taichung City, 43444
Taiwan, R.O.C
No. 68 Lane 854, Sec. 1, Shatian Road,
Dadu District,
Taichung City, 43244
Taiwan, R.O.C
2. The introduction of a 'D' Shaped drive to the output shaft.

Issue 3 – this Issue introduced the following changes:

1. To permit all model series linear valve actuators to be fitted with an alternative worm gear shaft. The external face of the shaft is recessed with a female square keyway, enabling the valve actuators to be connected to end user type specific output couplings.
2. Rationalisation of scheduled drawings to remove those that have been replaced, and/or are no longer used to support manufacturing compliance. In addition to the removal of the IP68 rating from being part of the concept of protection coding text string on the product nameplate.

Date: 02 April 2024

Page 1 of 2

Annexe to: IECEx SIR 14.0108X Issue 6 Annexe

Applicant: Sun Yeh Electrical Ind. Co., Ltd.

Apparatus: LE Series Explosion-Proof Linear Valve Actuators



3. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-1:2007 Ed 6 was replaced by IEC 60079-1:2014 Ed 7, the markings were updated accordingly. Inclusive of a reduction of the NPT thread length on the blanking devices.

Issue 4 – this Issue introduced the following changes:

1. The reinforcement of the Top Cover.
2. The introduction of transparent paint on labels.
3. The amendment of NPT threaded Blanking Elements.
4. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-0:2011 Ed.6 and IEC 60079-1:2014 Ed.7 were replaced by IEC 60079-0:2017 Ed.7 and IEC 60079-1:2014/COR1:2018, the Specific Conditions of Use, the Product Description and the Markings were amended to recognise the new standards.

Issue 5 – this Issue introduced the following changes:

1. Change the type key and related ratings as follows:

| Previous | New |
|-----------------------|---------------------------|
| 110 stands for 110VAC | 120 stands for 110-120VAC |
| 120 stands for 120VAC | |
| 220 stands for 220VAC | 220 stands for 220-240VAC |
| 240 stands for 240VAC | |

2. Correction of the Applicant's and Manufacturer's Name & Address and introduce separate nameplate drawings for ATEX and IECEx

Issue 6 – this Issue introduced the following changes:

1. Postal code change from 43244 to 432403.
2. Warning plate change YIELD STRESS value from "≥ 700MPa" to "≥ 450Mpa".
3. For the middle plate, adjust dimension from Ø140(-0.05 to +0) into Ø140(-0.1 to +0) for the middle plate, adjust the accuracy of the bearing hole from Ø25.4(+0.01 to +0.03) to Ø25(+0.01 to +0.03)
4. Adjust the accuracy for the worm gear from JIS Level 4 to JIS Level 6
5. Cancel the accuracy of the drive shaft.
6. Material change for the Handwheel from Plastic (N6) to ADC10.
7. Upgrade IEC 60079-31:2013 to IEC 60079-31:2022
8. Based on Prime ExTR assessed complied result, add IP68 together with markings