



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 14ATEX1307X** Issue: **7**

4 Equipment: **SE Series Explosion-Proof Spring Return Actuators**

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

6 Address: **No. 68, Ln. 854,
Sec. 1, Shatian Rd.,
Dadu Dist.,
Taichung City, 432403,
Taiwan**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014/AC:2018-09 EN 60079-31:2014
EN ISO 80079-36:2016 EN ISO 80079-37:2016

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

For SE series utilized with non-electrical gear box



II 2GD
Ex db h IIB T4 Gb
Ex tb h IIIC T130°C Db
Ta = -30°C to +70°C

For SE series without utilizing non-electrical gear box



II 2GD
Ex db IIB T4 Gb
Ex tb IIIC T130°C Db
Ta = -30°C to +70°C



Signed: Michelle Halliwell

Title: Director of Operations

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13 DESCRIPTION OF EQUIPMENT

The SE Series Explosion-Proof Spring Return Actuator comprises an aluminium flameproof enclosure, containing a motor and associated electronics which drive a carbon steel transmission shaft 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. Screws and Spring washer are made from stainless steel (SUS304). The enclosure is made from aluminium (ADC10).

The non-electrical equipment ignition hazard assessment is applied to the gear box and rotating handle of manual override only.

Within the flameproof enclosure is a double rack and pinion arrangement driven by the transmission shaft. Each rack is supported by a pair of springs, such that when power to the equipment is lost the actuator will be driven back to its original position.

The flameproof enclosure has a mechanical indicator at the upper end to show the position of the actuator valve which can be viewed through a cemented toughened glass window.

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 transmission/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.

Model Nomenclature :

SE-X1-X2-X3-X4-X5

S – Spring Return Actuator

E – Explosion Proof

X1 – Torque (Nm)

X2 – Voltage :

D24 – 24 VDC

24 – 24 VAC

100 – 100 VAC

120 – 110-120 VAC

200 – 200 VAC

220 – 220-240 VAC

380 – 380 VAC

440 – 440 VAC

X3 – Direction of Rotation:

- **CW – Clockwise**

- **CCW – Counter Clockwise**

X4 – Control Method:

- **T – Two Position**

- **M – Modulating**

- **F - Floating**

X5 – Manual Override:

- **Y – With Manual Override**

- **N – Without Manual Override**

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Variation 1 - This variation introduced the following change:

- i. The company logo was changed on the label drawing.

Variation 2 - This variation introduced the following changes:

- i. The Certificate Holder’s address was changed:

From:	To:
No. 81, Lane 355, San Kang Rd.,	No. 68 Lane 854, Sec. 1, Shatian Road,
Lung Ching Vil.	Dadu District,
Lung Ching District	Taichung City, 43244
Taichung City, 43444	Taiwan, R.O.C
Taiwan, R.O.C	
- ii. Introduction of alternative models that show the ‘power fail’ in the anti-clockwise position (manual over-ride on the left).

Variation 3 - This variation introduced the following changes:

- i. The reinforcement of the Top Cover.
- ii. The introduction of transparent paint on labels.
- iii. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012 and EN 60079-1:2007 were replaced by EN IEC 60079-0:2018 and EN 60079-1:2014/AC: 2018-09, the Specific Conditions of Use, the Product Description and the Markings were amended to recognise the new standards.

Variation 4 - This variation introduced the following changes:

- i. Change the type key and related ratings as follows:

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

- ii. Change of opening indicator type.
- iii. Change Applicant’s and Manufacturer’s address and separate ATEX and IECEx label drawing.

Variation 5 - This variation introduced the following changes:

- i. To include a non-electrical gear box of manual override function and together with hand wheel to Models SE Series. The manual override shall be used during the power shortage.
- ii. To add non-electrical equipment standards EN ISO 80079-36:2016, EN ISO 80079-37:2016.
- iii. To add stainless steel material to screws and spring washer to non-electrical gear box of manual override function.

Variation 6 - This variation introduced the following changes:

- i. Postal code change from 43244 to 432403.
- ii. Warning plate change YIELD STRESS value from “≥ 700MPa” to “≥ 450Mpa”.

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- iii. For the middle plate, adjust the accuracy for outside dimension from $\varnothing 166(-0.1$ to $-0.05)$ into $\varnothing 166(-0.15$ to $+0.08)$.
- iv. Adjust the accuracy for the drive shaft from $\varnothing 10(-0.02$ to $+0)$ into $\varnothing 10(-0.04$ to $+0)$.
- v. Change the outer length for End Cap from 100 mm to 99 mm.
- vi. To separate Certification Codes with/without non-electrical gear box.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	05 February 2015	R70009100A	The release of the prime certificate.
1	08 July 2015	R70038697A	The introduction of Variation 1.
2	20 October 2016	R70087357A	This Issue covers the following changes: <ul style="list-style-type: none">• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. (In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)• The introduction of Variation 2.
3	21 March 2019	R70211223A	The introduction of Variation 3.
4	31 October 2019	1142	Transfer of certificate Sira 14ATEX1307X from Sira Certification Service to CSA Group Netherlands B.V.
5	17 August 2020	R80039650A	The introduction of Variation 4.
6	26 October 2022	R80112645A	The introduction of Variation 5.
7	12 January 2024	R80190147A	The introduction of Variation 6.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

15.1 The flamepaths in this equipment are different to the standard dimensions given in EN 60079-1. If specific flamepath dimensions are required then the manufacturer (OEM) must be contacted.

15.2 Caution - Use fasteners with yield stress ≥ 450 MPa.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF MANUFACTURE

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

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- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 Each unit shall withstand an overpressure test according to IEC 60079-1 clause 16, at a pressure no less than those listed below for a period of at least ten seconds. The test shall be considered as satisfactory if on completion the enclosure has suffered no permanent deformation or damage affecting the type of protection.
 - For SE-500- - - - : The static overpressure test is not less than 9 bar.
 - For SE-1300- - - - : The static overpressure test is not less than 10 bar.
 - For SE-2000 and SE-2600- - - - : The static overpressure test is not less than 12 bar.
- 17.4 IEC 60079-1:2014, Cl.16 and Cl.15.2.3.2 Routine testing and acceptance criteria applied to all Models.

Test conditions as below:

Applied Model Series	Routine test value (MPa)	Test Duration (Second)
SE-500	≥ 0.9	≥ 10
SE-1300	≥ 1.0	
SE-2000, SE-2600	≥ 1.2	

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

Certificate Annexe



Certificate Number: Sira 14ATEX1307X

Equipment: SE Series Explosion-Proof Spring Return Actuators

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

Issue 0

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
Ex 10075	1 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10075	2 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10075	3 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10076	1 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10076	2 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10076	3 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10077	1 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10077	2 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 10077	3 of 3	1	16 Jan 15	Explosion proof spring return actuator
Ex 20210-4	1 of 1	1	16 Jan 15	Main housing (M20)
Ex 20210-3	1 of 1	1	16 Jan 15	Main housing (M25)
Ex 20210-2	1 of 1	1	16 Jan 15	Main housing (NPT 1/2")
Ex 20210-1	1 of 1	1	16 Jan 15	Main housing (NPT 3/4")
Ex 20211	1 of 1	1	16 Jan 15	Top cover
Ex 20229-4	1 of 1	1	16 Jan 15	Main housing (M20)
Ex 20229-3	1 of 1	1	16 Jan 15	Main housing (M25)
Ex 20229-2	1 of 1	1	16 Jan 15	Main housing (NPT 1/2")
Ex 20229-1	1 of 1	1	16 Jan 15	Main housing (NPT 3/4")
Ex 20230	1 of 1	1	16 Jan 15	Top cover
Ex 20231	1 of 1	1	16 Jan 15	Plate
Ex 20246-4	1 of 1	1	16 Jan 15	Main housing (M20)
Ex 20246-3	1 of 1	1	16 Jan 15	Main housing (M25)
Ex 20246-2	1 of 1	1	16 Jan 15	Main housing (NPT 1/2")
Ex 20246-1	1 of 1	1	16 Jan 15	Main housing (NPT 3/4")
Ex 20247	1 of 1	1	16 Jan 15	Top cover
Ex 20248	1 of 1	1	16 Jan 15	Plate
Ex 30512	1 of 1	1	16 Jan 15	Transmission shaft
Ex 30514	1 of 1	1	16 Jan 15	Plate
Ex 30515	1 of 1	1	16 Jan 15	End cap
Ex 30591	1 of 1	1	16 Jan 15	End cap
Ex 30592	1 of 1	1	16 Jan 15	Buffer fixed plate
Ex 30593	1 of 1	1	16 Jan 15	End cap
Ex 30594	1 of 1	1	16 Jan 15	Transmission shaft
Ex 30619	1 of 1	1	16 Jan 15	End cap
Ex 30620	1 of 1	1	16 Jan 15	End cap
Ex 30621	1 of 1	1	16 Jan 15	Transmission shaft
Ex 30640	1 of 1	1	16 Jan 15	Bracket
Ex 40784	1 of 1	1	16 Jan 15	End cap
Ex 40785	1 of 1	1	16 Jan 15	Buffer fixed plate
Ex 40786	1 of 1	1	16 Jan 15	Glass window fixed sheet (iron)
Ex 40787	1 of 1	1	16 Jan 15	Plastics gasket
Ex 40788	1 of 1	1	16 Jan 15	Nameplate
Ex 40789	1 of 1	1	16 Jan 15	Warning label – no manual override
Ex 40790	1 of 1	1	16 Jan 15	PE label for ground
Ex 40804-4	1 of 1	1	16 Jan 15	Ex plug (M20)
Ex 40804-3	1 of 1	1	16 Jan 15	Ex plug (M25)
Ex 40804-2	1 of 1	1	16 Jan 15	Ex plug (NPT 1/2")

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Certificate Annexe



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Equipment: SE Series Explosion-Proof Spring Return Actuators

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

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
Ex 40804-1	1 of 1	1	16 Jan 15	Ex plug (NPT 3/4")
Ex 40980	1 of 1	1	16 Jan 15	Warning label
Ex 41570	1 of 1	1	16 Jan 15	Glass window

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
Ex 42383	1 of 1	-	08 Jul 15	Nameplate

Issue 2

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
Ex 20251-1	1 of 1	1	11 Sep 16	Main Housing (NPT 3/4")
Ex 20251-2	1 of 1	1	11 Sep 16	Main Housing (NPT 1/2")
Ex 20251-3	1 of 1	1	11 Sep 16	Main Housing (M25)
Ex 20251-4	1 of 1	1	11 Sep 16	Main Housing (M20)
Ex 20252-1	1 of 1	1	11 Sep 16	Main Housing (NPT 3/4")
Ex 20252-2	1 of 1	1	11 Sep 16	Main Housing (NPT 1/2")
Ex 20252-3	1 of 1	1	11 Sep 16	Main Housing (M25)
Ex 20252-4	1 of 1	1	11 Sep 16	Main Housing (M20)
Ex 20253-1	1 of 1	1	11 Sep 16	Main Housing (NPT 3/4")
Ex 20253-2	1 of 1	1	11 Sep 16	Main Housing (NPT 1/2")
Ex 20253-3	1 of 1	1	11 Sep 16	Main Housing (M25)
Ex 20253-4	1 of 1	1	11 Sep 16	Main Housing (M20)
Ex 42383	1 of 1	1	04 Oct 16	Nameplate

Issue 3

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
Ex 20211	1 of 1	2	05 Mar 19	Top Cover
Ex 20230	1 of 1	2	05 Mar 19	Top Cover
Ex 20247	1 of 1	2	05 Mar 19	Top Cover
Ex 40804-1	1 of 1	4	05 Mar 19	Ex plug (NPT 3/4")
Ex 40804-2	1 of 1	4	05 Mar 19	Ex plug (NPT 1/2")
Ex 42383	1 of 1	2	05 Mar 19	Nameplate
Ex 40789	1 of 1	2	05 Mar 19	Nameplate
Ex 40980	1 of 1	2	05 Mar 19	Nameplate
QW-10-10	1 to 11	2	05 Mar 19	Explosion-proof Spring-Return and Quarter-Turn actuator adhesive instruction

Issue 4. No new drawings were introduced.

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Certificate Annexe



Certificate Number: Sira 14ATEX1307X

Equipment: SE Series Explosion-Proof Spring Return Actuators

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

Issue 5

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
Ex 10075	1 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10075	2 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10075	3 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10076	1 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10076	2 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10076	3 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10077	1 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10077	2 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 10077	3 of 3	2	10 Jun 20	Explosion proof spring return actuator
Ex 42383	1 of 1	3	07 Aug 20	Nameplate

Issue 6

Drawing	Sheets	Rev.	Date (Stamp)	Title
Ex 20672-1/2	1 to 2	1	15 Sep 22	Manual Override for SE series
Ex 20673-1/2	1 to 2	1	15 Sep 22	Manual Override for SE series
Ex 20674-2/2	1 to 2	1	15 Sep 22	Manual Override for SE series
Ex 42383	1 to 1	1	15 Sep 22	Nameplate

Issue 7

Drawing	Sheets	Rev.	Date (Stamp)	Title
Ex10075	1 to 3	3	20 Dec 23	SE-500 Series Explosion-proof Spring Return Actuator Assembly Drawing
Ex10076	1 to 3	3	20 Dec 23	SE-1300 Series Explosion-proof Spring Return Actuator Assembly Drawing
Ex10077	1 to 3	3	20 Dec 23	SE-2000, SE-2600 Series Explosion-proof Spring Return Actuator Assembly Drawing
Ex42383	1 of 1	8	25 Dec 23	SE Series Explosion-proof Spring Return Actuator Nameplate (With non-electrical gear box)
Ex44784	1 of 1	1	25 Dec 23	SE Series Explosion-proof Spring Return Actuator Nameplate (Without non-electrical gear box)
Ex40980	1 to 1	3	20 Dec 23	SE-500 Series Explosion-proof Spring Return Actuator Warning label
Ex40789	1 to 1	3	20 Dec 23	SE-500 Series Explosion-proof Spring Return Actuator Warning label-without manual Override
Ex30512	1 to 1	2	20 Dec 23	SE-500 Series Explosion-proof Spring Return Actuator Transmission shaft
Ex30514	1 to 1	2	20 Dec 23	SE-500 Series Explosion-proof Spring Return Actuator Plate
Ex30515	1 to 1	2	20 Dec 23	SE-500 Series Explosion-proof Spring Return Actuator End cap
Ex30594	1 of 1	2	20 Dec 23	SE-1300 Series Explosion-proof Spring Return Actuator Transmission shaft
Ex30621	1 to 1	2	20 Dec 23	SE-2000, 2600 Series Explosion-proof Spring Return Actuator Transmission shaft
RD20130620003	1 to 5	C	26 Dec 23	SE Series Explosion-proof Spring Return Actuator Product Description

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