



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 12ATEX1142X** Issue: **5**

4 Equipment: **SOLDO™ Limit Switch Box, types SX and SH**

5 Applicant: **Rotork Instruments Italy srl**

6 Address: **Via Portico 17, 24050, Orio al Serio (BG), Italy**

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

8 Sira Certification Service, notified body number 0518 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 60079-0:2012/ A11:2013 EN 60079-1:2014 EN 60079-31:2014

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

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:

Type SX Series:



II 2GD
Ex db IIB T*
Ex tb IIIC T* Db

Type SH Series:



II 2GD
Ex db IIB + H₂ T*
Ex tb IIIC T* Db

* The temperature class and assigned maximum surface temperature for dust depends on the ambient range as follows:

| Temperature Class | T4 | T5 | T6 |
|---------------------|-----------------|----------------|----------------|
| Ambient Range | -20°C to +105°C | -20°C to +75°C | -20°C to +60°C |
| Surface temperature | T135°C | T100°C | T85°C |

The low ambient temperature may be reduced to -40°C if routine overpressure tested accordingly; refer to Conditions of Certification Section 17.

Project Number 70117825

R A Craig
Certification Support Officer

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Sira Certification Service

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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

**Sira 12ATEX1142X
Issue 5**

13 **DESCRIPTION OF EQUIPMENT**

SX and SH series Switch Boxes are flameproof enclosures, which are provided with switches or similar equipment, indicating the position of the shaft. The boxes are additionally provided with a visual position indicator, controlled by an extension of the shaft.

The enclosures are made of aluminium and the two main parts of the enclosure are secured by four M8 hexagon socket fasteners; the two parts form a flanged joint with a recess for the fitting of an O-ring. The position indicator is situated on a shaft which passes through the enclosure via a bronze bush forming a cylindrical joint in the main body and the cover.

The SX series is permitted for use in group IIB whilst the SH series is permitted for use in group IIB + H₂.

Rating

Max Voltage 250 Vac/125 Vdc

Max Current 10A

Maximum internal power dissipation: 10 W

External source of heating, temperature rating for both models is detailed as follows:

Max temperature is 105°C, 75°C, or 60°C, depending on the applied T-class; T4, T5, or T6 respectively.

Variation 1 - This variation introduced the following change:

- i. The introduction of the alternative material, sintered bronze, for the shaft bushing fitted in the cover and body.

Variation 2 - This variation introduced the following change:

- i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the standards previously listed in section 9, EN 60079-0:2009, EN 60079-1:2007 and EN 60079-31:2009, were replaced by EN 60079-0:2012/A11:2013, EN 60079-1:2014 Ed. 7, and EN 60079-31:2014, the markings in section 12 were updated accordingly.

Variation 3 - This variation introduced the following change:

- i. A typographical correction to the dated standard, EN 60079-1 (amended from EN 60079-1:2007 to EN 60079-1:2014) in the Conditions of Manufacture was recognised.
- ii. Removal of the following previous scheduled certification name plate drawings that are no longer required to support production and are only retained for reference:

| Drawing | Rev. | Title |
|---------------|------|------------------------|
| SD-0211003-07 | 7 | SX Metal Plate IP66-67 |
| SD-0211004-05 | 5 | SH Metal Plate IP66-67 |

Variation 4 - This variation introduced the following changes:

- i. The Applicants name and address were changed as follows:

| | |
|---------------------------------|------------------------------|
| From: | To: |
| Soldo srl | Rotork Instruments Italy srl |
| Via Monte Baldo 60 | Via Portico 17 |
| 25015 | 24050 |
| Desenzano del Gards (BS), Italy | Orio al Serio (BG), Italy |

- ii. SOLDOTM was introduced to the front of the equipment name in Section 4.

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iii. The introduction of an alternative manufacturing location at Fairchild Industrial Products Co., 3920 West Point Blvd., Winston-Salem, North Carolina 27103, USA was recognised,

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

| Issue | Date | Report no. | Comment |
|-------|---------------|--------------------------|--|
| 0 | 29 June 2012 | R27336A/00 | The release of the prime certificate. |
| 1 | 10 April 2014 | R31186A/00 | The introduction of Variation 1. |
| 2 | 13 May 2014 | R31186A/01 | Report R31186A/00 was replaced by R31186A/01. |
| 3 | 13 May 2015 | R70025632 | The introduction of Variation 2. |
| 4 | 29 June 2016 | R70072567A | 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 3. |
| 5 | 24 March 2017 | R70117825A R70126567A | The introduction of Variation 4. |

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

15.1 When units are fitted with a non-conducting position indicator, this could potentially generate an ignition-capable level of electrostatic charges under certain extreme conditions. Therefore, these units shall not be installed in a location where they may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on the non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.

15.2 The flamepaths for the SH and SX series are the same and all the dimensions of the flamepath joints are detailed below, in some cases, the values differ from the relevant minimum or maximum required by table 1 (for IIB) or table 2 (for IIB + H₂) of EN 60079-1:

| Flamepath description | Type of Joint | Minimum Width 'L' (mm) | Maximum Gap i _c (mm) |
|-----------------------|---------------|------------------------|---------------------------------|
| Enclosure to cover | Flanged | 12.5 | 0.10 |
| Shaft in enclosure | Cylindrical | 25 | 0.079 |

Gaps shall not be machined to be any larger than the values of 'i_c', and widths shall not be modified to be any smaller than the values of 'L', shown in the table above.

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- 15.3 Special fasteners shall have yield strength of at least 450 Nm/mm² and shall be of a property class of at least 'A2'.
- 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 Sira Certificates.
- 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 Enclosures marked with a low ambient of -40°C shall be subjected to a routine overpressure test for at least 10 s at a pressure of 13.7 bar, in accordance with EN 60079-1:2014, clause 16. There shall be no leakage through the enclosure walls or permanent deformation/damage to the enclosure itself. Enclosures marked with a low ambient down to -20°C do not require routine overpressure testing.
- 17.4 The power dissipation inside the flameproof enclosure must not exceed 10 W.

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Certificate Annexe



Certificate Number: Sira 12ATEX1142X
Equipment: SOLDO™ Limit Switch Box, types SX and SH
Applicant: Rotork Instruments Italy srl

Issue 0

| Drawing | Sheets | Rev. | Date (Sira Stamp) | Title |
|----------------|--------|------|-------------------|-------------------------------------|
| SD0202060-00 | 1 of 1 | 0 | 15 Jun 12 | Switch Box SX SH Cover |
| SD0201065-00 | 1 of 1 | 0 | 15 Jun 12 | Switch Box Body SX SH |
| SD0204039_00 | 1 of 1 | 0 | 15 Jun 12 | Stelo Corpo Box SX SH |
| SD0204040-00 | 1 of 1 | 0 | 15 Jun 12 | Perno Lato Coperchio Box Mod. SX SH |
| SD0208010-00 | 1 of 1 | 0 | 15 Jun 12 | Screw Box SX SH |
| SD-0211003-07* | 1 of 1 | 7 | 15 Jun 12 | SX Metal Plate IP66-67 |
| SD-0211004-05* | 1 of 1 | 5 | 15 Jun 12 | SH Metal Plate IP66-67 |
| SD0250020_01 | 1 of 1 | 1 | 15 Jun 12 | SX-SH assembly view |
| SL-0207008-02 | 1 of 1 | 2 | 15 Jun 12 | Guarnizione corpo SX |
| SR020719-00 | 1 of 1 | 0 | 15 Jun 12 | O-ring shaft |

*Drawing no longer required, refer to Variation 3.

Issue 1

| Drawing | Sheets | Rev. | Date (Sira stamp) | Title |
|---------------|--------|------|-------------------|-------------------------------------|
| SD-0201127-00 | 1 of 1 | 0 | 11 Feb 14 | SWITCH BOZ BODY SX SH |
| SD-0202088-00 | 1 of 1 | 0 | 11 Feb 14 | Switch box SX-SH cover |
| SD-0204180-00 | 1 of 1 | 0 | 11 Feb 14 | Stelo corpo box SX SH |
| SD0204181-00 | 1 of 1 | 0 | 11 Feb 14 | Perno lato coperchio box mod. SX SH |
| SD0250047_00 | 1 of 1 | 0 | 11 Feb 14 | SX-SH assembly view |

Issue 2 - (No new drawings were introduced.)

Issue 3

| Drawing | Sheets | Rev. | Date (Sira stamp) | Title |
|---------------|--------|------|-------------------|------------------------|
| SD-0211003-08 | 1 of 1 | 08 | 05 May 15 | SX Metal Plate IP66-67 |
| SD-0211004-06 | 1 of 1 | 06 | 05 May 15 | SH Metal Plate IP66-67 |

Issue 4 - (No new drawings were introduced.)

Issue 5

| Drawing | Sheets | Rev. | Date (Sira stamp) | Title |
|---------------|--------|------|-------------------|---|
| SD-0211003-09 | 1 of 1 | 09 | 08 Feb 17 | SX metal plate IP66-67 ATEX-IECEX certification |
| SD-0211004-07 | 1 of 1 | 07 | 08 Feb 17 | SH metal plate IP66-67 ATEX-IECEX certification |

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