



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

Certificate No.: **IECEX SIR 12.0055X** issue No.:5

Status: **Current**

Date of Issue: **2017-03-24** Page 1 of 5

Certificate history:
Issue No. 5 (2017-3-24)
Issue No. 4 (2016-6-29)
Issue No. 3 (2015-6-5)
Issue No. 2 (2014-5-13)
Issue No. 1 (2014-4-25)
Issue No. 0 (2012-6-29)

Applicant: **Rotork Instruments Italy srl**
Via Portico 17
24050
Orio al Serio (BG)
Italy

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

Type of Protection: **Flameproof and Dust Ignition Protection by Enclosure "t"**

Marking: **Type SX Series:**
Ex db IIB T*
Ex tb III C T* Db
Type SH Series:
Ex db IIB + H2 T*
Ex tb III C T* Db
* The temperature class and assigned maximum surface temperature for dust depends on the ambient range as follows:

Temp. Class	T4	T5	T6
Surface temp.	T135°C	T100°C	T85°C
Ambient Range	-20°C to +105°C	-20°C to +75°C	-20°C to +60°C

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

Approved for issue on behalf of the IECEx Certification Body: **R A Craig**

Position: **Certification Support Officer**

Signature: *(for printed version)*

Date: **2017-03-24**

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:
SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom





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Manufacturer: **Rotork Instruments Italy srl**
Via Portico 17
24050
Orio al Serio (BG)
Italy

Additional Manufacturing location(s):

**Fairchild Industrial
Products Co.**
3920 West Point Blvd.
Winston-Salem
North Carolina 27103
United States of America

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 electrical 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2013 Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*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:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/SIR/ExTR12.0155/00
GB/SIR/ExTR15.0144/00
GB/SIR/ExTR17.0051/00

GB/SIR/ExTR14.0095/00
GB/SIR/ExTR16.0158/00

GB/SIR/ExTR14.0095/01
GB/SIR/ExTR17.0018/00

Quality Assessment Report:

GB/ITS/QAR09.0004/01

GB/SIR/QAR09.0003/05



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

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
See EQUIPMENT (continued) for additional description.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 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.
- 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 IEC 60079-1:

Flamepath description	Type of Joint	Minimum Width 'L' (mm)	Maximum Gap ic (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 'ic', and widths shall not be modified to be any smaller than the values of 'L', shown in the table above.
- Special fasteners shall have yield strength of at least 450 Nm/mm² and shall be of a property class of at least 'A2'.



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EQUIPMENT(continued):

Ratings

Max Voltage 250 Vac/125 Vdc

Max Current 10 A

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.

Conditions of manufacture

The Manufacturer shall comply with the following:

1. 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 IEC 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.
2. The power dissipation inside the flameproof enclosure must not exceed 10 W.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 – this Issue introduced the following change:

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

Issue 2 – this Issue introduced the following change:

1. ExTR number GB/SIR/ExTR14.00965/00 was replaced by GB/SIR/ExTR14.0095/01.

Issue 3 – this Issue introduced the following change:

1. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the standards previously listed IEC 60079-1:2007-04 Ed.6 and IEC 60079-31:2008 Ed.1, were replaced by IEC 60079-1:2014-06 Ed. 7 and IEC 60079-31:2013-11 Ed 2, the markings were updated accordingly.

Issue 4 – this Issue introduced the following change:

1. A typographical correction to the dated standard, IEC 60079-1 (amended from IEC 60079-1:2007 IEC 60079-1:2014) in the Conditions of Manufacture was recognised
2. 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

Issue 5 – this Issue introduced the following changes:

1. The Applicant and Manufacturers 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)	Orio al Serio (BG)
Italy	Italy
2. SOLDOTM was introduced to the front of the equipment name on page 1.
3. The introduction of an alternative manufacturing location at Fairchild Industrial Products Co., 3920 West Point Blvd., Winston-Salem, North Carolina 27103, USA was recognized.