



## EU-TYPE EXAMINATION CERTIFICATE

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

Certificate Number: **Sira 15ATEX1119X** Issue: **9**

Equipment: **The SI3 and SI4, Skilmatic Range of Electro-Hydraulic Control Modules**

Applicant: **Rotork UK Ltd.**

Address: **9 Brown Lane West  
Holbeck  
Leeds LS12 6BH  
UK**

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

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.

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/COR1:2018 | EN IEC 60079-7:2015/A1 (2018) |
| EN ISO 80079-36:2016 | EN ISO 80079-37:2016      |                               |

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.

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.

The marking of the equipment shall include the following:



II 2G

Ex db ① h IIB T4 Gb IP66/68② or

Ex db ① h IIC T4 Gb IP66/68②

① "eb" added on versions with increased safety terminal enclosure

② Only IP64 is endorsed by Sira on this certificate

(-③°C to +④°C)

③down to -50°C, ④up to 70°C (Configuration 1 – IIB & IIC)

③down to -50°C, ④up to 70°C (Configuration 2 – IIB)

③down to -20°C, ④up to 70°C (Configuration 2 – IIC)

Signed: Michelle Halliwell

Title: Director of Operations



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## SCHEDULE

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#### 13 DESCRIPTION OF EQUIPMENT

The SI3 and SI4, Skilmatic Range of Electro-Hydraulic Control Modules for use with either an optional Power Module or a suitably approved third party motor and hydraulic pump <sup>[Note 1]</sup>, which can be instantaneously switched to increase or decrease the hydraulic pressure to a suitable spring return or double acting, linear or quarter-turn actuator.

The Control Module consists of an electrical and terminal enclosure, with a hydraulic manifold.

The electrical enclosure has been designed to meet the requirements of the flameproof type of protection, and is formed by the main centre housing, hydraulic manifold, electrical cover with a display window, indication cover and blanking covers or the optional Power Module, all of which form flameproof spigot joints with the centre housing. The electrical enclosure may contain the following equipment: user-interface PCB (incl. Bluetooth radio module), control PCB, power PCB, adaptor PCB, transformer, solenoid valve coils/bodies, pressure transducer bodies, up to four mechanical or proximity limit switches and operating cams and up to four option PCB's for ESD functions, device drivers or network communication.

The terminal enclosure connects to the electrical enclosure via the centre housing, their volumes being separated by a flameproof terminal bung. The flameproof terminal bung comprises a moulded plastic main body through which pass a number of terminals which are sealed in place with a potting compound. The terminal bung is secured in position by means of a circlip. In this form, the terminal enclosure meets the requirements of increased safety type of protection and only provides electrical field wiring terminations, all of which are at the terminal bung. However, the flameproof terminal bung may be replaced with a non-flameproof version, in which case the electrical and terminal compartments are considered as one flameproof enclosure closed by means of a cover, which connects to the centre housing by means of a tapered spigot flameproof joint.

Cable entry facilities are provided in the form of five threaded entries.

All external fasteners are stainless steel, grade A4-80 socket cap head screws.

There are two basic hydraulic manifold configurations providing different functionality depending on the number and type (normally open or normally closed), of solenoid valves and pressure transducers fitted.

##### Configuration 1

- Two solenoid valves and one pressure transducer.
- Three solenoid valves and one pressure transducer.

##### Configuration 2

- Three solenoid valves and two pressure transducers.
- Four solenoid valves and two pressure transducers.

Additional hydraulic manifold circuit configurations are permitted, provided the required functionality can be achieved using the basic manifold, solenoid and pressure transducer configurations 1 and 2 above.

The hydraulic circuits are separated from the electrical enclosure by threaded flameproof joints between the solenoid valve and pressure transducer bodies and the hydraulic manifold, which connects to the main centre housing by a flameproof tapered spigot joint to form part of the flameproof electrical enclosure.

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The optional Power Module consists of a motor enclosure and hydraulic fluid reservoir which also contains the hydraulic pump, the motor enclosure and reservoir are connected by the motor/pump housing. The motor enclosure contains a motor fitted with thermal protection devices and connects to the motor/pump housing by means of a flameproof cylindrical spigot joint. The motor shaft forms a cylindrical flameproof joint through the motor pump housing and connects to the hydraulic pump in the reservoir via an oldham coupling. The hydraulic pump is not considered a source of ignition and the reservoir is not considered as part of the flameproof enclosure.

When the optional Power Module is mounted locally the electrical and motor enclosures are separated by a potted line bush that forms a cylindrical flameproof joint with the motor pump housing. When the Power Module is remotely mounted or a third party motor and pump is used <sup>[Note 1]</sup> the connection is via additional cable entries in the blanking covers fitted with suitably approved cable entry devices.

The following basic configurations are included.

The table below shows the possible build arrangements for each model:

| Model No. | Manifold Configuration | Power Module (Local) | Power Module (Remote) | Third Party Motor / Pump |
|-----------|------------------------|----------------------|-----------------------|--------------------------|
| SI3       | 1                      | Yes                  | No                    | No                       |
| SI3       | 1                      | No                   | Yes                   | No                       |
| SI3       | 1                      | No                   | No                    | Yes                      |
| SI4       | 1                      | Yes                  | No                    | No                       |
| SI4       | 1                      | No                   | Yes                   | No                       |
| SI4       | 1                      | No                   | No                    | Yes                      |
| SI4       | 2                      | Yes                  | No                    | No                       |
| SI4       | 2                      | No                   | Yes                   | No                       |
| SI4       | 2                      | No                   | No                    | Yes                      |

**Note 1:** The utilisation of or a third party motor and hydraulic pump is outside the scope of this approval.

**Variation 1** - This variation introduced the following changes:

- The introduction of alternative motor types for the 24 Vdc, single phase and three phase versions.
- Modifications to the 'k' and 'm' dimensions associated with the motor shaft flamepaths.
- Drawing amendments to address the above modifications, and certain other minor modifications

**Variation 2** - This variation introduced the following changes:

- Introduction of the alternate DC motor cover, part number 10164.
- Typographical correction of the manufacturing process of the DC motor cover, part number 10527.

**Variation 3** - This variation introduced the following changes:

- Introduction of the Type SI4 Skilmatic Range of Electro-Hydraulic Control Modules.
- Amend the type designation of the SI 3.3 to Type SI 3 Skilmatic Range of Electro-Hydraulic Control Modules, and the Condition of Manufacture were amended to recognise the new designations.
- The introduction of amended flamepath dimension for gas group IIB applications.

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- iv. Company name change. From Rotork Fluid Systems (A division of Rotork UK Ltd)' to 'Rotork (UK) Ltd.
- v. Amendments to various approval drawings.
- vi. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012, EN 60079-1:2014, EN 60079-7:2007, EN 13463-1:2009 and EN 13463-5:2011 were replaced by EN IEC 60079-0:2018, EN 60079-1:2014/COR1:2018, EN IEC 60079-7:2015/A1 (2018) EN ISO 80079-36:2016 and EN ISO 80079-37:2016, the markings in section 12 were updated.

**Variation 4** - This variation introduced the following changes:

- i. Addition of an alternative terminal cover P/N 100561 manufactured in aluminium alloy BS 1490 LM25TF.
- ii. Introduce additional exemptions from routine overpressure testing.
- iii. Clarification of requirements relating to fastener strength, leading to the introduction of related Specific Conditions of Use, and Conditions of Manufacture.
- iv. Correction to tabulated Routine Test requirements as required.

**Variation 5** - This variation introduced the following changes:

- i. To introduce the following alternative part numbers for manifold configuration 1:
  - 2024948-C1 is an alternative to HPU-1343-C1
  - 2024948-C2 is an alternative to HPU-1343-C2
- ii. Removal of the Rochester site on certificates and drawing 2036223.
- iii. Change to the flash testing note on the drawing 2031357.

**Variation 6** - This variation introduced the following changes:

- i. Addition of alternate pressure transducers - 2058621, 2058815, 2059497 & 2059498.
- ii. Addition of an alternate manifold indication shaft – 2043957.

**Variation 7** - This variation introduced the following changes:

- i. Addition of alternate manifold (2060241) for Manifold Configuration 2.
- ii. Addition of alternative NPT pressure transducers.
- iii. Removal of unnecessary pressure transducers.
- iv. Addition of EMC filter to 24Vdc variants.
- v. Addition of alternate DC motor variant.
- vi. Corrections to the tabulated routine test requirements to address historical typographical errors and make amendments for clarity.

**Variation 8** - This variation introduced the following changes:

- i. Addition of Alternative indication covers (blank and with Beacon)
- ii. Addition of Alternative Centre housing
- iii. Addition of Alternative Motor/Pump Housing
- iv. Addition of Alternative Solenoid valve body variant.

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#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Reports and Certificate History

| Issue | Date             | Report number | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------|------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0     | 13 August 2015   | R70005452A    | The release of the prime certificate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1     | 28 July 2016     | R70074942A    | This Issue covers the following changes: <ul style="list-style-type: none"><li>EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(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.)</i></li><li>The introduction of Variation 1.</li></ul> |
| 2     | 24 October 2016  | R70101920A    | The introduction of Variation 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3     | 14 June 2019     | R70209670A    | The introduction of Variation 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4     | 22 August 2019   | R80009871A    | The introduction of Variation 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 5     | 15 October 2019  | 1139          | Transfer of certificate Sira 15ATEX1119X from Sira Certification Service to CSA Group Netherlands B.V.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6     | 19 August 2021   | R80069555A    | The introduction of Variation 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7     | 14 October 2021  | R80099453A    | The introduction of Variation 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8     | 16 June 2022     | R80117726A    | The introduction of Variation 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9     | 07 November 2023 | R80139899A    | The introduction of Variation 8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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

- 15.1. This equipment shall be installed such that the risk of impact to the window is low.
- 15.2. This equipment includes some external non-metallic parts, including the outer protective coating. The user shall therefore ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
- 15.3. The equipment utilises A4-80 fasteners, if these are changed they shall only be replaced by A4-80 fasteners.
- 15.4. With reference to clause 5.1 of EN 60079-1:2014 - The flamepaths associated with this equipment are not to be repaired.
- 15.5. When covers are removed and replaced, all cover securing fasteners must be tightened to 20 to 22 Nm.

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#### 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.

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 All cover securing fasteners to be tightened to between 20 and 22 Nm.

17.4 When the terminal enclosure is intended to conform with the requirements of increased safety type of protection, the following electrical strength tests shall be applied to the termination facilities for at least 60 s and no more than 63 s as required by EN 60079-7 clause 6.1:

| Test Voltage Applied Between                         | AC Test Voltage       | DC Test Voltage |
|------------------------------------------------------|-----------------------|-----------------|
| Test between mains terminals and enclosure           | 2200 V <sub>RMS</sub> | 3100 Vdc        |
| Test between mains terminals and secondary terminals | 2200 V <sub>RMS</sub> | 3100 Vdc        |
| Test between secondary terminals and enclosure       | 1500 V <sub>RMS</sub> | 2100 Vdc        |

17.5 For 24 VDC equipment, the above test may be conducted with the DC power board located in the flame-proof electrical enclosure disconnected from the terminal bung.

17.6 The equipment requires a combination of routine overpressure tests and batch overpressure tests in accordance with the tables listed in the following drawings for the design option and ambient temperature range stated. In all cases the pressure shall be maintained for at least 10 seconds as required by EN 60079-1:2014, Clause 16. There shall be no permanent deformation, damage to the enclosure, or leakage.

For Main electrical and terminal enclosures (Control module):

Drawing: 2031357 Rev. 13-2, Tables 7 to 29.

For Power module (Motor module)

Drawing: HPU-A1111 Rev. 15-2

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# Certificate Annexe



**Certificate Number:** Sira 15ATEX1119X

**Equipment:** The SI3 and SI4, Skilmatic Range of Electro-Hydraulic Control Modules

**Applicant:** Rotork UK Ltd.

## Issue 0

| Drawing   | Sheets | Rev. | Date (Sira Stamp) | Title                                                          |
|-----------|--------|------|-------------------|----------------------------------------------------------------|
| HPU-A1106 | 1 to 8 | 05   | 06 Aug 15         | Certification Drawing, Control Module, ATEX & IECEx (SI-3.3/4) |
| HPU-A1111 | 1 to 4 | 04   | 04 Aug 15         | Certification Drawing, Power Module, ATEX & IECEx (SI3.3/4)    |
| HPU-A1324 | 1 of 1 | 02   | 13 Aug 15         | Certification Drawing, Assembly Configurations (SI 3.3/4)      |

## Issue 1

| Drawing   | Sheets | Rev. | Date(Sira stamp) | Title                                                         |
|-----------|--------|------|------------------|---------------------------------------------------------------|
| HPU-A1106 | 1 to 8 | 06   | 19 Jul 16        | Certification Drawing, Control Module, ATEX & IECEx (SI3.3/4) |
| HPU-A1111 | 1 to 4 | 07   | 19 Jul 16        | Certification Drawing, Power Module, ATEX & IECEx (SI3.3/4)   |

## Issue 2

| Drawing   | Sheets | Rev. | Date(Sira stamp) | Title                                                       |
|-----------|--------|------|------------------|-------------------------------------------------------------|
| HPU-A1111 | 1 to 4 | 8    | 07 Oct 16        | Certification Drawing, Power Module, ATEX & IECEx (SI3.3/4) |

## Issue 3

| Drawing     | Sheets | Rev. | Date(Sira stamp) | Title                                                                     |
|-------------|--------|------|------------------|---------------------------------------------------------------------------|
| 2031357     | 17     | 4-0  | 03 Jun 19        | SI3 & SI4 ATEX/IECEx Control Module                                       |
| 2036233     | 1      | 2-0  | 20 May 19        | SI3 & SI4 ATEX IECEx Labels                                               |
| HPU – A1111 | 4      | 10-0 | 03 Jun19         | Certification Drawing, Power Module, ATEX & IECEx                         |
| 2023399     | 1      | 0-0  | 20 May 19        | Procedure, loom transfer bush potting                                     |
| RS 308      | 2      | 9    | 20 May 19        | Potting procedure for CENELEC and ATEX term blocks / mtr looms / rhs loom |
| RS 448      | 2      | 1    | 20 May 19        | Window bonding procedure                                                  |

## Issue 4

| Drawing     | Sheets | Rev. | Date(Sira stamp) | Title                                             |
|-------------|--------|------|------------------|---------------------------------------------------|
| 2031357     | 17     | 6-0  | 21 Aug 19        | SI3 & SI4 ATEX/IECEx Control Module               |
| HPU – A1111 | 4      | 12-0 | 21 Aug 19        | Certification Drawing, Power Module, ATEX & IECEx |

**Issue 5.** No new drawings were introduced.

## Issue 6

| Drawing     | Sheets  | Rev. | Date (Stamp) | Title                                             |
|-------------|---------|------|--------------|---------------------------------------------------|
| 2031357     | 1 to 17 | 9-0  | 13 Aug 21    | SI3 & SI4 ATEX/IECEx Control Module               |
| HPU – A1111 | 1 to 4  | 12-0 | 04 Aug 21    | Certification Drawing, Power Module, ATEX & IECEx |
| 2036223     | 1 of 1  | 3    | 04 AUG 21    | SI3 & SI4 ATEX IECEx LABELS                       |

## Issue 7.

| Drawing | Sheets  | Rev. | Date (Stamp) | Title                               |
|---------|---------|------|--------------|-------------------------------------|
| 2031357 | 1 to 17 | 11-0 | 06 Oct 21    | SI3 & SI4 ATEX/IECEx CONTROL MODULE |

## Issue 8

| Drawing   | Sheets  | Rev. | Date (Stamp) | Title                                             |
|-----------|---------|------|--------------|---------------------------------------------------|
| 2031357   | 1 to 17 | 12-0 | 30 May 22    | SI3 & SI4 ATEX/IECEx CONTROL MODULE               |
| HPU-A1111 | 1 to 4  | 14-0 | 30 May 22    | Certification Drawing, Power Module, ATEX & IECEx |

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**Certificate Number:** Sira 15ATEX1119X

**Equipment:** The SI3 and SI4, Skilmatic Range of Electro-Hydraulic Control Modules

**Applicant:** Rotork UK Ltd.

## Issue 9

| Drawing   | Sheets  | Rev. | Date (Stamp) | Title                                           |
|-----------|---------|------|--------------|-------------------------------------------------|
| 2031357   | 1 to 21 | 13-2 | 20 Oct 23    | SI3 & SI4 ATEX/IECEX Control Module             |
| HPU-A1111 | 1 to 5  | 15-2 | 20 Oct 23    | Certification Drawing, Power Module, ATEX/IECEX |
| 2036223   | 1 of 1  | 4-0  | 20 Oct 23    | SI3 & SI4, ATEX IECEX Labels                    |

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