



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 08ATEX2054X** Issue: **0**

4 Equipment: **WiFi Encoders and Sensors**

5 Applicant: **Hohner Automation Limited**

6 Address: Units 14-16  
Whitegate Industrial Estate  
Wrexham LL13 8UG  
UK

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 Article 9 of Directive 94/9/EC of 23 March 1994, 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 60079-0:2006

EN 60079-11:2007

EN 60026:2007

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC 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:



II 1G

Ex ia IIC T4 Ga (Ta = -20°C to +49°C)

Project Number 52L16733  
C. Index 12

C Ellaby  
Certification Officer

This certificate and its schedules may only be reproduced in its entirety and without change.



## SCHEDULE

### EC TYPE-EXAMINATION CERTIFICATE

Sira 08ATEX2054X  
Issue 0

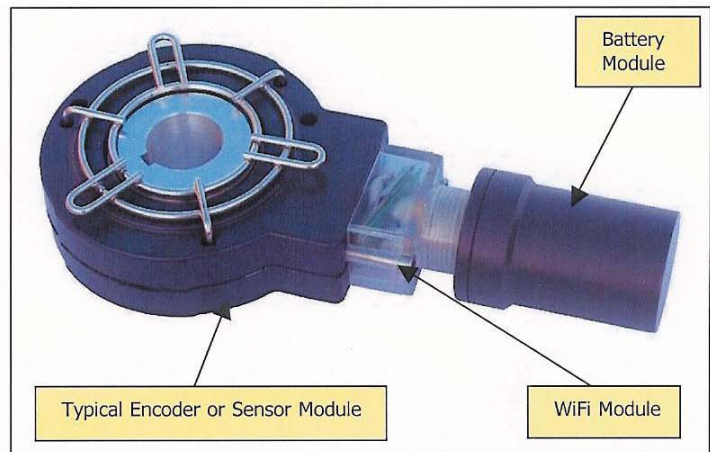
#### 13 DESCRIPTION OF EQUIPMENT

The Hohner WiFi Shaft Encoder/Sensor Assemblies consist of three main sections:

- Battery module
- WiFi transmitter module
- Shaft Encoder/Sensor module

The Shaft Encoder/Sensor module can be one of six different types:

- 7-Bit Absolute Encoder (Series FPX)
- 10-Bit Absolute Encoder (Series 08)
- Incremental Shaft Encoder (Various types)
- Multi-turn Shaft Encoder (Series 03)
- Fluid Sensor (Series E5Y)
- Fuel Sensor (Series E5X)



The principal function of the Encoder/Sensor assemblies is to provide wireless transmission of data between the unit and a local receiver fitted in the safe area. The assemblies use the IEEE 802.15 protocol at a frequency between 2.4 to 2.527 GHz to transmit data wirelessly in binary packets at a data rate of 250 kbs.

Every time the encoder shaft moves, a pulse edge triggers a data transmission to the distant module. Data is read 100 times per second. If the incremental encoder spins to fast, the data transmission jumps from one counter content to another. Every data transmission contains the full 16-bit counter value.

The diagram above shows the typical layout of the complete assembly:

The encoder/sensor module electronics are housed in a range of metallic enclosures with various dimensions and shaft sizes/orientations. The WiFi Module is housed in a MAKROLON® 2405, 2407 or 2456 plastic enclosure to permit radio signal interfacing and the battery module enclosure is constructed from either aluminium or stainless steel.

The encoder/sensor enclosures are generically defined and may vary in size. The general arrangement drawings (one for each generic type) are considered to have a minimum ingress protection rating of IP20 with the majority of enclosures providing a minimum of IP65. Furthermore, there are limits on the total amounts of magnesium, aluminium, titanium and zirconium as required by IEC 60079-0:2004.



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**14 DESCRIPTIVE DOCUMENTS**

**14.1 Drawings**

Refer to Certificate Annexes.

**14.2 Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	10 June 2008	R52L16733A	The release of the prime certificate.

**15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)**

15.1 The enclosure of the WiFi module is manufactured from plastics materials. Under certain extreme circumstances, such parts may generate an ignition-capable level of electrostatic charge. Therefore, the encoder shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces, particularly when it is used for zone 0 applications. Additionally, the equipment shall only be cleaned with a damp cloth.

15.2 As aluminium is used at the accessible surface of this equipment, ignition sources due to impact and friction sparks could occur, this shall be taken into account during the installation of the equipment.

**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 CERTIFICATION**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The maximum temperature of the shaft seal of each Shaft Encoder/Sensor Assembly shall be determined at the maximum operating speed and ambient temperature, this is to ensure that the T4 temperature class (135°C) will not be exceeded during field operation.