



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 18ATEX1244X** Issue: **4**

4 Equipment: **4003 Magnetic PIG Signaller or SPI-MAG 403 Non-Intrusive Scrapper Passage Indicator**

5 Applicant: **Online Electronics Ltd.**

6 Address: **Online House, Blackburn Business Park,
Woodburn Road, Aberdeen,
Aberdeenshire AB21 OPS, UK**

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/AC:2020-02 EN 60079-1:2014 EN 60079-11:2012

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:

When no IS remote sensor and no IS relay circuit connected



II 2 G
Ex db IIC T* Gb
Ta* = -50°C ≤ Ta ≤ +85°C

When IS relay circuit connected



II 2 (1) G
Ex db [ia Ga] IIC T* Gb
Ta* = -50°C ≤ Ta ≤ +85°C

Where there is a remote IS sensor and has IS relay circuit connected



II 1/2(1) G
Ex db ia [ia Ga] IIC T* Gb/Ga
Ta* = -50°C ≤ Ta ≤ +85°C

* Refer to Specific Conditions of Use for applicable temperate class and ambient temperature range.



Signed: M Halliwell

Title: Director of Operations

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13 DESCRIPTION OF EQUIPMENT

Entity Parameters: Ui: 30 V, Ii: 1 A, Pi: any, Ci: 0 F, Li: 0 H (for IS interface to relay)

The Online 4003 PIG Signaller is a non-intrusive magnetic pig signaller which detects, signals, and logs the passage of magnetic pigs along a pipeline. A separate intrinsically safe sensor may also be used which is external to the housing. Events are signalled as they occur via an OLED dot matrix display and indication LEDs positioned around the perimeter of the display. Logged events can be viewed locally on the dot matrix display and/or transmitted remotely over several optional interfaces.

The 4003 can be powered from internal batteries or from an external +30 VDC supply. Batteries can be fitted to provide backup power should the external supply fail. The 4003 uses either 4 off individual 'D' sized cells which can either all be Alkaline primary cells or NiMH secondary cells. The 4003 also caters for 2 off Lithium primary cells, this option being configured at manufacture.

The 4003 can be supplied with an Aluminium housing model XIHNFSGCX or with a Stainless steel housing model XIHNSFGCX by Adalet certified under DEMKO 07ATEX062294U and IECEx UL 08.0005U. Both options come with 3 off Metric, NPT or NPSM entries with suitably certified blanking elements installed. Certified adaptors are used for other thread types.

The Adalet enclosures are certified under the certificates and the standards applicable to this equipment certification as identified below. No applicable technical differences were found as part of a study of differences.

Adalet enclosure	
IECEX CoC and Standards	IECEX UL 08.0005U, issue 6; IEC 60079-0:2011 Ed. 6.0, IEC 60079-1:2014 Ed. 7.0
ATEX certificate and Standards	DEMKO 07 ATEX 0622294U, Rev. 3; EN 60079-0:2012+A11:2013, EN 60079-1:2014

The 4003 can optionally be supplied with an Aluminium housing: model XD-120win by Limatherm certified under FTZU 08ATEX018U and IECEx FTZU 11.0012U or with a Stainless steel housing: model XD-S120win by Limatherm certified under KDB 13ATEX0012U and IECEx KDB 13.0006U. Both options come with 3 off Metric or NPT entries with suitably certified blanking elements installed. Certified adaptors are used for other thread types.

Ratings

Externally Powered Variant:

Standard

Voltage: 30 VDC

Power: 1 W

Remote Communications

Voltage: 30 VDC

Power: 5 W

Internal Anti-Condensation Heater

Voltage: 30 VDC

Power: 10 W

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Internally Powered Variant:

Duracell Industrial ID1300 (Primary)

Voltage: 6.0 VDC
Current: 2000 mA
Capacity: 18 Ah
Power: ≤ 5 W

Duracell Industrial PC1300 (Primary)

Voltage: 6.0 VDC
Current: 1000 mA
Capacity: 17 Ah
Power: ≤ 5 W

Energizer Industrial (Primary)

Voltage: 6.0 VDC
Current: 500 mA
Capacity: 16 Ah
Power: ≤ 5 W

Saft LS33600 (Primary)

Voltage: 7.2 VDC
Current: 250 mA
Capacity: 17 Ah
Power: ≤ 5 W

ANSMANN MaxE D (Secondary)

Voltage: 5.2 VDC
Current: 8000 mA
Capacity: 8.5 Ah
Power: ≤ 5 W

Variation 1 - This variation introduced the following changes:

- i. Introduction of alternate component certified enclosure Limatherm XD-120win and XD-S120win, with operating range -50°C to $+85^{\circ}\text{C}$ and reduce the maximum ambient temperature to $+85^{\circ}\text{C}$ for the existing models. Markings updated accordingly.
- ii. Introduction of alternate batteries Duracell PC1300 and Energizer EN95.
- iii. Introduction of Ex db IIC T* Gb version; which includes assessment of interface to allow for other non-is remote sensors not assessed under this certificate. Markings updated accordingly.
- iv. Update the battery protection circuitry to remove diodes, when no cells are fitted.
- v. LoRaWAN added as a communication option.
- vi. Branding name of NI Mag has been introduced.
- vii. Other administrative changes, not affecting safety.
- viii. New encapsulant, OMEGABOND OB-700, for the external IS sensor.
- ix. Change in Ui value from 45V to 30V for entity parameters.
- x. Segregations assessment of revised Interface and Display boards.
- xi. Standards update from EN 60079-0:2012/A11:2013 to EN IEC 60079-0:2018/AC:2020-02

Variation 2 - This variation introduced the following changes:

- i. To permit the introduction of alternative encapsulant QSiI 533 for the external IS sensor. As a result, the ambient temperature ranges specified in the specific conditions of use were updated.

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- ii. To permit the removal of external IS sensor encapsulant OMEGABOND OB-700.
- iii. To recognize minor drawing modifications. These amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.

Variation 3 - This variation introduced the following changes:

- i. Removal of alternative vendor and product name.
- ii. Addition of alternative vendor and product name.
- iii. Correction of typographical error in the encapsulant designation in report R80110215A. The correct encapsulant designation being QSiL 553.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	24 October 2018	R70166718A	The release of the prime certificate.
1	31 October 2019	4075	Transfer of certificate Sira 18ATEX1244X from Sira Certification Service to CSA Group Netherlands B.V.
2	10 February 2021	R80041419A	The introduction of Variation 1.
3	12 September 2022	R80110215A	The introduction of Variation 2.
4	20 January 2023	R80149083A	The introduction of Variation 3.

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

- 15.1 The Temperature class of the equipment is listed as T6 to T4 and ambient temperature range of the equipment is listed between -50°C and +85°C. This is dependent upon a configurable matrix in relation to the product configuration. Refer to the table below.

Without IS interface to relay

Power Supply	PD	Temperature Class		
		T6	T5	T4
External supply (1 W)	1 W	-50°C to +69°C (+78°C*)	-50°C to +84°C (+85°C*)	-50°C to +85°C
External supply (5 W)	5 W	-50°C to +69°C (+70°C)	-50°C to +84°C (+85°C)	-50°C to +85°C
External supply (10 W)	10 W	-50°C to +60°C	-50°C to +75°C	-50°C to +85°C
Alkaline battery (DURACELL, ID1300, PC1300, ENERGIZER INDUSTRIAL)	1 W	-18°C to +51°C	-18°C to +51°C	-18°C to +51°C
	5 W	-18°C to +41°C	-18°C to +41°C	-18°C to +41°C
Lithium battery (SAFT LS33600)	1 W	-50°C to +69°C (+78C)	-50°C to +82°C	-50°C to +82°C
	5 W	-50°C to +69°C	-50°C to +72°C	-50°C to +72°C
NiMH battery (ANSMANN, 8500)	1 W	-20°C to +62°C	-20°C to +62°C	-20°C to +62°C
	5 W	-20°C to +52°C	-20°C to +52°C	-20°C to +52°C

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With IS interface to relay

Power Supply	PD	Temperature Class		
		T6	T5	T4
External supply (1 W)	1 W	-40°C to +69°C (+78°C*)	-40°C to +82°C	-40°C to +82°C
External supply (5 W)	5 W	-40°C to +69°C (+70°C)	-40°C to +72°C	-40°C to +72°C
External supply (10 W)	10 W	-40°C to +59°C	-40°C to +59°C	-40°C to +59°C
Alkaline battery (DURACELL, ID1300, PC1300, ENERGIZER INDUSTRIAL)	1 W	-18°C to +51°C	-18°C to +51°C	-18°C to +51°C
	5 W	-18°C to +41°C	-18°C to +41°C	-18°C to +41°C
Lithium battery* (SAFT, LS33600)	1 W	-40°C to +69°C (+78°C*)	-40°C to +82°C	-40°C to +82°C
	5 W	-40°C to +69°C (+70°C)	-40°C to +72°C	-40°C to +72°C
NiMH battery* (ANSMANN, 8500)	1 W	-20°C to +62°C	-20°C to +62°C	-20°C to +62°C
	5 W	-20°C to +52°C	-20°C to +52°C	-20°C to +52°C

Note 1 - - When batteries are fitted as a back-up supply in an externally powered unit, the ambient range of the battery takes precedence over the ambient range of the external supply

Note 2 - * With no external or remote sensor attached to the flameproof enclosure.

- 15.2 The enclosures paint coated surface may be non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user shall ensure that the equipment shall not be used in a location where the external conditions are conducive to the build-up of electrostatic charge on non-conductive surfaces. Additionally, the equipment shall only be cleaned with a damp cloth.
- 15.3 Internal and external threaded holes and securing screws are provided for earthing and equipotential bonding. Protective earthing conductors employed shall be greater or equal to the size of the phase conductors, equipotential conductors shall have a minimum cross sectional area of 4 mm². The end user shall ensure conductors cannot be readily loosened or twisted. Light metals shall not be used unless special precautions are taken to guard against corrosion.
- 15.4 If the batteries used in this equipment need to be changed, then they shall only be replaced with the same type; i.e. either Alkaline (DURACELL ID1300, PC1300 and ENERGIZER INDUSTRIAL) primary cells or Lithium (SAFT LS33600) primary cells, NiMH (Annsman Max E) secondary cells.
- 15.5 Batteries shall only be changed and/or charged outside of the hazardous area.
- 15.6 External power and signals shall only be supplied according to manufacturer's instructions using suitable cable and suitably certified flameproof 'Ex db' cable glands and unused entries shall be fitted with suitable certified blanking elements.
- 15.7 The temperature at the cable entry point may exceed +70°C; only cables and fittings suitable for use at this temperature shall be used.
- 15.8 The equipment contains a shunt zener diode interface, which requires connection to a suitable earth in accordance with EN 60079-14.
- 15.9 All wirings for external connection shall be made using suitable crimp ferrules to prevent accidental disconnection as per EN 60079-11:2011 Cl. 6.2.2.
- 15.10 The IS terminal blocks shall be covered by the plastic covers after field-wiring.

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- 15.11 The sensor cable length shall not exceed 20 meters.
- 15.12 All wires shall have insulation with minimum radial thickness of 1.0 mm and conductor size of at least 0.05 mm (diameter).
- 15.13 When the relay is used in the intrinsically safe interface, connection of any relay contacts to non-intrinsically safe circuits is not permitted. Once the contacts are connected to any non-IS circuits, they are no longer be acceptable for IS interface.
- 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 The manufacturer shall fit suitably certified blanking devices that are certified to the same edition of EN 60079-0 and EN 60079-1 to which this equipment is certified.
- 17.4 The products covered by this certificate incorporate components that are used as part of other certified equipment; it is therefore the responsibility of the manufacturer to continually monitor the status of these devices, and they shall inform Sira of any modifications of these devices that may impinge upon the explosion safety design of their products.
- 17.5 The equipment assembled with an Adalet enclosure is subject to a batch overpressure tests in accordance with clause 16.6 of EN 60079-1. The applied pressure shall be 24.92 bar, the pressure shall be applied for a period not less than 10 seconds. The enclosures shall withstand the pressures without suffering permanent deformation of the joints or damage to the enclosure.

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Certificate Annexe



Certificate Number: Sira 18ATEX1244X
Equipment: 4003 Magnetic PIG Signaller or SPI-MAG 403
Non-Intrusive Scrapper Passage Indicator
Applicant: Online Electronics Ltd.

Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
4003_X002	1 of 1	E01	15 Oct 18	Battery Schematic
4003_X003	1 of 1	K01	15 Oct 18	Interface PCB Schematic
4003_X005	1 to 18	B04	24 Oct 18	ATEX & IECEx File
4003_X006	1 to 4	A05	15 Oct 18	Safety Instructions
4003_X007	1 of 1	A00	15 Oct 18	Installation Drawing
4003_X012	1 of 1	B00	15 Oct 18	Enclosure Detail
4003_X013	1 of 1	A00	15 Oct 18	Battery Version
4003_X014	1 of 1	A00	15 Oct 18	External Power Version
4003_X015	1 of 1	A07	24 Oct 18	Marking Label
4003_X017	1 of 1	A01	15 Oct 18	Partition Cover
4003_X018	1 of 1	A00	15 Oct 18	Remote Sensor Assembly
4003_X102	1 of 1	D00	15 Oct 18	Display PCB Layout
4003_X103	1 of 1	K00	15 Oct 18	Interface PCB Layout

Issue 1 - No new drawings were introduced

Issue 2

Drawing	Sheets	Rev.	Date (Stamp)	Title
4003_X002	1 of 1	G02	20 Jan 21	Display Schematic
4003_X003	1 of 1	M00	20 Jan 21	Interface Schematic
4003_X005	1 to 23	D07	20 Jan 21	ATEX & IECEx File
4003_X006	1 to 4	A09	20 Jan 21	Safety Instructions
4003_X007	1 of 1	B01	20 Jan 21	Installation Drawing
4003_X012	1 of 1	C00	20 Jan 21	Adalet XIHN Enclosure Detail
4003_X013	1 of 1	B00	20 Jan 21	Battery Version
4003_X014	1 of 1	B00	20 Jan 21	External Power Version
4003_X015	1 of 1	B08	20 Jan 21	Adalet Combined Markings
4003_X017	1 of 1	B00	20 Jan 21	Partition Cover
4003_X018	1 of 1	B02	20 Jan 21	Remote Sensor Assembly
4003_X019	1 of 1	A00	20 Jan 21	Limatherm XD-x120 Enclosure Detail
4003_X020	1 of 1	A06	20 Jan 21	Limatherm Enclosure Markings
4003_X102	1 of 1	G02	20 Jan 21	Display PCB
4003_X103	1 of 1	M02	20 Jan 21	Interface PCB

Issue 3

Drawing	Sheets	Rev.	Date (Stamp)	Title
4003_X003	1 of 1	N00	18 Jul 22	Interface Schematic
4003_X005	1 to 23	E05	18 Jul 22	ATEX & IECEx File
4003_X006	1 to 3	A12	18 Jul 22	Safety Instructions
4003_X018	1 of 1	C01	18 Jul 22	Remote Sensor Assembly
4003_X022	1 of 1	A00	18 Jul 22	4003 Adalet Markings II
4003_X023	1 of 1	A00	18 Jul 22	4003 Limatherm Markings II

The following drawings have been removed:

Drawing	Sheets	Rev.	Date (Stamp)	Title
4003_X015	1 of 1	B08	20 Jan 21	4003 Adalet Combined Markings
4003_X020	1 of 1	A06	20 Jan 21	4003 Limatherm Enclosure Markings

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Certificate Annexe



Certificate Number: Sira 18ATEX1244X
Equipment: 4003 Magnetic PIG Signaller or SPI-MAG 403
Non-Intrusive Scrapper Passage Indicator
Applicant: Online Electronics Ltd.

Issue 4

Drawing	Sheets	Rev.	Date (Stamp)	Title
4003_X015	1 of 1	C01	14 Dec 22	4003 Adalet Combined Markings
4003_X020	1 of 1	B01	14 Dec 22	4003 Limatherm Enclosure Markings

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