IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx SIR 18.0059X**

Certificate history:
Issue 0 (2018-10-25)

Status: **Current**

Issue No: 1

Date of Issue: 2021-02-10

Applicant: **Online Electronics Ltd.**
Online House
Blackburn Business Park
Woodburn Road
Aberdeen
Aberdeenshire AB21 0PS
United Kingdom

Equipment: **4003 Non-Intrusive PIG Detector or NI-Mag**

Optional accessory:

Type of Protection: **Flameproof db and Intrinsic Safety ia**

Marking:

When no IS remote sensor and no IS relay circuit connected
Ex db IIC T* Gb
Ta* = -50°C ≤ Ta ≤+85°C

When IS relay circuit connected
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.
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.

Approved for issue on behalf of the IECEx Certification Body: **Neil Jones**

Position: **Certification Manager**

Signature:
(for printed version)

Date:
(for printed version)

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 www.iecex.com or use of this QR Code.

Certificate issued by:

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

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Certificate No.: **IECEx SIR 18.0059X**

Date of issue: 2021-02-10 Issue No: 1

Manufacturer: **Online Electronics Ltd.**
Online House
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Aberdeenshire AB21 0PS
United Kingdom

Manufacturing locations:

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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with 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 Reports:

GB/SIR/ExTR18.0187/00 GB/SIR/ExTR21.0025/00

Quality Assessment Report:

GB/TRC/QAR11.0002/08

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

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.

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

Refer to Annexe for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Refer to Annexe.

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Date of issue: 2021-02-10 Issue No: 1

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
This issue, Issue 1, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. IIntroduction of alternate component certified enclosure Limatherm XD-120win and XD-S120win, with operating range -50°C to +85°C and reduce the maximum ambient temperature to +85 °C for the existing models. Markings updated accordingly.
2. Introduction of alternate batteries Duracell PC1300 and Energizer EN95.
3. 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.
4. Update the battery protection circuitry to remove diodes, when no cells are fitted.
5. LoRaWAN added as a communication option.
6. Branding name of NI Mag has been introduced.
7. Other administrative changes, not affecting safety.
8. New encapsulant, OMEGABOND OB-700, for the external IS sensor.
9. Change in Ui value from 45V to 30V for entity parameters.
10. Segregations assessment of revised Interface and Display boards.
11. Standards update from IEC 60079-0:2011 Ed. 6 to IEC 60079-0:2017/COR1:2020.

Annex:

IECEx SIR 18.0059X Annexe Iss 1.pdf

EQUIPMENT

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 XIHNFGCX or with a Stainless steel housing model XIHNSFGCX by Adalet certified under 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

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

Internally Powered Variant:

Duracell Industrial ID1300 (Primary)
Voltage: 6.0 VDC
Current: 2000 mA
Capacity: 18 Ah
Power: ≤ 5 W

Sira Certification Service
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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

Specific Conditions Of Use

1. The Temperature class of the equipment is listed as T6 to T4 and ambient temperature range of the equipment is listed between -50ºC and +85ºC. 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 +73°C (+78°C*)	-50°C to +85°C (+85°C*)	-50°C to +85°C
External supply (5 W)	5 W	-50°C to +70°C	-50°C to +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	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
	5 W	-20°C to +41°C	-20°C to +41°C	-20°C to +41°C
Lithium battery (SAFT LS33600)	1 W	-40°C to +73°C	-40°C to +80°C	-40°C to +80°C
	5 W	-40°C to +62°C	-40°C to +62°C	-40°C to +62°C
NiMH battery (ANSMANN, 8500)	1 W	-20°C to +60°C	-20°C to +60°C	-20°C to +60°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 +73°C (+78°C*)	-40°C to +82°C	-40°C to +82°C
External supply (5 W)	5 W	-40°C to +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	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
	5 W	-20°C to +41°C	-20°C to +41°C	-20°C to +41°C
Lithium battery* (SAFT, LS33600)	1 W	-40°C to +73°C (+78°C*)	-40°C to +80°C	-40°C to +80°C
	5 W	-40°C to +62°C	-40°C to +62°C	-40°C to +62°C
NiMH battery* (ANSMANN, 8500)	1 W	-20°C to +60°C	-20°C to +60°C	-20°C to +60°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.

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.
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 4mm^2. 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.
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.
5. Batteries shall only be changed and/or charged outside of the hazardous area.
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.
7. The temperature at the cable entry point may exceed +70°C; only cables suitable for use at this temperature shall be used.
8. The equipment contains a shunt zener diode interface, which requires connection to a suitable earth in accordance with IEC 60079-14.

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9. All wirings for external connection shall be made using suitable crimp ferrules to prevent accidental disconnection as per IEC 60079-11:2011 Cl. 6.2.2.
10. The IS terminal blocks shall be covered by the plastic covers after field-wiring.
11. The sensor cable length shall not exceed 20 meters.
12. All wires shall have insulation with minimum radial thickness of 1.0 mm and conductor size of at least 0.05 mm (diameter).
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.

Conditions of Manufacture

1. The manufacturer shall fit suitably certified blanking devices that are certified to the same edition of IEC 60079-0 and IEC 60079-1 to which this equipment is certified.
2. 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.
3. The equipment assembled with an Adalet enclosure is subject to a batch overpressure tests in accordance with clause 16.6 of IEC 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.

Full certificate change history

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