

1

UNITED KINGDOM CONFORMITY ASSESSMENT

UK TYPE EXAMINATION CERTIFICATE

2

Product or Protective System Intended for use in Potentially Explosive Atmospheres
SI 2016:1107 (as amended) – Schedule 3A, Part 1

3 Type Examination Certificate No.: **EMA22UKEX0005X**

4 Product: **Magnetic Pig Signaller,
4001D MAGSIG and HI-T MAGAlert v02 Magnetic Pig Signaller**

5 Manufacturer: **Online Electronics Limited**

6 Address: **Online House, Blackburn Business Park, Woodburn Road,
Aberdeen, AB21 OPS, United Kingdom**

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

8 Element Materials Technology, Approved Body number 0891, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, SI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports **TRA-008946-33-01A, TRA-037745-33-00A, TRA-054897-33-00A & TRA-055551-33-00A.**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018

EN 60079-1:2014


EN 60079-11:2012

Except in respect of those requirements listed at section 18 of the schedule.

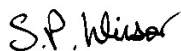
10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

 **II 1/2 G Ex db ia [ia Ga] IIC T4...T6 Gb Ta see description**

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.



S P Winsor, Certification Manager

Issue date: 2023-04-25

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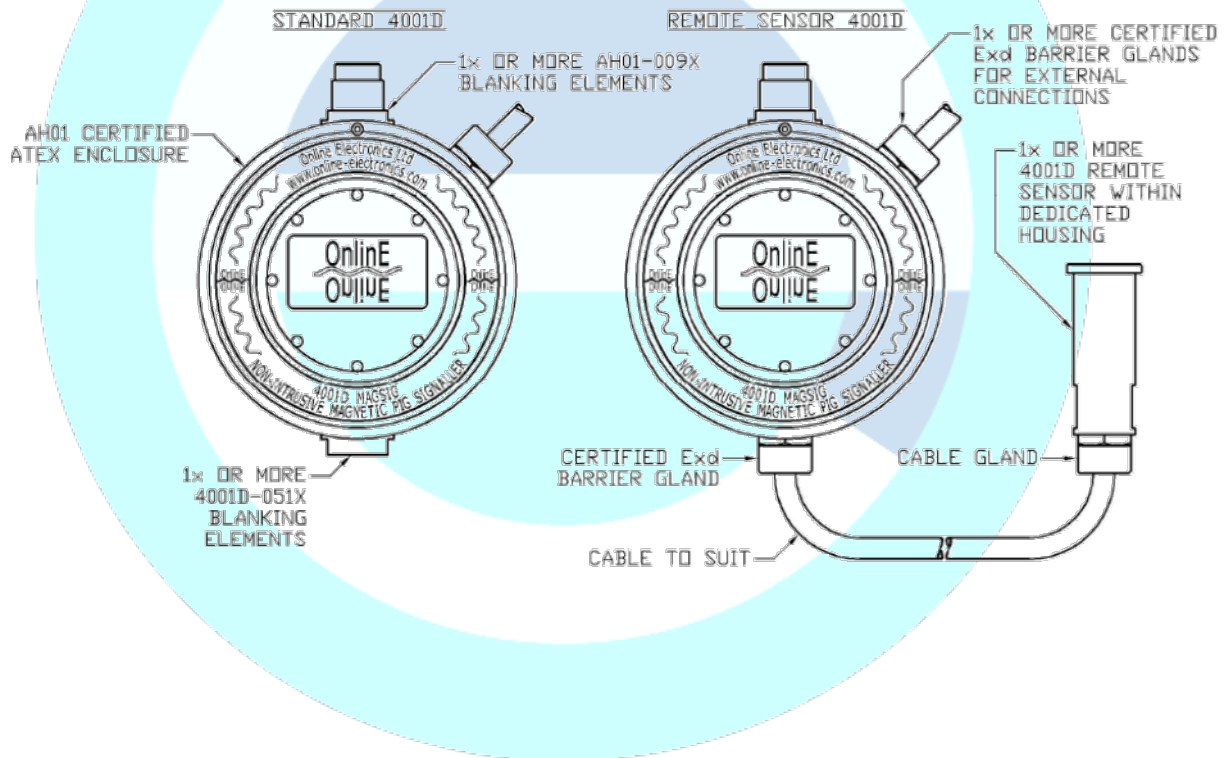
15 Description of Product

The 4001D detects, logs and displays the passage of magnetic PIGs through oil and gas pipelines. The 4001D Magnetic Pig Signaller comprises of a component certified flameproof enclosure (AH01) and a sensor housed inside a blanking element or inside a separate enclosure connected via a cable and suitable approved Ex 'd' glands. A barrier circuit is fitted between the main enclosure and the sensor so the sensor may be used in Zone 0 (Category 1) hazardous area. The equipment may be externally powered (30 Vdc max) or battery powered.

The connections between the 4001D main circuitry and the 4001D sensor have suitable power, voltage, and current limiting components fitted to allow the 4001D sensor to meet 'ia' requirements and to be used in Zone 0 (Category 1) hazardous area. The components within the sensor are incapable of causing a spark.

The Hi-T MAGAlert v02 is identical to the 4001D but has its own markings.

The AH01 flameproof housing contains all display and sensing electronics, optional battery pack, and optional external power and interface connections via suitable certified cable entries / glands. The AH01 flameproof enclosure is separately certified as a component ATEX / IECEx certificate number TRAC12ATEX0035U / IECEx TRC 12.0018U respectively



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The ambient temperature range varies with configuration and power dissipation. The table below shows the full range permitted:

Pd	External supply (no cells fitted)		
	T4	T5	T6
<1W	-40 to 85°C	-40 to 85°C	-40 to 75°C
<5W	-40 to 85°C	-40 to 85°C	-40 to 70°C
<10W	-40 to 80°C	-40 to 70°C	-40 to 55°C

Pd	DURACELL INDUSTRIAL ID1300 fitted		
	T4	T5	T6
<1W	-20 to 54°C	-20 to 54°C	-20 to 54°C
<5W	-20 to 54°C	-20 to 54°C	-20 to 54°C
<10W	-20 to 54°C	-20 to 54°C	-20 to 54°C

Pd	SAFT LS33600 fitted		
	T4	T5	T6
<1W	-40 to 85°C	-40 to 85°C	-40 to 75°C
<5W	-40 to 85°C	-40 to 85°C	-40 to 70°C
<10W	-40 to 80°C	-40 to 70°C	-40 to 55°C

Pd	ANSMANN MaxE D fitted		
	T4	T5	T6
<1W	-20 to 65°C	-20 to 65°C	-20 to 65°C
<5W	-20 to 65°C	-20 to 65°C	-20 to 65°C
<10W	-20 to 65°C	-20 to 65°C	-20 to 55°C

16 Test report No. (associated with this certificate issue): TRA-055551-33-00A.

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17 Specific Conditions of Use

1. Do not open when an explosive gas atmosphere may be present.
2. Potential electrostatic charging hazard. The equipment should not be mounted in areas where it could be subjected to highly efficient charging mechanisms, such as fast moving dust or particle filled air, and shall only be cleaned with an anti-static or damp cloth.
3. Transducer, cable and electronics shall only be used as a complete assembly.
4. Internal and external threaded holes are provided for earthing and equipotential bonding. Protective earthing conductors employed shall be \geq than 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.
5. External power supply shall not exceed 30 Vdc.
6. External power and signals shall only be supplied according to manufacturers' instruction using suitable cable and suitable Ex certified cable glands.
7. External power and signals shall only be connected using suitable crimp ferrules to prevent accidental disconnection.
8. Unused cable entries shall be sealed using suitable Ex certified blanking elements.
9. The temperature at the cable entry point may exceed +70 °C. Cables suitable for use at this temperature must be used.
10. Use only DURACELL INDUSTRIAL ID1300 or SAFT LS33600 or ANSMANN MAXE D cells.
11. As part of the routine maintenance schedule, the condition of the window cement shall be periodically inspected for any degradation or discolouration of the cement that may compromise the explosion protection
12. Temperature class is reliant on the operating ambient temperature, internal power dissipation (Pd) and whether internal cells are fitted:

Pd	External supply (NO CELLS FITTED)		
	T4	T5	T6
<1W	-40 to +85°C	-40 to +85°C	-40 to +75°C
<5W	-40 to +85°C	-40 to +85°C	-40 to +70°C
<10W	-40 to +80°C	-40 to +70°C	-40 to +55°C

<Cells will be used within their manufacturer's stated temperature ratings and a suitable table such as the examples below inserted in the manual for the customers information>

Pd	DURACELL INDUSTRIAL ID1300 FITTED		
	T4	T5	T6
<1W	-20 to +54°C	-20 to +54°C	-20 to +54°C
<5W	-20 to +54°C	-20 to +54°C	-20 to +54°C
<10W	-20 to +54°C	-20 to +54°C	-20 to +54°C

Pd	SAFT LS33600 FITTED		
	T4	T5	T6
<1W	-40 to +85°C	-40 to +85°C	-40 to +75°C
<5W	-40 to +85°C	-40 to +85°C	-40 to +70°C
<10W	-40 to +80°C	-40 to +70°C	-40 to +55°C

Pd	ANSMANN MaxE D FITTED		
	T4	T5	T6
<1W	-20 to +65°C	-20 to +65°C	-20 to +65°C
<5W	-20 to +65°C	-20 to +65°C	-20 to +65°C
<10W	-20 to +65°C	-20 to +65°C	-20 to +55°C

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Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.

18 Essential Health and Safety Requirements (Regulations Schedule 1)

Element Materials Technology has conducted a gap analysis between the standards applied within the reports listed under section 8 and the latest versions of the corresponding harmonised standards (as listed in section 9). This analysis has confirmed continued compliance with the Essential Health and Safety Requirements. The analysis is detailed in report: TRA-055551-33-00A.

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

19 Drawings and Documents

The list of controlled technical documentation is given in Appendix A to this schedule.

20 Routine Tests

None.

21 Specific Conditions for Manufacture

1. The maximum capacitance in the sensor is not permitted to exceed 6.1 μF .
2. Attention is drawn to the spacing requirements detailed on drawing "4001D ATEX PCBs".
3. PCBs must be arranged and stacked in such a way that it is not possible for non-intrinsically safe wiring to come within 2 mm of the intrinsically safe components/bare parts.

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22 Photographs

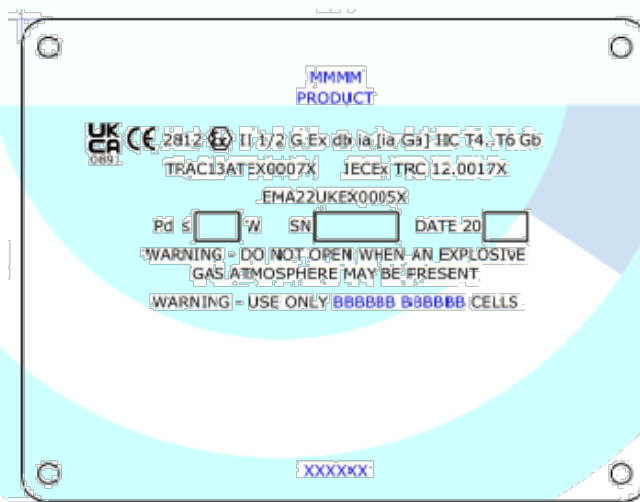


4001D MAGSIG PIG SIGNALLER



Top view enclosure

23 Details of Markings



1. MMMM WILL BE REPLACED WITH THE LATEST NAME AND ADDRESS OF MANUFACTURER AS PER THE CERTIFICATION. E.g. ONLINE ELECTRONICS LTD, AB21 0PS, UK OR Power & Energy International Ltd (GD Engineering) S80 2PY (Manufactured for Power & Energy Ltd (GD Engineering) by Online Electronics Ltd, AB21 0PS, UK).
2. PRODUCT WILL BE REPLACED WITH THE RELEVANT PRODUCT NAME, 4001D Magnetic Pig Signaller OR Hi-T MAGAlert v02 Magnetic Pig Signaller
3. BBBBBB BBBBBB WILL BE REPLACED WITH THE RELEVANT CELL TYPE, DURACELL INDUSTRIAL ID1300 OR SAFT LS33600 OR ANSMAN V MAXE D as per EN60079-0:2012 section 29.14. THIS ENTIRE STATEMENT MAY BE EXCLUDED IF BATTERIES ARE NOT AN AVAILABLE OPTION.
4. MAXIMUM POWER DISSIPATION, SERIAL NUMBER, AND DATE OF MANUFACTURE WILL BE STAMPED ON DURING MANUFACTURE.
5. XXXXXX THE LABEL MAY BE ENLARGED AND/OR CONTAIN ADDITIONAL NON-ATEX DETAILS

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24 Certificate History

Original certificate 2023-04-25 First issue.

This certificate is a consolidated certificate and reflects the latest status of the certification, including all variations and amendments.

25 Notes to UKCA marking

In respect of UKCA Marking, Element Materials Technology accepts no responsibility for the compliance of the product against all applicable Regulations in all applications.

26 Notes to this certificate

Element Materials Technology certification reference: TRA-055551-02 (GU-ONLQ-0019).

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Approved Body 0891 is the designation for Element Materials Technology Warwick Ltd.

27 Conditions for the validity of this certificate

This certificate remains valid for so long as:

- (i) The equipment listed in section 4 is manufactured in accordance with the documents listed in Appendix A of this certificate.
- (ii) The standards listed in section 9 of this certificate continue to satisfy the Essential Health and Safety Requirements of Schedule 1 of the Regulations SI 2016:1107 (as amended by SI 2019:696) and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

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APPENDIX A - TECHNICAL DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
4001D_X001 ATEX IECEX FILE (10 pages)	4001D_X001	F03	2023-04-14
The technical file contains a full set of detailed drawings, as follows:			
Title:	Drawing No.:	Rev. Level:	Date:
4001D Sensor blank	4001D_X003	A01	2017-12-18
4001D Schematics	4001D_X004	A01	2017-12-18
4001D PCB layouts	4001D_X005	A01	2017-12-18
4001D Safety Instructions (5 pages)	4001D_X006	F03	2023-04-14
4001D Markings	4001D_X002	F02	2022-02-07