

# 1 EU - TYPE EXAMINATION CERTIFICATE

## 2 Product or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU – Annex III

3 EU - Type Examination Certificate No.: **EMT16ATEX0007X (incorporating variations V1 to V7)**

4 Product: **Passive, ultrasonic PIG detector and signaller, ID5002P**

5 Manufacturer: **Online Electronics Limited**

6 Address: **Online House, Blackburn Business Park, Woodburn Road, Blackburn, Aberdeen, AB21 0PS, 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, Notified Body number 2812, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive. The examination and test results are recorded in the confidential report **TRA-028941-33-00A, TRA-032310-33-00A, TRA-033570-33-00B TRA-039740-33-00B.**

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

**EN 60079-0:2012/A11:2013 EN 60079-11:2012**

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

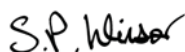
10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive 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 G Ex ia IIB T4 Ga **-40 °C ≤ Ta ≤ +85 °C**

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: 2019-11-06

Page 1

13 SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

14 CERTIFICATE NUMBER EMT16ATEX0007X (incorporating variations V1 to V7)

15 Description of Product

ID5002P Pig signaller is used to detect, signal and log the passage of pigs at critical points along a pipeline designed to be used in Zone 0 hazardous areas, Gas Group IIB using protection concept intrinsic safety level 'ia'. The equipment has an IP66 cylindrical metallic enclosure with two end caps one windowed, with provision for up to 8 threaded cable entry glands, constructed from Aluminium alloy or Duplex Stainless Steel with a painted or power coated option. There is a LCD display module, indicator LEDs, SD card, Bluetooth module option, two printed circuit boards providing galvanic isolation using a transformer and opto-couplers, a push button switch and connection to the external pig detection sensor.

The ID5002P is powered by an approved barrier supply and provides intrinsic safe interfaces to RS485, an external relay, a 4-20mA current loop, an external switch, an external sensor and a remote trigger.

Table of entity parameters							
Parameter	Main Power Supply, Terminal VIN J4, pin 1	RS485, Terminal RS485-, RS485-GND, RS485+ J5, pins 7-9	Relay	4-20mA Current Loop, Terminal CL- CL+ J5, pins 10&11	External Switch, Terminal EXTSW, 0V J4, pins 4&5	Remote Trigger, Terminal TRIG+, TRIG- J4, pins 9&10	Sensor, Terminal SEN+, SEN- J4, pins 7&8
Ui	21.5V	6V	See table below	29.4V	0V	29.4V	-
Ii	604mA	600mA		125mA	0mA	125mA	-
Pi	3243mW	450mW		920mW	0W	650mW	-
Ci	0µF	110nF		121nF	0µF	0µF	-
Li	0µH	0µH		0µH	0µH	0µH	-
Uo	-	-		-	4.1V	-	23.1V
Io	-	-		-	5mA	-	28mA
Po	-	-		-	5mW	-	160mW
Co	-	-		-	10µF	-	1.02µF
Lo	-	-		-	0.2H	-	0.19H

Description	Relay, Terminal J5 pins 1-6								
Terminals	NO1, COM1, NC1, NO2, COM2, NC2								
Ui	15.0V	OR	21.6V	OR	24.0V	OR	30.0V	OR	45.0V
Ii	2000mA		611mA		433mA		253mA		113mA
Pi	7500mW		3299mW		2958mW		1897mW		1271mW
Ci	0µF		0µF		0µF		0µF		0µF
Li	0µH		0µH		0µH		0µH		0µH

**13 SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE**

**14 CERTIFICATE NUMBER EMT16ATEX0007X (incorporating variations V1 to V7)**

**16 Test report No. (associated with this certificate issue):** TRA-047820-33-00A

**17 Specific Conditions of Use**

1. WARNING: Do not open when energized.
2. WARNING: Must be installed in accordance with user manual.
3. All intrinsically safe installations must be in accordance with the assembly and installation regulations described in IEC 60079-14.
4. Only ATEX approved barriers must be used in conjunction with this product for external interfaces – See parameters table.
5. Cable glands used with this equipment must be ATEX approved with IP66 rating or greater and be selected with consideration of the expected environmental conditions at the point of installation.
6. This equipment contains an internal SD card that must not be accessed or removed or replaced in a hazardous area.
7. This equipment contains a USB port that must only be used by the manufacturer during production, test, repair and overhaul of the equipment in a safe area. It is not intended to be used by the end-user in a hazardous or non-hazardous area at any time.
8. Aluminium enclosure versions may present a spark hazard and must only be installed in hazardous areas such that the ignition sources due to impact and friction are excluded.
9. Painted or powder coated enclosure versions may present an electrostatic charging hazard and should not be mounted in areas where they 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.
10. As part of a 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.
11. As per IEC/EN 60079-14 the ID5002P shall be either isolated from earth or connected at one point to the equipotential bonding system.
12. If enclosure equipotential bonding system or earthing is connected then to avoid double earth faults the EXTSW connection must not be connected to a second earth.



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 (Directive Annex II)**

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.

## SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

### CERTIFICATE NUMBER EMT16ATEX0007X (incorporating variations V1 to V7)

#### 19 Drawings and Documents

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

#### 20 Routine Tests

1. The non-mains transformer T2 on the ID5002P POWER PCB must be subject to routine testing in accordance with clause 11.2 in IEC 60079-11:2012. 1500V must be applied between the input and output windings for a period of at least 60 s. The applied voltage shall remain constant during the test and the current flowing shall not exceed 5 mA r.m.s. at any time.

#### 21 Specific Conditions for Manufacture

1. All capacitors and inductors may be replaced with parts that have equal or lower values than that listed in the Bill of Materials (controlled drawing numbers ID5002P-X003 POW-PCB-SCHEM and ID5002P-X005 COR-PCB-SCHEM) but must have the same or greater working voltage or current rating, be of the same physical size and have similar tolerance values.
2. Non-critical resistors may be replaced with parts that have a resistance other than that listed in the Bill of Materials (controlled drawing numbers ID5002P-X003 POW-PCB-SCHEM and ID5002P-X005 COR-PCB-SCHEM) but must have the same or greater power rating, be of the same package size and have similar tolerance values.

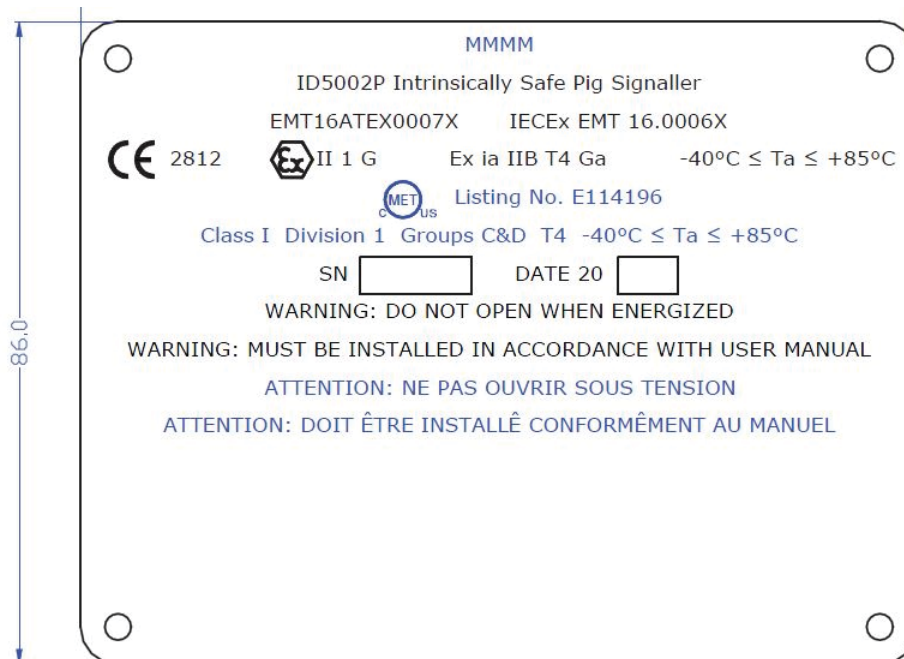
#### 22 Photographs



## SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

### CERTIFICATE NUMBER EMT16ATEX0007X (incorporating variations V1 to V7)

#### 23 Details of Markings



1. MMMM SHOWS LATEST NAME AND ADDRESS OF MANUFACTURER AS PER THE CERTIFICATION. E.g ONLINE ELECTRONICS LTD, AB21 0PS, UK.
2. SERIAL NUMBER AND DATE OF MANUFACTURE TO BE ADDED DURING MANUFACTURE.
3. LABEL DIMENSIONS MAY BE ALTERED TO MAKE SPACE FOR ADDITIONAL NON SAFETY CRITICAL DETAILS.
4. ADDITIONAL NON SAFETY CRITICAL DETAILS MAY BE ENGRAVED.
5. MOUNTED USING RIVETED OR SCREWED FASTENERS.
6. MARKINGS SHALL BE INDELIBLE e.g. ENGRAVED OR ETCHED.
7. LABEL MATERIAL SHALL BE STAINLESS STEEL (TYPICALLY 316).
8. cMET<sub>us</sub> MARKINGS (BLUE) ARE INDICATIVE ONLY AND ARE NOT CONTROLLED BY THIS DRAWING.

#### 24 Details of Variations to this Certificate

This certificate is a consolidated certificate and reflects the latest status of the certification, including the following variations:

- Variation V1 - Circuit revisions to core, LED and power PCBs, encapsulation removed from optional Bluetooth module. (Non-critical change) and conditions of manufacturer amended.
- Variation V2 - Circuit revisions to power PCB, LCD display and modification of earthing requirements of enclosure.
- Variation V3 - Corrections to resistor calculations in Appendix A of report.
- Variation V4 - Change of manufacturer's address, Technical documents new file format and document numbers and addition of non-safety critical SMD resistor components.
- Variation V5 – Incorporation of drawing reference corrections as per ID5002P\_X001 Rev. A01
- Variation V6 - Change of PCB track width and document updates.
- Variation V7 - This certificate was originally issued by Notified Body number 0891 under Directive 2014/34/EU. The technical file has been transferred to Element Notified Body number 2812 without further assessment or evaluation.

#### 25 Notes to CE marking

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

## SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

CERTIFICATE NUMBER EMT16ATEX0007X (incorporating variations V1 to V7)

### 26 Notes to this certificate

Element Materials Technology certification reference: NR-ONLQ-0008

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

Notified Body number 2812 is the designation for Element Materials Technology Rotterdam BV.

### 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 Annex II of Directive 2014/34/EU and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

**SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE****CERTIFICATE NUMBER EMT16ATEX0007X (incorporating variations V1 to V7)****APPENDIX A - TECHNICAL DOCUMENTS**

<b>Title:</b>	<b>Drawing No.:</b>	<b>Rev. Level:</b>	<b>Date:</b>
Technical File (12 pages)	ID5002P_X001	B00	2019-10-16
POW-PCB Schematic (12 pages)	ID5002P_X003	A00	2017-11-20
POW-PCB-POP Bill of materials (6 pages)	ID5002P_X004	A01	2018-02-08
COR-PCB Schematic (6 pages)	ID5002P_X005	A00	2017-11-20
COR-PCB Bill of materials (6 pages)	ID5002P_X006	A00	2017-11-20
ATEX Markings	ID5002P_X007	B00	2019-10-14
RS485 Transformer	ID5002P_X008	A00	2017-06-20
General assembly	ID5002P_X009	A00	2017-06-20
Safety Instructions (10 pages)	ID5002P_X010	B00	2019-10-14
LED-PCB Schematic	ID5002P_X011	A00	2017-11-22
LED-PCB Bill of materials	ID5002P_X012	A01	2018-02-08
LCD Modifications (2 pages)	ID5002P_X013	A01	2018-02-08
COR-PCB layers (4 pages)	ID5002P_X014	A01	2019-09-18
LED-PCB layers	ID5002P_X015	A01	2019-09-18
POW-PCB layers (4 pages)	ID5002P_X016	A01	2019-09-18