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 EMT 16.0006X**

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Status: **Current**

Issue No: 7

Date of Issue: 2022-01-27

Applicant: **Online Electronics Limited,**
Online House
Blackburn Business Park
Woodburn Road
Blackburn
Aberdeen, AB21 0PS
United Kingdom

Equipment: **ID5002P Passive, ultrasonic PIG detector and signaller**

Optional accessory:

Type of Protection: **Intrinsic Safety "ia"**

Marking: Ex ia IIB T4 Ga Tamb: -40 °C to +85 °C

Certificate history:

Issue 6 (2019-11-05)
Issue 5 (2018-08-01)
Issue 4 (2018-05-15)
Issue 3 (2017-03-08)
Issue 2 (2016-12-06)
Issue 1 (2016-07-25)
Issue 0 (2016-05-11)

Approved for issue on behalf of the IECEx Certification Body: **Stephen Winsor**

Position: **Certification Manager**

Signature: (for printed version)

Date:

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:

Element Materials Technology
Unit 1 Pendle Place
Skelmersdale
West Lancashire
United Kingdom

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Certificate No.: **IECEx EMT 16.0006X**

Date of issue: 2022-01-27 Issue No: 7

Manufacturer: **Online Electronics Limited**
Online House
Blackburn Business Park
Woodburn Road
Blackburn
Aberdeen, AB21 0PS
United Kingdom

Additional 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 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

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/EMT/ExTR16.0006/00
GB/EMT/ExTR16.0006/01
GB/EMT/ExTR16.0006/02
GB/EMT/ExTR16.0006/03
GB/EMT/ExTR16.0006/04
GB/EMT/ExTR16.0006/05
GB/EMT/ExTR16.0006/06
GB/EMT/ExTR16.0006/07

Quality Assessment Report:

GB/TRC/QAR11.0002/09

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

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 any material covered by the AH01 component certificate with a painted or powder 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

SPECIFIC CONDITIONS OF USE: YES as shown below:
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 IECEx 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 IECEx 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.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1
Circuit revisions to core, LED and power pcbs, encapsulation removed from optional Bluetooth module. (Non-critical change) and conditions of manufacture amended.
Issue 2
Circuit revisions to power PCB, LCD display and modification of earthing requirements of enclosure.
Issue 3
Corrections to resistor calculations in Appendix A of report, Sections A.2.5 & A.4
Issue 4
Change of manufacturer's address, Technical documents new file format and document numbers and addition of non-safety critical SMD resistor components.
Issue 5
Incorporation of drawing reference corrections as per ID5002P_X001 Rev. A01x
Issue 6
Change of PCB track width. Technical documents new file format and document numbers.
Issue 7
Replacement of critical diodes.

Annex:

Annex to IECEx EMT 16.0006X is 7.pdf

Element Materials Technology,
Unit 1, Pendle Place,
Skelmersdale,
West Lancashire, WN8 9PN,
United Kingdom

Annex to IECEx Certificate of Conformity IECEx EMT 16.0006X issue No.: 7

Table of entity parameters

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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

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"Special 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.

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. 1500 V 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.

Manufacturer's Documents			
Title:	Drawing No.:	Rev. Level:	Date:
Technical File (12 pages)	ID5002P_X001	E00	2021-11-03
POW-PCB Schematic (12 pages)	ID5002P_X003	A01	2021-07-21
POW-PCB-POP Bill of materials (6 pages)	ID5002P_X004	A01	2018-02-08
COR-PCB Schematic (6 pages)	ID5002P_X005	A01	2021-10-19
COR-PCB Bill of materials (6 pages)	ID5002P_X006	A01	2021-06-10
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 (11 pages)	ID5002P_X010	B01	2021-12-13
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	A02	2021-10-19
LED-PCB layers	ID5002P_X015	A01	2019-09-18
POW-PCB layers (4 pages)	ID5002P_X016	A02	2021-10-18

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