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 CML 17.0125X**

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Certificate history:
Issue 2 (2019-04-29)
Issue 1 (2018-06-22)
Issue 0 (2017-11-02)

Status: **Current**

Issue No: 3

Date of Issue: 2020-05-21

Applicant: **Pulsar Process Measurement**
Cardinal Building
Enigma Commercial Centre
Sandy's Road
Malvern
WR14 1JJ
United Kingdom

Equipment: **mmWAVE-is**

Optional accessory:

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

Marking: Ex ia IIC T4 Ga
Ex ia IIIC T135°C Da

Ta: -20°C to +80°C

Approved for issue on behalf of the IECEx Certification Body: **R C Marshall**

Position: **Certification Officer**

Signature: (for printed version)

Date: 2020-05-21

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:

Eurofins E&E CML Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom

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Manufacturer: **Pulsar Process Measurement**
Cardinal Building
Enigma Commercial Centre
Sandy's Road
Malvern
WR14 1JJ
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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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
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/CML/ExTR17.0152/00 GB/CML/ExTR18.0144/00 GB/CML/ExTR19.0036/00
GB/CML/ExTR20.0118/00

Quality Assessment Report:

GB/SIR/QAR06.0030/10

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

The mmWAVE-is is a DC powered level measurement sensor utilising radar technology.

The sensor is housed in a non-metallic enclosure with integral five core cable which connects to control equipment located in the safe area providing power and data communication. The enclosure incorporates a threaded cap which allows the equipment to be mounted on a suitable bracket or flange.

Refer to Annex for full description and conditions of manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Refer to Annex for specific conditions of use.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1

This issue introduced the following changes:

1. Amendments to the equipment labelling and description
2. Modifications to the specification of the integral cable
3. Amendment of the minimum operating/ambient temperature to -20°C

Issue 2

This issue introduced the following changes:

1. The use of an alternative internal dome material
2. Update of standard to IEC60079-0 Ed.7
3. Minor circuit and PCB layout changes
4. The addition of an optional sub-shield for flange mounting

Issue 3

This issue introduced the following changes:

1. Minor change to the label that doesn't affect the certification

Annex:

IECEx CML 17.0125X Iss. 3 Certificate Annex.pdf

Annexe to:	**IECEx CML 17.0125X Issue 3**
Applicant:	**Pulsar Process Measurement**
Apparatus:	**mmWAVE-is**

Product Description

The mmWAVE-is is a DC powered level measurement sensor utilising radar technology. The sensor is housed in a non-metallic enclosure with integral five core cable which connects to control equipment located in the safe area providing power and data communication. The enclosure incorporates a threaded cap which allows the equipment to be mounted on a suitable bracket or flange.

Intrinsic safety is achieved by connecting to the non-hazardous area via intrinsically safe interface devices, and by encapsulation of the electronics and sensor.

The equipment has the following safety description:

Power Port			**Signal Port**			**RX port**			**TX port**		
Ui	=	28V	Ui	=	10V	Ui	=	10V	Ui	=	10V
Ii	=	120mA	Ii	=	200mA	Ii	=	200mA	Ii	=	200mA
Pi	=	0.83W	Pi	=	0.5W	Pi	=	0.5W	Pi	=	0.5W
Ci	=	5nF	Ci	=	0	Ci	=	0	Ci	=	0
Li	=	0	Li	=	0	Li	=	0	Li	=	0
						Uo	=	6.51V	Uo	=	6.51V
						Io	=	208mA	Io	=	208mA

The equipment is available with various power outputs represented by the dBRx marking on the label.

Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components, the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

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Conditions of Certification

The following conditions relate to safe installation and/or use of the equipment.

i. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

ii. The equipment shall be routinely inspected to avoid the build-up of dust layers when installed in a Zones 20, 21, or 22.

iii. The equipment shall only be connected to resistive intrinsically safe sources with minimum resistances as follows
   - Power connection R ≥ 234Ω
   - Signal connection R ≥ 50Ω
   - TX connection R ≥ 50Ω
   - RX connection R ≥ 50Ω

iv. When installing the equipment, the installer shall consider the length of integral cable attached to the equipment, in addition to any externally installed cable. The integral cable shall be considered to have parameters of 200pF/m, and 1µH/m or 30µH/Ω