



## EU Type Examination Certificate      CML 17 ATEX5228X    Issue 0

- 1    Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2    Equipment      **mmWAVE**
- 3    Manufacturer    **Pulsar Process Measurement**
- 4    Address          Cardinal Building,  
                         Enigma Commercial Centre  
                         Sandy's Road  
                         Malvern  
                         Worcestershire WR14 1JJ  
                         UK
- 5    The equipment is specified in the description of this certificate and the documents to which it refers.
- 6    Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, 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 equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

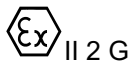
The examination and test results are recorded in the confidential reports listed in Section 12.

- 7    If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8    This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9    Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012+A11:2013

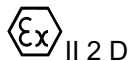
EN 60079-18:2015

- 10    The equipment shall be marked with the following:



Ex mb IIC T4 Gb

Ta = -20°C to +80°C



Ex mb IIIC T135°C Db

Ta = -20°C to +80°C



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## 11 Description

The mmWAVE 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.

The equipment is powered from a nominal 24Vdc power supply located in the safe area. The output of the sensor is sent via a signalling wire to external control equipment.

The equipment is fully encapsulated to allow use in areas requiring equipment protection levels Gb and Db and has the following ratings:

Um = 28Vdc (supply input)

Um = 6Vdc (signal connection)

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

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0		R11292B/00	Issue of prime certificate

Note: Drawings that describe the equipment or component are listed in the Annex.

## 13 Conditions of manufacture

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

- 13.1 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.
- 13.2 Each piece of equipment shall be visually inspected. No damage shall be evident, such as cracks in the compound, exposure of encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion, or softening.

## 14 Specific Conditions of Use (Special Conditions)

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

- 14.1 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 (e.g. steam generation or windblown dust). In addition, the equipment shall only be cleaned with a damp cloth.
- 14.2 The equipment must be routinely inspected to avoid the build-up of dust layers when installed in Zones 21 or 22.
- 14.3 The equipment should not be used if there are any cracks or damage to the enclosure.



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- 14.4 The power supply and signal connections to the equipment shall each incorporate a 100mA fuse located in the safe area. The fuses shall have a minimum breaking capacity of 1500A.
- 14.5 The equipment shall only be installed in areas where there is a low risk of mechanical danger.

## Certificate Annex



**Certificate Number** CML 17ATEX5228X  
**Equipment** mmWAVE  
**Manufacturer** Pulsar Process Measurement

The following documents describe the equipment or component defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
D-804-1270-A	1 of 1	-	12/06/2018	mmWAVE dBR16 Radar Ex mb hazardous area protection
D-804-1264-A	1 to 2	A	12/06/2018	mmWAVE dBR16 Protection PCB layout
D-804-1246-A	1 of 1	A	12/06/2018	mmWAVE dBR16 Protection V1.0 Haz area schematic
D-804-1243-A	1 of 1	A	12/06/2018	mmWAVE dBR16 radar module
D-804-1241-C	1 of 1	C	12/06/2018	mmWAVE dBR series Ex mb wraparound label
D-804-1293-A	1 of 1	-	12/06/2018	mmWAVE dBR16 Radar general arrangement
D-804-1240-B	1 of 1	B	12/06/2018	mmWAVE dBR16 Radar housing base
D-804-1261-A	1 to 4	A	12/06/2018	mmWAVE dBR16 CPU PCB layout
D-804-1260-A	1 to 2	A	12/06/2018	mmWAVE dBR16 CPU V1.1 Haz area schematic
D-804-1245-C	1 of 1	C	12/06/2018	mmWAVE dBRxx Radar cable assembly Ex mb
D-804-1238-A	1 of 1	-	12/06/2018	mmWAVE dBR16 Radar cap BSP
BOM-0021-A	1 of 1	1.1	12/06/2018	Controlled Bill of Materials mmWAVE Ex mb dBR-xx series
A-301-0163-A	1 of 1	1.0	12/06/2018	mmWAVE dBR16 Protection V1.0 hazardous area BOM
D-804-1239-A	1 of 1	A	12/06/2018	mmWAVE dBR16 Radar cap NPT
D-804-1230-B	1 of 1	B	12/06/2018	mmWAVE dBR16 Polysulfone dome