

UK Type Examination Certificate CML 22UKEX2378X Issue 0

United Kingdom Conformity Assessment

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Reflect**
- 3 Manufacturer **Pulsar Process Measurement Limited**
- 4 Address **Cardinal Building,
Enigma Commercial Centre,
Sandys Road, Malvern,
Worcestershire, WR14 1JJ,
United Kingdom** **Unit 5, Lancaster Way,
Earls Colne Business Park,
Earls Colne,
Essex, CO6 2NS,
United Kingdom**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

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 specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.

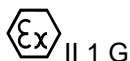
8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

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 IEC 60079-0:2018

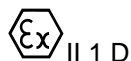
EN 60079-11:2012

10 The equipment shall be marked with the following:



Ex ia IIC T4 Ga

Tamb = -40°C to +80°C



Ex ia IIIC T100°C Da

Tamb = -40°C to +80°C





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11 Description

The Reflect is a two-wire DC powered level measurement sensor utilising radar technology. The sensor is housed in a non-metallic enclosure with integral two core cable which connects, via a suitably certified barrier, to control equipment located in the safe area. The enclosure incorporates a threaded boss which allows the equipment to be mounted on a suitable bracket or flange, and LED indicators mounted in the enclosure wall.

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

The equipment has the following safety description:

U_i = 28V
I_i = 162mA
P_i = 0.85W
C_i = 0
L_i = 0

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0		R15397A/00	Issue of prime certificate

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

13 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 of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

14 Specific Conditions of Use

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. When installing the equipment, the installer shall consider the length of the 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

Certificate Annex

Certificate Number CML 22UKEX2378X
Equipment Reflect
Manufacturer Pulsar Process Measurement Limited



The following documents describe the equipment defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
D-804-1427-C	1 of 1	C	22 Sep 2022	Reflect block diagram Ex ia /IS
D-804-1431-C	1 of 1	C	22 Sep 2022	Pulsar Reflect-IS sensor, Exia, IECEx, ATEX, UKEx haz. area label
D-804-1421-D	1 of 1	D	22 Sep 2022	Pulsar Reflect General Assembly Drawing
D-804-1445-B1	1 of 2	B	22 Sep 2022	Reflect CPU V1 Circuit
D-804-1445-B2	2 of 2	B	22 Sep 2022	Reflect CPU V1 Circuit
A3010177C	1 of 1	1.2	22 Sep 2022	Reflect CPU haz. Area BOM
D-804-1446-A	1 of 3	A	22 Sep 2022	Reflect CPU PCB, A-301-0177-C, top silk screen and top copper
D-804-1446-A	2 of 3	A	22 Sep 2022	Reflect CPU PCB, A-301-0177-C, bottom silk screen and bottom copper
D-804-1446-A	3 of 3	A	22 Sep 2022	Reflect CPU PCB, A-301-0177-C, ground plane and power plane negatives
D-804-1447-A	1 of 1	A	22 Sep 2022	Reflect LEDs board circuit. Haz. area
A3010174A	1 of 1	1.0	22 Sep 2022	Reflect LED board haz. Area BOM
D-804-1448-A	1 of 1	A	22 Sep 2022	Reflect LEDs PCB A-301-0174-A, silkscreens and bottom copper