



Type Examination Certificate **CML 17ATEX3309X Issue 0**


- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **smartPIMS**
- 3 Manufacturer **Sensor Networks, inc.**
- 4 Address 176 Technology Drive
Suite 500
Boalsburg, PA 16827
USA
- 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, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design of equipment intended for use in potentially explosive atmospheres given in Annex II of Directive 2014/34/EU.

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 certification (affecting correct installation or safe use). These are specified in Section 14.
- 8 This Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Annex VIII apply to the manufacture of the equipment or component.
- 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 60079-7:2015

- 10 The equipment shall be marked with the following:

 II 3 G

Ex ec IIC T4 Gc

-20°C ≤ Ta ≤ +60°C



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11 Description

The smartPIMS corrosion/erosion monitoring system measures the wall thickness of industrial components such as pipes and pressure vessels. The wall thickness is measured by up to 16 ultrasonic transducers which are directly connected to the signal conditioning boards and transmitter, all mounted inside an aluminium, flameproof enclosure.

The smartPIMS is either battery-powered by two (2), Lithium-Thionyl-Chloride, Primary D-Cell batteries or a user-provided, separately-certified 10-20 Vdc power supply. The communications from the smartPIMS transmitter is either wireless (cellular network) or Modbus (wired).

The antenna is threaded into one of the entries with the sensors and/or power connections are routed through the other entry. The antenna uses a threaded bushing/reducer which is mounted and sealed with RTV at the factory. The sensors are fitted through a separately-certified cable gland at the factory – for the battery powered option. When the external power supply option is selected, the end user is responsible for selecting and installing an appropriate cable gland which provides the IP66 rating.

12 Certificate history and evaluation Reports

Issue	Date	Associated report	Notes
0	18 Jan 2018	R21019A/00	Initial release

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 The smartPIMS is to be designed and manufactured in accordance with general electrical safety standards e.g. IEC 60950.

14 Special Conditions for Safe Use (Conditions of Certification)

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

- 14.1 An appropriately-certified Ex e or Ex nA cable gland shall be used which provides the ingress protection rating of IP66.
- 14.2 From IECEx UL 08.0005U (Adalet enclosure): To minimize the risk of electrostatic charge, the smartPIMS shall be grounded and installed so that accidental discharge shall not occur.
- 14.3 For the external power supply option only: The 10-30 V rated supply shall be protected such that transients are limited to a maximum of 90 V; no such protection is required for the sensor conductors. No additional protection is required if an SELV or PELV power supply is used as the 10-30 Vdc source.

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Version: 8.0 Approval: Approved



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- 14.4 For the external power supply option only: The power connection shall be routed through separate cable from the sensors.

Certificate Annex

Certificate Number CML 17ATEX3309X
Equipment smartPIMS
Manufacturer Sensor Networks, Inc.



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

Issue 0

	Drawing No	Sheets	Rev	Approved date	Title
01	REF-010394	1 to 6	C	18 Jan 2018	General Arrangement Drawing, smartPIMS
02	06-010490	1 of 1	A	18 Jan 2018	Antenna bushing
03	07-020022	1 to 5	D	18 Jan 2018	UT Board Schematic
04	07-020032	1 to 2	C	18 Jan 2018	Interface Board Schematic
05	07-020122	1 of 1	B	18 Jan 2018	DSI Battery Board Schematic
06	REF-010395	1 of 1	B	18 Jan 2018	General Arrangement Drawing, XD-201
07	10-010247	1 of 1	A	18 Jan 2018	Label - smartPIMS ATEX/IECEX