1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Component intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **CSANe 23ATEX1144U** Issue: **0**

4 Component: **4-Series PID sensor, Model number: 4PID-50C, 4PID-200C, 4PID-2000C and 4PID-10000C**

5 Applicant: **SemeaTech (Shanghai) Co., Ltd.**

6 Address: 1355 Chengbei Road
Bldg#1-416,805
Jiading, Shanghai
China

7 This component and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V. notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of a component 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 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-11:2012

10 The sign 'U' is placed after the certificate number to indicate that the product assessed is a component and may be subject to further assessment when incorporated into equipment. Any limitations of use are listed in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

12 The marking of the component shall include the following:

II 1G
Ex ia IIC Ga

Signed: M Halliwell

Title: Director of Operations

PRODUCTS RvA C 652

SCHEDULE

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13 DESCRIPTION OF COMPONENT

The 4-Series PID Sensor is a cylindrically shaped sensor that has a physical size of Ø20.2mm * 22.15mm. Its electrical interface port is a three poled connector at the bottom of the sensor module. The sensor is a photo-ionization detection type. The PID sensor consists of an ultraviolet (UV) lamp and one pair of electrodes positioned in front of the UV lamp, with a built-in high voltage module. The UV lamp emits photons to ionize gases, and the measurement electrodes collect the ionization current resulting from charged molecules. The electrical amplifier circuit amplifies the sensor signal and the sensor module output signal. It is powered by nominal source voltage of 5Vdc.

The 4-Series PID sensor can be connected to a standard 3-pin sensor connector on a PCB mounted within a measurement system that requires the PID input. The pinouts of the sensor are defined as follows:

Pins	Description
Pin 1	VCC
Pin 2	GND
Pin 3	Vout

The sensor has the following entity parameters:

Input Parameter	
Ui	5.89Vdc
Ii	2.0A
Pi	1.2W
Ci	10.0µF
Li	1µH

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	09 November 2023	R80161831A	The release of the prime certificate.

15 SCHEDULE OF LIMITATIONS

15.1 The sensor shall be supplied by an intrinsically safe supply coded Ex ia considering entity parameters in the product description.

15.2 The component meets the temperature class T4 if the permitted range of the service temperature at the location of installation is -20°C to +50°C.

15.3 The sensor shall be installed in an additional enclosure that provides a minimum degree of ingress protection of IP20 or greater, according to the intended use and environmental conditions. The sensor is not intended to form part of the external enclosure for the complete equipment in which it is installed.

15.4 When the sensor is installed in an enclosure containing other devices, care should be taken to ensure that the segregation between the circuit associated with the sensor and other circuits complies with EN 60079-11.

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16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU

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Certificate Annexe

Certificate Number: **CSANe 23ATEX1144U**

Component: **4-Series PID sensor, Model number: 4PID-50C, 4PID-200C, 4PID-2000C and 4PID-10000C**

Applicant: **SemeaTech (Shanghai) Co., Ltd.**

Issue 0

Drawing	Sheets	Rev.	Date (Stamp)	Title
099-30/1/2/300-000D3	1 of 1	A0	12 Oct 23	4-Series PID Sensor Module
099-30/1/2/300-000D1	1 of 1	A0	12 Oct 23	Sensor Module,4-Series PID assembly drawing
700-0013-000/1/2/3/4/5/6/7	1 of 1	A0	08 Nov 23	4-Series PID label
901-E300-019	1 to 3	3	31 Jul 23	4-Series PID Block Diagram
901-E300-017	1 of 1	5	31 Jul 23	Equivalent circuit for 4-Series PID
S03-1012-000-SCH	1 of 1	4	31 Jul 23	4-Series PID High voltage & Bias voltage SCH
S01-1010-000-SCH	1 of 1	5	31 Jul 23	4-Series PID Signal & Power SCH
S03-1012-000	1 to 5	4	12 Oct 23	4-Series PID High voltage & Bias voltage PCB
S01-1010-000	1 to 7	5	12 Oct 23	4-Series PID Signal & Power PCB
S03-1012-000-BOM	1 to 2	5	31 Jul 23	4-Series PID High voltage & Bias voltage PCB BOM
S01-1010-000-BOM	1 to 3	4	07 Aug 23	4-Series PID Signal and Power PCB BOM