(1) EU-Type Examination Certificate

Product Service

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 2014/34/EU**

(3) EU Certificate Number:

TPS 18 ATEX 18013 014 X Rev1

(4) Equipment: Sound Velocity Sensor
Type: L-Sonic Series 5100 / 6100

(5) Manufacturer: Anton Paar GmbH

(6) Address: Anton-Paar-Straße 20
8054 Graz
Österreich

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

(8) TÜV SÜD Product Service as notified body No. 0123 according to article 17 of the guideline 2014/34/EU of the European Parliament and the Council of the European Union certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive.
The examination and test results are recorded in the confidential report 71383322_T.

(9) Compliance with the Essential Health and Safety Requirements has been assured by the following standards:

IEC 60079-0:2017	**IEC 60079-1:2014**
EN 60079-0:2012	**EN 60079-0:2012/A11:2013**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

Ex II 2G Ex db IIB T4/T5 Gb

Certification Body for explosion protection
Ridlerstrasse 65, 80339 München

München, 09.03.2020

Dipl.-Ing. (FH) Arno Butzke

Product Service

(13) **Schedule**

(14) **EU-Type Examination Certificate TPS 18 ATEX 18013 014 X** Rev1

(15) Description of equipment:

The Sound Velocity Sensors series L-Sonic 5100/6100 are process measuring instruments that are used to measure the sound velocity in liquids. The sensor consists of the sensing element and a sensor board, which is connected to the sensing element with a feedthrough. The sensor board is connected to the process instrumentation controller (Pico 3000) or to an external evaluation unit. The Pico 3000 can be installed in the electronic housing of the sensor or in an optional remote operating housing (Pico 3000 RC). The Pico 3000 can be used with an optional HMI (Pico 3000 HMI).

Note: Pico 3000 is already certified by TPS 18 ATEX 18013 013 X.

Type Classification / Marking

Model	Marking and Values
L-Sonic 5100 VN SST L3 Ex d L-Sonic 5100 VN SST L3 NPT Ex d L-Sonic 5100 DN SST L3 Ex d L-Sonic 5100 DN SST L3 NPT Ex d	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -25°C to +65°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}:16 bar; IP66
L-Sonic 5100 VN SST L3 Ex d (with Pico 3000) L-Sonic 5100 VN SST L3 NPT Ex d (with Pico 3000) L-Sonic 5100 DN SST L3 Ex d (with Pico 3000) L-Sonic 5100 DN SST L3 NPT Ex d (with Pico 3000)	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -25°C to +65°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 16 bar; IP66
L-Sonic 5100 VN SST L3 Ex d (with Pico 3000 and HMI) L-Sonic 5100 VN SST L3 NPT Ex d (with Pico 3000 and HMI) L-Sonic 5100 DN SST L3 Ex d (with Pico 3000 and HMI) L-Sonic 5100 DN SST L3 NPT Ex d (with Pico 3000 and HMI)	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -20°C to +55°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 16 bar; IP66
L-Sonic 5100 EN AAA L6 Ex d L-Sonic 5100 EN AAA L6 NPT Ex d L-Sonic 5100 AN AAA L6 Ex d L-Sonic 5100 AN AAA L6 NPT Ex d L-Sonic 5100 CF CL Ex d L-Sonic 5100 CF CL NPT Ex d *Where AAA denotes material options:* *SST - Stainless Steel 1.4404* *HAS - HASTELLOY® HYBRID-BC1® alloy* *MON - Monel 400* *ROC - Rhodium coated*	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -25°C to +65°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 16 bar; IP66
L-Sonic 5100 EN AAA L6 Ex d (with Pico 3000)	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -25°C to +65°C

Product Service

Model	Marking and Values
L-Sonic 5100 EN AAA L6 NPT Ex d (with Pico 3000) L-Sonic 5100 AN AAA L6 Ex d (with Pico 3000) L-Sonic 5100 AN AAA L6 NPT Ex d (with Pico 3000) L-Sonic 5100 CF CL Ex d (with Pico 3000) L-Sonic 5100 CF CL NPT Ex d (with Pico 3000) *Where AAA denotes material options:* *SST - Stainless Steel 1.4404* *HAS - HASTELLOY® HYBRID-BC1® alloy* *MON - Monel 400* *ROC - Rhodium coated*	T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max} acc. to flange spec.; IP66
L-Sonic 5100 EN AAA L6 Ex d (with Pico 3000 and HMI) L-Sonic 5100 EN AAA L6 NPT Ex d (with Pico 3000 and HMI) L-Sonic 5100 AN AAA L6 Ex d (with Pico 3000 and HMI) L-Sonic 5100 AN AAA L6 NPT Ex d (with Pico 3000 and HMI) L-Sonic 5100 CF CL Ex d (with Pico 3000 and HMI) L-Sonic 5100 CF CL NPT Ex d (with Pico 3000 and HMI) *Where AAA denotes material options:* *SST - Stainless Steel 1.4404* *HAS - HASTELLOY® HYBRID-BC1® alloy* *MON - Monel 400* *ROC - Rhodium coated*	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -20°C to +55°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max} acc. to flange spec.; IP66
L-Sonic 5100 DN40 GOC Ex d L-Sonic 5100 DN40 GOC NPT Ex d L-Sonic 5100 DN40 GOC Ex d (with Pico 3000) L-Sonic 5100 DN40 GOC NPT Ex d (with Pico 3000)	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -25°C to +55°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 16 bar; IP66
L-Sonic 5100 DN40 GOC Ex d (with Pico 3000 and HMI) L-Sonic 5100 DN40 GOC NPT Ex d (with Pico 3000 and HMI)	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -20°C to +55°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 16 bar; IP66
L-Sonic 6100 D1 SST LS Ex d L-Sonic 6100 D1 SST LS NPT Ex d	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -25°C to +65°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 100 bar for $T_p \leq 50$°C; IP 66 70 bar for $T_p \leq 125$°C; IP66
L-Sonic 6100 D1 SST LS Ex d (with Pico 3000)	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -25°C to +55°C

Product Service

Model	Marking and Values
L-Sonic 6100 D1 SST LS NPT Ex d (with Pico 3000)	T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 100 bar for $T_p \leq 50°C$; IP66 70 bar for $T_p \leq 125°C$; IP66
L-Sonic 6100 D1 SST LS Ex d (with Pico 3000 and HMI) L-Sonic 6100 D1 SST LS NPT Ex d (with Pico 3000 and HMI)	Ⓔx II 2G Ex db IIB T4/T5 Gb T_a= -20°C to +55°C T_p= -25°C to +95°C for T5 and -25°C to +125°C for T4 p_{max}: 100 bar for $T_p \leq 50°C$; IP66 70 bar for $T_p \leq 125°C$; IP66

Electrical Data:

Nominal Voltage: 24 Vdc ± 20%
Nominal Power: max. 4 W / max. 7W (Pico 3000)

(16) Test report: 713183322_T

(17) Special conditions for safe use:

The limitation of the ambient temperature for the sensor, the sensor with Pico 3000 and the sensor with Pico 3000 + Pico 3000 HMI is different:
Sensor: T_a = -25°C to +65°C
Sensor with Pico 3000: T_a = -25°C to +55°C
Sensor with Pico 3000 and HMI: T_a = -20°C to +55°C.

Routine tests:
IEC 60079-1:2014, cl. 16.1.2 Routine overpressure test – first method:
Each and every L-Sonic sound velocity module 6100 shall be tested either by applying 150 bar overpressure test, or by one of the inspection methods listed in IEC 60079-1, Clause 16.3.

For power cable, use only a cable whose thermal stability of its insulation is minimum 90°C.
For cable entrances use only already certified Ex d or Ex db cable glands suitable for application and rated for a minimum of 80°C. Unused openings shall be closed by use of already certified Ex d or Ex db stopping plugs suitable for application and rated for a minimum of 80°C.

(18) Essential health and safety requirements:

met by standards

Certification Body of explosion protection

München, 09.03.2020

Dipl.-Ing. (FH) Arno Butzke