



Product Service

# (1) EU-Type Examination Certificate

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

(3) EC Certificate of Conformity Number:

**TPS 18 ATEX 18013 013 X Rev. 01**



(4) Equipment: Density Sensor  
Type: L-Dens 7000 Series in "db"

(5) Manufacturer: Anton Paar GmbH

(6) Address: Anton-Paar-Strasse 20  
8054 Graz  
Austria

(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 Directive 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 TB\_713183321.

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

**EN 60079-0:2012/A11:2013**

**EN 60079-1:2014**

**IEC 60079-0:2017**

**IEC 60079-1:2014**

(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, 08.04.2020

Dipl.-Ing. (FH) Arno Butzke

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Type Examination Certificate without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by TÜV SUD Product Service.  
TRANSLATION - In case of dispute, the German text shall prevail. The document is administrated under the following number:  
EX5A 18 03 18013 013 Rev01

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(13)

### Schedule

(14) **EU-Type Examination Certificate TPS 18 ATEX 18013 013 X Rev. 01**

(15) Description of equipment:

The L-Dens 7000 density sensors series (L-Dens 7300 / 7400 / 7500) are process measuring instruments that are used to measure the density values of liquids. The sensor consists of the encapsulated 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).

Type Classification / Marking

Model	Marking
L-Dens 7300 SST Petro Ex d L-Dens 7300 SST Petro NPT Ex d L-Dens 7300 SST Petro Ex d (with Pico 3000) L-Dens 7300 SST Petro NPT Ex d (with Pico 3000) SST denotes the material: SST - Stainless Steel 1.4404	II 2G Ex db IIB T4/T5 Gb T <sub>a</sub> = -40°C to +70°C T <sub>p</sub> = -40°C to 95°C for T5 und -40°C to 125°C for T4 Maximum process pressure: 50 bar
L-Dens 7300 SST Petro Ex d (with Pico 3000 and HMI) L-Dens 7300 SST Petro NPT Ex d (with Pico 3000 and HMI) SST denotes the material: SST - Stainless Steel 1.4404	II 2G Ex db IIB T4/T5 Gb T <sub>a</sub> = -20°C to +60°C T <sub>p</sub> = -40°C to +95°C for T5 and -40°C to +125°C for T4 Maximum process pressure: 50 bar
L-Dens 7400 AAA Ex d L-Dens 7400 AAA NPT Ex d L-Dens 7400 AAA Ex d (with Pico 3000) L-Dens 7400 AAA NPT Ex d (with Pico 3000) AAA denotes material options: HAS - Hastelloy C-276 SST - Stainless Steel 1.4404 TAN - Tantalum INC - Incoloy 825	II 2G Ex db IIB T4/T5 Gb T <sub>a</sub> = -40°C to +70°C T <sub>p</sub> = -40°C to +95°C for T5 and -40°C to +125°C for T4 Maximum process pressure: 50 bar
L-Dens 7400 AAA Ex d (with Pico 3000 and HMI) L-Dens 7400 AAA NPT Ex d (with Pico 3000 and HMI) AAA denotes material options: HAS - Hastelloy C-276 SST - Stainless Steel 1.4404	II 2G Ex db IIB T4/T5 Gb T <sub>a</sub> = -20°C to +60°C T <sub>p</sub> = -40°C to +95°C for T5 and -40°C to +125°C for T4 Maximum pressure: 50 bar

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Model	Marking
TAN - Tantalum INC - Incoloy 825	
L-Dens 7400 HAS HP Ex d L-Dens 7400 HAS HP NPT Ex d (High Pressure version) L-Dens 7400 HAS HP Ex d (with Pico 3000) L-Dens 7400 HAS HP NPT Ex d (with Pico 3000) (High Pressure version) HAS denotes the material: HAS - Hastelloy C-276	II 2G Ex db IIB T4/T5 Gb $T_a = -40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ $T_p = -40^{\circ}\text{C}$ to $+95^{\circ}\text{C}$ for T5 and $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ for T4  Maximum process pressure: 180 bar for $T_p \leq 70^{\circ}\text{C}$ 140 bar for $T_p \leq 125^{\circ}\text{C}$
L-Dens 7400 HAS HP Ex d (with Pico 3000 and HMI) L-Dens 7400 HAS HP NPT Ex d (with Pico 3000 and HMI) (High Pressure version) HAS denotes the material: HAS - Hastelloy C-276	II 2G Ex db IIB T4/T5 Gb $T_a = -20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ $T_p = -40^{\circ}\text{C}$ to $+95^{\circ}\text{C}$ for T5 and $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ for T4  Maximum process pressure: 180 bar for $T_p \leq 70^{\circ}\text{C}$ 140 bar for $T_p \leq 125^{\circ}\text{C}$
L-Dens 7500 HAS Ex d L-Dens 7500 HAS NPT Ex d L-Dens 7500 HAS Ex d (with Pico 3000) L-Dens 7500 HAS NPT Ex d (with Pico 3000) HAS denotes the material: HAS - Hastelloy C-276	II 2G Ex db IIB T4/T5 Gb $T_a = -40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ $T_p = -40^{\circ}\text{C}$ to $+95^{\circ}\text{C}$ for T5 and $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ for T4  Maximum process pressure: 50 bar
L-Dens 7500 HAS Ex d (with Pico 3000 and HMI) L-Dens 7500 HAS NPT Ex d (with Pico 3000 and HMI) HAS denotes the material: HAS - Hastelloy C-276	II 2G Ex db IIB T4/T5 Gb $T_a = -20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ $T_p = -40^{\circ}\text{C}$ to $+95^{\circ}\text{C}$ for T5 and $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ for T4  Maximum pressure: 50 bar
Pico 3000 RC Ex d (with Pico 3000 and HMI) Pico 3000 RC NPT Ex d (with Pico 3000 and HMI)	II 2G Ex db IIB T5 Gb $T_a = -20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$

Electrical Data:

Nominal Voltage:	24 Vdc $\pm$ 20% (Safety extra low voltage SELV)	
Nominal Power:	without Pico 3000	with Pico 3000
	max. 2 W	max. 5 W

(16) Test report: TB\_713183321

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Product Service

(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:

L-Dens 7000:  $T_a = -40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

L-Dens 7000 with Pico 3000:  $T_a = -40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

L-Dens 7000 with Pico 3000 and Pico 3000 HMI:  $T_a = -20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$

According to EN 60079-1:2014 cl. 16.1.2, the following routine tests shall be carried out:

- Static overpressure test with 13 bar on all oscillator tubes or one of the inspection methods listed in EN 60079-1, Clause 16.3
- Hydrostatic overpressure test with 75 bar on all oscillator tubes
- Hydrostatic overpressure test 270 bar on all oscillator tubes for L-Dens 7400 HAS HP models.

For power cable, use only a cable whose thermal stability of its insulation is minimum  $90^{\circ}\text{C}$ .

For cable entrances use only already certified Ex d or Ex db cable glands suitable for application and rated for a minimum of  $80^{\circ}\text{C}$ .

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  $80^{\circ}\text{C}$

(18) Essential health and safety requirements:

met by standards

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