



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

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

(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 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 713099564_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/A1:2013

(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

Office of certification of explosion protection

München, 28.03.2018


Dipl.-Ing. Ulrich Jacobs





- (13) **Schedule**
- (14) **EU-Type Examination Certificate TPS 18 ATEX 18013 013 X**
- (15) Description of equipment:

The L-Dens 7000 density sensors series (L-Dens 7400 / L-Dens 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 process instrument controller, which is connected to the sensing element with a feedthrough. The process instrument controller includes an HMI Variant, Pico 3000 HMI and a non HMI version Pico 3000. As an option, the process instrument controller can be a separate unit, Pico 3000 RC, connected to the L-Dens 7000 sensor with a cable.

Sensor models with the HMI are differentiated from non-HMI models by ambient temperature rating, whereby HMI version = $T_a = -20^\circ\text{C}$ to $+60^\circ\text{C}$ and non-HMI version = $T_a = -40^\circ\text{C}$ to $+70^\circ\text{C}$. The oscillator tube is the "Containment System".

Type Classification / Marking

Model	Marking and Values
L-Dens 7400 AAA Ex d L-Dens 7400 AAA NPT Ex d „AAA“ = Material options: HAS, SST, TAN, INC	Ex 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°C for T5 and -40°C to 125°C for T4 Maximum pressure: 50 bar
L-Dens 7400 AAA Ex d (with HMI) L-Dens 7400 AAA NPT Ex d (with HMI) „AAA“ = Material options: HAS, SST, TAN, INC	Ex II 2G Ex db IIB T4/T5 Gb $T_a = -20^\circ\text{C}$ bis $+60^\circ\text{C}$ $T_p = -40^\circ\text{C}$ to 95°C for T5 and -40°C to 125°C for T4 Maximum pressure: 50 bar
L-Dens 7400 HAS HP Ex d L-Dens 7400 HAS HP NPT Ex d (High Pressure Version)	Ex 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°C for T5 and -40°C to 125°C for T4 Maximum 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 HMI) L-Dens 7400 HAS HP NPT Ex d (with HMI)	Ex 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°C for T5 and -40°C to 125°C for T4 180 bar to $T_p \leq 70^\circ\text{C}$ 140 bar to $T_p \leq 125^\circ\text{C}$
L-Dens 7500 HAS Ex d L-Dens 7500 HAS NPT Ex d	Ex II 2G Ex db IIB T4/T5 Gb



Product Service

Model	Marking and Values
	$T_a = -40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ $T_p = -40^{\circ}\text{C}$ to 95°C for T5 and -40°C to 125°C for T4 Maximum pressure: 50 bar
L-Dens 7500 HAS Ex d (with HMI) L-Dens 7500 HAS NPT Ex d (with HMI)	Ex 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°C for T5 and -40°C to 125°C for T4 Maximum pressure: 50 bar
Pico 3000 RC Ex d (with HMI) Pico 3000 RC NPT Ex d (with HMI)	Ex 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%

Nominal Power: max. 2 W / max. 5W (Pico 3000)

(16) Test report: 713099564_T

(17) Special conditions for safe use:

The specified ambient temperature range which deviates from the standard temperature range, is $-20^{\circ}\text{C} \leq T_{\text{amb}} < +60^{\circ}\text{C}$ for HMI models and $-40^{\circ}\text{C} \leq T_{\text{amb}} < +70^{\circ}\text{C}$ for non-HMI models.

According to IEC 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 IEC 60079-1, Clause 16.3
- Hydrostatic overpressure test with 75 bar on all oscillator tubes (except as noted below)
- Hydrostatic overpressure test with 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°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

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