

# 1<sup>st</sup> Supplement

to

## EC - Type Examination Certificate

### TÜV 12 ATEX 7226 X



**Device:** Displacer Level Transducer  
Type: DLT9000 and DLT9010

**Manufacturer:** Dandong Top Electronics Instrument Group Co. Ltd  
**Address:** No.10 Huanghai Street, Zhenxing District, Dandong City  
Liaoning Province, 118000, China

#### Description of supplements and modifications:

(15) The following modifications are valid for this 1st Supplement

Standard basis:

EN 60079-0:2012; EN 60079-1:2014; EN 60079-11:2012

Code for type of protection

 II 2 G Ex db IIC T5/T6 Gb  
T5:  $-40^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$  T6:  $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

 II 2 G Ex ia IIC T5 Gb(-40°C ≤ Ta ≤ +80°C)

#### 15.1 Equipment and Type

Displacer Level Transducer Type: DLT9000 and DLT9010.

#### 15.2 Description

General product information

DLT9000 and DLT9010 Displacer Level Transducer is a measuring instrument used for measuring level, interface and density, based on microprocessor.

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Not only can DLT9000 and DLT9010 output 4~20mA current signal, it also makes advantage of HART communication to easily access important processing information. It is compatible with 375 or 475 HART communicator or HARTMPT software to get information about processing variable, level transducer or level sensor on the worksite or from terminal box. The HART description document (DD) of DLT9000 and DLT9010 has been registered and can be integrated with any HART function (7.0 version or above) control system.

The DLT9000 and DLT9010 Displacer Level Transducer is protected by a flameproof enclosure type "db", whereas the electronic module can additionally be assessed as "intrinsic safe" if it is supplied by an "intrinsic safe" source. The assessment of the Displacer Level Transducer type DLT9000 and DLT9010 was done within the IECEx test report DE/TUR/ExTR15.0042/00.

The DLT9000 and DLT9010 Displacer Level Transducer is intended to be used in zone 1 and zone 2 only, whereas the mechanical part of the application, the Displacer Level Transducer itself and the subassembly for the connection to the DLT9000 and DLT9010, can be located in zone 0. The mechanical part is not in the scope of this report.

Displacer Level Transducer type DLT9000 and DLT9010 is protected by type "db" and "ia" with IP66 enclosure. The flameproof enclosure is comprised of a transmitter enclosure, a power enclosure cap, a display cover and a magnet enclosure. All the metallic parts of enclosure are made from ADC12 (aluminium alloy) and LCD window is made of toughened glass.

**Details of change:**

- Normative update according EN 60079-0:2009 to EN 60079-0:2012; according EN 60079-1:2007 to EN 60079-1:2014; according EN 60079-11:2007 to EN 60079-11:2012 for Displacer Level Transducer type DLT9000.

- Add the new type DLT9010.

Only the circuit design of the measurement board of DLT9010 is different from DLT9000.

1. The Li was changed from 22 $\mu$ H to 0 $\mu$ H.

2. The zener diodes of measurement board was changed from V5-V7, V14-V16, V19-V27 (1N4733A 5.1V@1W $\pm$ 5%) to D310 and D311 (1SMB5918BT3G@1.5W 5.1V $\pm$ 5%), and D304, D305, D308, D309, D312~D315 (MMSZ4684T1@0.5W 3.3V $\pm$ 5%).

The assessment of the Displacer Level Transducer type DLT9000 and DLT9010 was done within the IECEx test report DE/TUR/ExTR15.0042/00.

- Intrinsically safe parameters:

DLT9000: Ui: 30V DC li: 93mA Pi: 0.7W Ci: 0 $\mu$ F Li: 22 $\mu$ H

DLT9010: Ui: 30V DC li: 93mA Pi: 0.7W Ci: 0 $\mu$ F Li: 0 $\mu$ H

- Except that the measurement board, there is no any technical changes and modifies on product design (including flameproof enclosure, electrical parameters, electrical connections, work conditions, product's construction and the production technologies etc.).

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### 15.3 Technical Data

#### Parameters

Electrical parameters

Rated voltage: 12V~30VDC(Type of protection "db")

Intrinsically safe parameters(Type of protection "ia"):

DLT9000: Ui: 30V DC Ii: 93mA Pi: 0.7W Ci: 0µF Li: 22µH

DLT9010: Ui: 30V DC Ii: 93mA Pi: 0.7W Ci: 0µF Li: 0µH

Thermal parameters

Rated ambient temperature range (°C):

Ex db IIC T5/T6 Gb T5:  $-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$  T6:  $-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$  ;

Ex ia IIC T5 Gb( $-40^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$ );

Refer to annex in the user manual for detailed information.

(16) **Test Report No.** 557 / Ex 226.01 / 12

Parts of the device, which already fulfill the requirements for the category, were not approved and assessed by TÜV Rheinland Industrie Service.

The applicability and assembly of mechanical and electrical parts and components were assessed and approved by TÜV Rheinland Industrie Service with respect to the requirements of explosion protection.

(17) **Special conditions for safe use**

The original certificate has to be observed.

1. Repair of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repair must not be made on the basis of values specified in table 3 and table 4 of IEC 60079-1:2014.
2. The assembly shall be equipped with IECEx certified cable glands with a compatible type of protection for the intended use.
3. If the apparatus is used as type of protection "i", it must be powered by a safety barrier with compatible intrinsically safe output parameters and this safety barrier should be located in a safety area.
4. The Equipment is in Equipment Protection Level Gb and is intended for use in Explosive Atmosphere classified as Zone 1 or Zone 2 only.

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(18) **Basic Safety and Health Requirements**

Covered by mentioned standards in the original certificate.

TÜV Rheinland ExNB for explosion protected equipment

Cologne, 2015-12-21

  
Dipl.-Ing. Klauspeter Graffi

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