

Issued by NMI Certin B.V.

In accordance with

- WELMEC 8.8, 2017 "Guide on the General and Administrative Aspects of the Voluntary System of Modular Evaluation of Measuring instruments";
- OIML R117-1 Edition 2007 (E) "Dynamic measuring systems for liquids other than water";
- EN 12405-1 2005+A2 2010 "Gas meters – Conversion devices – Part 1: volume conversion".

Producer

ABB AG  
Schillerstraße 72  
32425 Minden  
Germany

Measuring  
instrument

A **temperature transducer** for connecting one or two 4 wire Pt100 temperature probes intended to be used as a part of a measuring instrument.

Type designation	: TTF300
Software version	: See the description
OIML R117-1 Accuracy class	: 0,3
OIML R117-1 Environment classes	: M3 / E2
Temperature range ambient	: -10 °C / +70 °C

- Further properties and test results are described in the annexes:
- Description TC10833 revision 3;
  - Documentation folder TC10833-3.

Initially issued

28 December 2016.

Remark

This revision replaces the previous revisions.  
The documentation folder replaces the documentation folder.

Issuing Authority

**NMI Certin B.V., Notified Body number 0122**  
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Certification Board

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## 1 General information about the temperature transducer

All properties of the instrument, whether mentioned or not, shall not be in conflict with the legislation.

This Parts Certificate is the positive result of the applied voluntary, modular approach, for a component of a measuring instrument, as described in WELMEC 8.8.

The complete measuring instrument must be covered by relevant metrological certification that is valid in the country where the instrument is put into use.

Two temperature sensors can be connected to the transducer. The transmitter can display the difference between the two temperatures, and the mean of the two temperatures. However that is not within the scope of this Parts Certificate.



Furthermore, the next additional conditions, depending on the field of application, apply.

- 1) For application in non-interruptible measuring systems for liquid and for gas, using the 4 .. 20 mA output signal, with the transducer powered by an external power supply, a provision should be available to guarantee that the power supply is permanently available and undisturbed (UPS).  
In this application the HART communication cannot be used.
- 2) For applications in a measuring system for liquid on road vehicles, using the HART communication, with the transmitter powered by the on board battery, the transducer can be used with the Hart-output signal only in interruptible systems. In practice, a measuring system for liquid on road vehicles always is an interruptible system.

### 1.1 Essential parts

#### 1.1.1 Hardware components

part	documentation
TTX board	10833/0-01; 10833/0-02; 10833/2-01; 10833/3-01
Display board	10833/0-03; 10833/0-04

## 1.2 Essential characteristics

1.2.1 Measuring range -50 °C ... +150 °C.

1.2.2 Software

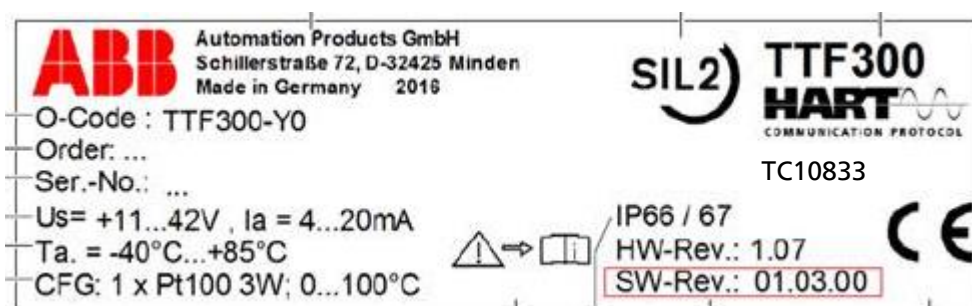
Version: 01.03.00, dated 1 December 2015  
Checksum: 0x46c9

The software fulfils the WELMEC 7.2 revision 2015 chapter P and the extensions T, I2 and I5. Chapter U and the extensions L, S, D and the other I extensions do not apply. The software version can be made visible on the display after selecting Device info. The checksum is inscribed on the name plate, but can also be made visible with a special tool that on request can be made available by ABB.

## 1.3 Essential shapes

1.3.1 The nameplate(s) on the temperature transducer is bearing at least, good legible, the following information:  
name of the producer;  
type;  
serial number and year of manufacture;  
Parts certificate no. TC10833;  
temperature minimum and maximum values  $t_{min}$  and  $t_{max}$ ;  
ambient temperature range;  
the 4-20 mA output range.

Example of a name plate:



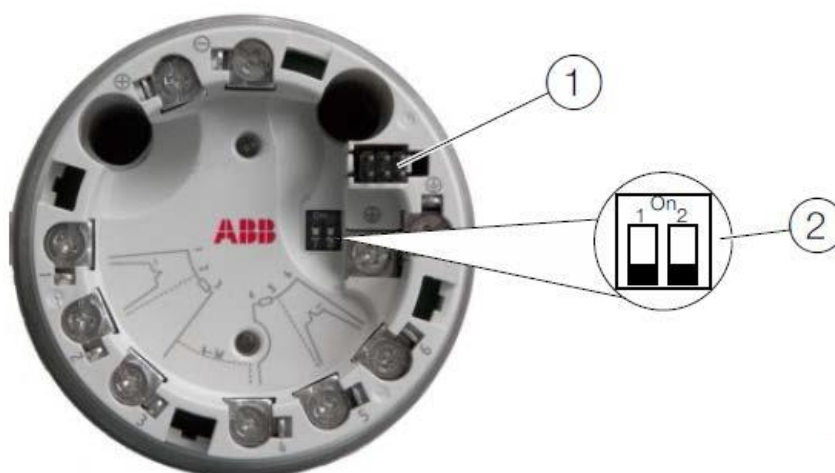
1.3.2 EMC measures  
The housing must be connected to ground.

## 1.4 Conditional parts

1.4.1 Housing  
The temperature transmitter has a metal housing, which has sufficient tensile strength.

## 1.4.2 W&M parameters

Weights & Measures parameters can be changed after setting DIP switch 1 to OFF.  
After setting the parameters DIP switch 1 must be set to ON.



Parameters can be set with the buttons on the front and with the HART remote terminal.

Parameter	setting
Device config / Input sensor 1	4 wire Pt100
Device config / Input sensor 2	4 wire Pt100
Device config / Measured range	Minimum and maximum temperature value for 4 mA and 20 mA.
Device config / Measured range / Unit	°C or K
Device config / Damping	Depending on the application damping may be set to a specific value.
Communication / HART address	Correct address.
Apply Lower Range / Apply Upper Range	Lower range value and upper range value (at 4 mA and 20 mA).
Calibrate Analog output	Trimmed value for 4 mA and 20 mA.

## 2 Seals

After the installation and configuration, the DIP switch 1 must be put into the “write-protection” position and then the cover must be closed.  
Then raise the screw for protecting the cover against opening.



The W&M Sealing can be realized by installing a seal over the small gap between the cover and the lower housing. See the example below.



## 3 Conditions for Conformity Assessment

- The temperature probe must be constructed in accordance with the Description.
- Other parties may use this Parts Certificate without the written permission of the owner of this Parts Certificate.



# Description

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## Reports

An overview of the performed tests is given in Evaluation Report ER10833 revision 3 issued together with this Parts Certificate.