Issued by NMi Certin B.V.

In accordance with – WELMEC guide 8.8 “General and Administrative Aspects of the Voluntary System of Modular Evaluation of Measuring instruments under the MID”.

Producer ABB Automation Products GmbH
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 2;
- Documentation folder TC10833-2.

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

Issuing Authority NMi Certin B.V.
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C. Oosterman
Head Certification Board

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1 General information about the temperature transducer

Properties of the temperature transducer, whether mentioned or not, shall not 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 guide 8.8. The complete measuring system must be covered by an EU-type examination certificate or an EC type-examination Certificate.

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 systems 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

<table>
<thead>
<tr>
<th>part</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTX board</td>
<td>10833/0-01; 10833/0-02; 10833/2-01</td>
</tr>
<tr>
<td>Display board</td>
<td>10833/0-03; 10833/0-04</td>
</tr>
</tbody>
</table>
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 fulfills 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 \( t_{\text{min}} \) and \( t_{\text{max}} \);
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.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device config / Input sensor 1</td>
<td>4 wire Pt100</td>
</tr>
<tr>
<td>Device config / Input sensor 2</td>
<td>4 wire Pt100</td>
</tr>
<tr>
<td>Device config / Measured range</td>
<td>Minimum and maximum temperature value for 4 mA and 20 mA.</td>
</tr>
<tr>
<td>Device config / Measured range / Unit</td>
<td>°C or K</td>
</tr>
<tr>
<td>Device config / Damping</td>
<td>Depending on the application damping may be set to a specific value.</td>
</tr>
<tr>
<td>Communication / HART address</td>
<td>Correct address.</td>
</tr>
<tr>
<td>Apply Lower Range / Apply Upper Range</td>
<td>Lower range value and upper range value (at 4 mA and 20 mA).</td>
</tr>
<tr>
<td>Calibrate Analog output</td>
<td>Trimmed value for 4 mA and 20 mA.</td>
</tr>
</tbody>
</table>
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.
- Third parties may use this document without written permission of the producer.
4 Reports

An overview of performed tests is given in the following test reports, issued by NMi Certin:

- NMi-16200507-01
- NMi-16200507-02
- NMi-16200507-03
- NMi-16200507-04
- NMi-16200507-05