



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX PTB 12.0039** issue No.:0 Certificate his

Status: **Current**

Date of Issue: **2012-07-27** Page 1 of 3

Applicant: **ABB Automation Products GmbH**
Borsigstr. 2
63755 Alzenau
Germany

Electrical Apparatus: **Temperature sensors TSP..., Measuring inserts TSA..., Temperature transmitter TTF3**
Optional accessory:

Type of Protection: **Ex d**

Marking: **Ex d IIC T1 - T6 Ga/Gb**

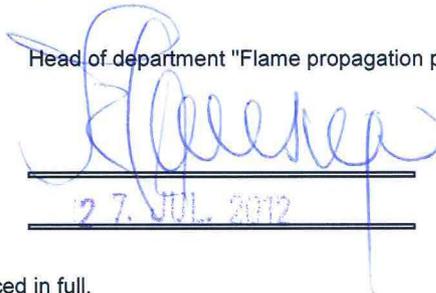
Approved for issue on behalf of the IECEx
Certification Body:

Dr.-Ing. Uwe Klausmeyer

Position:

Head of department "Flame propagation processes"

Signature:
(for printed version)


27. JUL 2012

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany

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Manufacturer: **ABB Automation Products GmbH**
Schillerstraße 72
32425 Minden
Germany

Additional Manufacturing location
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identifying documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
[DE/PTB/ExTR12.0053/00](#)

Quality Assessment Report:
[DE/TUN/QAR06.0012/03](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The product family consists of Temperature sensors TSP..., Measuring inserts TSA... and Temperature transmitter TTF300 .

For the technical data, please refer to the annex.

CONDITIONS OF CERTIFICATION: NO

Annex to IECEx PTB 12.0039

Technical data

The connection heads are to accommodate the thermocouples and resistance thermometers, as well as transducers and display elements.

The field housings only accommodate transducers and display elements.

The Flameproof Enclosure type of protection will only be produced when a – separately certified – screwed cable gland is properly mounted as specified in the standards shown on the cover sheet.

When an enclosed conduit is used for zone separation, the system may also be employed for measuring temperatures in zone 0. Only the measuring sensor may in connection with the conduit be employed in zone 0. The connection head and temperature sensor without separate conduit may only be employed in zone 1.

Max. adm. ambient temperature: -40 °C to 60 °C

Working temperatures:

	Temperature class	Max. working temperature *
Connecting head with base	T6	75 °C
	T5	90 °C
	T1-T4	125 °C
Connecting head with temperature transmitter	T6	67 °C
	T5	82 °C
	T1-T4	117 °C

* The working temperatures may be limited depending on the temperature resistance of the cable entries used.

Technical data for temperature sensor:

Voltage:	< 60 V
Current:	< 2 mA
Output:	< 15 mW

Media temperatures:

	Temperature class	Max. adm. media temperature
Use in zone 0	T1	358 °C
	T2	238 °C
	T3	158 °C
	T4	106 °C
	T5	78 °C
	T6	66 °C
Use in zone 1	T1	438 °C
	T2	288 °C
	T3	193 °C
	T4	128 °C
	T5	93 °C
	T6	78 °C

Stainless steel may optionally be used as enclosure material for the connecting head. In addition, measuring inserts in the modifications with Ø 3 mm and Ø 4.5 mm, may be used.

Additional hints for safe operation

For installation and operation of the housings, the specifications in the operating instructions shall be complied with. For zone-0 operation, conduits shall be used that are suited for zone separation in compliance with IEC 60079-26. For the maximum permissible media temperatures, reference shall be made to the tables included in the operating instructions.

Any components attached or installed (e.g. terminal compartments, bushings, explosion-proof cable entries, connectors) shall be of a technical standard that complies with the specifications on the cover sheet as a minimum and for which a separate examination certificate has been issued. The operating conditions set forth in the relevant component certificates must by all means be complied with.

Connection conditions

1. The Temperature sensors TSP..., Measuring inserts TSA..., Temperature transmitter TTF300 shall be connected by means of suitable cable entries or conduit systems, which meet the requirements of IEC 60079-1, sections 13.1 and 13.2, and for which a separate examination certificate has been issued. Should the Temperature sensors TSP..., Measuring inserts TSA..., Temperature transmitter TTF300 be connected by means of a conduit entry which has been approved for this purpose, the required sealing device shall be provided immediately at the device.
2. Cable entries (conduit threads) and sealing plugs of simple designs must not be used.
3. Any openings not used shall be sealed as specified in IEC 60079-1, section 11.9.
4. The connecting cable of the Temperature sensors TSP..., Measuring inserts TSA..., Temperature transmitter TTF300 has to be connected inside an enclosure, which complies with the requirements of an accepted type of protection acc. to IEC 60079-0, clause 1, if connection is made in a hazardous location.
5. The connecting wire of the Temperature sensors TSP..., Measuring inserts TSA..., Temperature transmitter TTF300 shall be installed to provide for permanent wiring and adequate protection against mechanical damage.
6. If the temperature at entry fittings should exceed 70 °C, the connecting cables used have to be of the temperature-resistant type.
7. The Temperature sensors TSP..., Measuring inserts TSA..., Temperature transmitter TTF300 are to be included into the local equibonding solution of the hazardous location.

These notes shall accompany each apparatus in an adequate form.