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 11.0003 issue No.:1	Certificate history: Issue No. 1 (2013-3-28) Issue No. 0 (2011-1-24)
Status:	**Current**	
Date of Issue:	**2013-03-28** Page 1 of 4	
Applicant:	**Endress + Hauser Wetzer GmbH + Co. KG** Obere Wank 1 87484 Nesselwang **Germany**	
Electrical Apparatus: *Optional accessory:*	**Temperature transmitter iTEMP type TMT82 and OTMT82, optional with display, type TID10**	
Type of Protection:	**Intrinsic Safety "i"**	
Marking:	Ex ia IIC T6 Ga resp. Ex ia IIC T6 Gb resp. Ex ib [ia Ga] IIC T6 Gb (model DIN rail)	
Approved for issue on behalf of the IECEx Certification Body:	Dr.-Ing. U. Johannsmeyer	
Position:	Department Head "Intrinsic Safety and Safety of Systems"	
Signature: *(for printed version)*		
Date:	2013-04-10	

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.

Certificate issued by:

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

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Manufacturer: **Endress + Hauser Wetzer GmbH + Co. KG**
Obere Wank 1
87484 Nesselwang
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 produ 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 Docume as amended.

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

IEC 60079-0 : 2007-10 Edition: 5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than thos 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/ExTR11.0009/00 DE/PTB/ExTR11.0009/01

Quality Assessment Report:

DE/TUN/QAR06.0009/03

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The temperature transmitter iTEMP type TMT82 and OTMT82 is a two wire transmitter with analogue output. It has measurement input circuits for resistance thermometers (RTD) in 2-, 3- or 4-wire connection, thermocouples and voltag transmitters. Setting up is done using the HART-Protocol.The equipment is intended for the application inside the explosion hazardous area.

CONDITIONS OF CERTIFICATION: NO

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

The temperature transmitter iTEMP, type TMT82 is supplemented by the identical type OTMT82 and by a variant designed for top-hat rail mounting (DIN rail).
The display of type TID10 certified by PTB may be connected to the display interface of the temperature transmitters iTEMP, types TMT82 and OTMT82 as an option.
For further information see schedule.

Annexe: C110003_01_Schedule.pdf

Schedule

The temperature transmitter iTEMP, type TMT82 is supplemented by the identical type OTMT82 and by a variant designed for top-hat rail mounting (DIN rail). They may in future also be manufactured according to the test documents listed in the test reports.

The equipment is intended for the application inside the hazardous area.

The thermal and electrical maximum values of the equipment variants are presented in summary.

I.) Temperature transmitters, types TMT82 and OTMT82

Marking: **Ex ia IIC T6 Ga**

For relationship between temperature class, the equipment protection level (EPL) and the permissible ranges of the ambient temperature, reference is made to the following table:

	EPL Ga	EPL Gb
T6	46 °C	58 °C
T5	- 50 °C ... 60 °C	- 50 °C ... 75 °C
T4	60 °C	85 °C

Application as EPL Ga equipment

For applications requiring EPL Ga equipment the process pressure of the media shall range from 0.8 to 1.1 bar.

When deviating from these specified operating conditions at the sensor it shall be considered that the temperature transmitter does not (not even in the event of fault) show a temperature rise higher than 20 K at the surface of the encapsulation and that the operating company is responsible for the safe operation of the system regarding the pressures/temperatures of the media used.

Electrical data

Supply circuit (terminals 1/+, 2/-) ..... type of protection Intrinsic Safety Ex ia IIC only for connection to a certified safe intrinsically circuit

Maximum values:

U_i = 30 V DC
I_i = 130 mA
P_i = 800 mW
C_i negligibly low
L_i negligibly low

Sensor circuit (terminals 3 ... 7) ..... type of protection Intrinsic Safety Ex ia IIC

Maximum values:

U_o = 7.6 V DC
I_o = 13 mA

P_o = 24.7 mW
Linear characteristic
C_i negligibly low
L_i negligibly low

For relationship between the type of protection and the permissible external inductances and capacitances, reference is made to the following table:

Ex ia	IIC	IIB	IIA
L_o	10 mH	50 mH	50 mH
C_o	1 µF	4.5 µF	6.7 µF

The supply circuit is safely electrically isolated from the sensor circuit up to a maximum voltage of 30 V.

II.) Temperature transmitters, types TMT82 and OTMT82 with display, type TID10

Application as EPL Gb equipment

Marking: **Ex ia IIC T6 Gb**

The display of type TID10 certified by PTB EC-type examination certificate may be connected to the display interface of the temperature transmitters iTEMP, types TMT82 and OTMT82 as an option. The equipment is installed inside of hazardous areas where EPL Gb equipment is required.

For relationship between temperature class, EPL and permissible range of the ambient temperature, reference is made to the following table:

	EPL Gb
T6	55 °C
T5	-40 °C ... 70 °C
T4	85 °C

Electrical data

Supply circuit (terminals 1/+, 2/-) ..... type of protection Intrinsic Safety Ex ia IIC only for connection to a certified safe intrinsically circuit

Maximum values:
U_i = 30 V DC
I_i = 130 mA
P_i = 800 mW
C_i negligibly low
L_i negligibly low

Sensor circuit (terminals 3 ... 7) ..... type of protection Intrinsic Safety Ex ia IIC

Maximum values:
U_o = 7.6 V DC
I_o = 13 mA

P_o = 24.7 mW
Linear characteristic
C_i negligibly low
L_i negligibly low

For relationship between the type of protection and the permissible external inductances and capacitances, reference is made to the following table:

Ex ia	IIC	IIB	IIA
L_o	10 mH	50 mH	50 mH
C_o	1 µF	4.5 µF	6.7 µF

The supply circuit is safely electrically isolated from the sensor circuit up to a maximum voltage of 30 V.

Display interface (optional) ..... type of protection Intrinsic Safety Ex ia IIC only for connection to the display, type TID10 with the permissible maximum values:

U_i = 7.2 VDC
I_i = 80 mA
C_i negligibly low
L_i negligibly low

III.) Types TMT82 and OTMT82 for top-hat rail mounting (DIN rail)

Marking: **Ex ib [ia Ga] IIC T6 Gb**

For relationship between temperature class, EPL and permissible range of the ambient temperature, reference is made to the following table:

	EPL Gb
T6	46 °C
T5	-40 °C ... 61 °C
T4	85 °C

Electrical data

Supply circuit ..... type of protection Intrinsic Safety Ex ia IIC
(terminals 1/+, 2/-) only for connection to a certified safe intrinsically circuit

Maximum values:
U_i = 30 V DC
I_i = 130 mA
P_i = 770 mW

C_i negligibly low
L_i negligibly low

Sensor circuit ..... type of protection Intrinsic Safety Ex ia IIC (terminals 3 ... 8)

Maximum values:
U_o = 9 V DC
I_o = 13 mA
P_o = 29.3 mW
Linear characteristic
C_i negligibly low
L_i negligibly low

For relationship between the type of protection and the permissible external inductances and capacitances, reference is made to the following table:

Ex ia	IIC	IIB	IIA
L_o	5 mH	20 mH	50 mH
C_o	0.93 µF	3.8 µF	4.8 µF

The supply circuit is safely electrically isolated from the sensor circuit up to a maximum voltage of 30 V.