CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **DEKRA 11ATEX0265** Issue Number: **6**

(4) Product: **Field Temperature Transmitter iTEMP, Types TMT71, L20221, TMT72, L20222, TMT82, TMT84, TMT85 and TMT86**

(5) Manufacturer: **Endress+Hauser Wetzer GmbH+Co. KG**

(6) Address: **Obere Wank 1, 87484 Nesselwang, Germany**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number NL/DEK/ExTR11.0112/05.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0 : 2018 **EN 60079-1 : 2014** **EN 60079-11 : 2012**
EN 60079-31 : 2014

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 2 G	**Ex db IIC T6…T4 Gb**
II 2(1) G	**Ex ia [ia Ga] IIC T6…T4 Gb**
II 2 D	**Ex tb IIIC T85 °C...T110 °C Db**

Date of certification: 9 January 2024

DEKRA Certification B.V.

L.G. van Schie
Certification Manager

Throughout this document, a point is used as the decimal separator.

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(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 11ATEX0265** Issue No. **6**

(15) **Description**

The Field Temperature Transmitter iTEMP, Types TMT71, L20221, TMT72, L20222, TMT82, TMT84, TMT85 and TMT86 consists of an enclosure, made of aluminium or stainless steel, containing electronic circuits and optionally a display. The transmitters are used to convert the measurement signal of an externally connected temperature sensor into an output signal.

Depending on the version, the transmitter provides a 4-20 mA current output signal with HART communication or is connected to a fieldbus (Profibus PA or Foundation Fieldbus or PROFINET) or has a Bluetooth (App), DTM or DTM/Bluetooth (App) configuration.

For details see Annex 1 to Report No. NL/DEK/ExTR11.0112/05.

Installation instructions

The manufacturers instructions shall be followed in detail to assure safe operation.

(16) **Report Number**

NL/DEK/ExTR11.0112/05.

(17) **Specific conditions of use**

None.

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

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR11.0112/05.

In this document '.' is used as a decimal separator.

Description

The Field Temperature Transmitter iTEMP, Types TMT71, L20221, TMT72, L20222, TMT82, TMT84, TMT85 and TMT86 consists of an enclosure made of aluminium (Al) or stainless steel, containing electronic circuits and optionally a display. The transmitters are used to convert the measurement signal of an externally connected temperature sensor into an output signal.
Depending on the version, the transmitter provides a 4-20 mA current output signal with HART communication or is connected to a fieldbus (Profibus PA, Foundation Fieldbus or PROFINET) or has a Bluetooth (App), DTM or DTM/Bluetooth (App) configuration.

The ambient temperature range, depending on transmitter version and temperature class/code, is listed in the following tables:

Transmitter version		Temperature class / code	Ambient temperature range
Ex db IIC / Ex tb IIIC	TMT71, L20221, TMT72, L20222, TMT82, TMT84, TMT85 and TMT86 with or without display TID10, with field housing type T30H	T6 / T85 °C	-50 °C to +65 °C
		T5 / T100 °C	-50 °C to +80 °C
		T4 / T105 °C	-50 °C to +85 °C
Ex tb IIIC	TMT71, L20221, TMT72, L20222, TMT82, TMT84, TMT85 and TMT86 with or without display TID10, with field housing type T30H, TA30A, TA30D	T105 °C	-50 °C to +85 °C

The enclosures provide a degree of protection of at least IP66/IP68 per IEC 60079-0 and IEC 60529.

Transmitter version with field mount housing (dual compartment)		Temperature class / code	Ambient temperature range
Ex db IIC / Ex tb IIIC	TMT82 with or without display TID10	T6 / T85 °C	-40 °C to +55 °C
		T5 / T100 °C	-40 °C to +70 °C
		T4 / T110 °C	-40 °C to +80 °C
Ex tb IIIC	TMT82 with or without display TID10	T110 °C	-40 °C to +80 °C
Ex ia IIC	TMT82 without display TID10	T6	-40 °C to +58°C
	TMT82 with display TID10	T6	-40 °C to +55 °C
	TMT82 without display TID10	T5	-40 °C to +75 °C
	TMT82 with display TID10	T5	-40 °C to +70 °C
	TMT82 with or without display TID10	T4	-40 °C to +85 °C

The enclosure provides a degree of protection of at least IP66/IP67 per IEC 60529.

Transmitter version with field housing, type T30H, TA30A, TA30D		Temperature class / code	Ambient temperature range
Ex ia IIC	TMT82 without display TID10	T6	-52 °C to +58 °C
		T5	-52 °C to +75 °C
		T4	-52 °C to +85 °C
Ex ia IIC	TMT84 and TMT85 without display TID10	T6	-40 °C to +55 °C
		T5	-40 °C to +70 °C
		T4	-40 °C to +85 °C
Ex ia IIC	TMT82, TMT84, TMT85 with display TID10	T6	-40 °C to +55 °C
		T5	-40 °C to +70 °C
		T4	-40 °C to +85 °C

The enclosures provide a degree of protection of at least IP66/IP68 per IEC 60079-0 and IEC 60529.

Type designation

Type TMT71/TMT72/L20221/L20222

Series No Suffix Code

TMT71/TMT72- abcdefghijklmnopq

L20221/L20222- abcdefNNghijklmnopq[4]

Designation	Explanation	Value	Explanation
a	Approval:	B6	ATEX II2G Ex db T6, II2D Ex tb IIIC
		I6	IECEx Ex db T6 Gb, Ex tb IIIC Db
		8F	ATEX IECEx II2D Ex tb IIIC Db
b	Communication; Output Signal:	A	HART; 4-20 mA; HART configuration (TMT72)
		P	HART; 4-20 mA; HART/Bluetooth (App) configuration (TMT72)
		A	4-20 mA; DTM configuration (TMT71)
		P	4-20 mA; DTM/Bluetooth (App) configuration (TMT71)
c	Housing shape	1	From B head transmitter, DIN EN 50446
d	Electrical Connection	A	Screw terminals
		B	Spring terminals
e	Field Housing	A1 *2	TA30A; Al, 2x M20x1.5; w/o display window
		A2 *2	TA30A; Al, 2x M20x1.5; glass display window
		A3 *2	TA30A; 2x 1/2NPT; w/o display window
		A4 *2	TA30A; 2x 1/2NPT; glass display window
		D1 *2	TA30D; 2x M20x1.5 universal housing
		D2 *2	TA30D; 2x 1/2NPT universal housing
		H1	TA30H, Al, 2x M20x1.5; w/o display window
		H2	TA30H, Al, 2x M20x1.5; glass display window
		H3	TA30H, Al, 2x 1/2NPT; w/o display window
		H4	TA30H, Al, 2x 1/2NPT; glass display window
		H5	TA30H, 316L, 2x M20x1.5, w/o display
		H6	TA30H, 316L, 2x M20x1.5, glass display
		H7	TA30H, 316L, 2x 1/2NPT, w/o display
		H8	TA30H, 316L, 2x 1/2NPT, glass display
		HA	TA30H, Alu, 3x 1/2NPT, glass display window
		HB	TA30H, Alu, 3x 1/2NPT, w/o display window
		HC	TA30H, 316L, 3x 1/2NPT, glass display window
		Y	Special varnishing (non-conductive) in combination with digit A1 to HC
f	Device Model	n.s. *1	Not relevant for Explosion Safety
g *3	Universal Input	n.s. *1	Not relevant for Explosion Safety
h *3	Sensor Type	n.s. *1	Not relevant for Explosion Safety
i *3	Calibration	n.s. *1	Not relevant for Explosion Safety
j *3	Display; Operating	G1	Meas. display; DIP-switch, pluggable
k *3	Service	n.s. *1	Not relevant for Explosion Safety
l *3	Additional Approval	n.s. *1	Not relevant for Explosion Safety
m *3	Accessory Mounted	n.s. *1	Not relevant for Explosion Safety
n *3	Accessory Enclosed	n.s. *1	Not relevant for Explosion Safety
o *3	Cable glands; temp. range; Protect. type	n.s. *1	Not in the scope
p *3	Firmware Version	n.s. *1	Not relevant for Explosion Safety
q *3	Marking	n.s. *1	Not relevant for Explosion Safety

*1 n.s. means the value is neither related to Explosion Safety nor in the scope.
*2 only possible when designation a = 8F
*3 designation g to q is optional, these codes could be blank depends on chosen additional options.
*4 The type L2022x offers the same options as type TMT7x. The only difference is the color of the enclosure. The bottom part is grey as the cover instead of blue. These differences were indicated with the type designation as well as the digit 'NN' in the option code.

Type TMT82 Series No Suffix Code
TMT82- abcdefghijklmnopqrs

Designation	Explanation	Value	Explanation
a	Approval:	B6	ATEX II2G Ex db T6, II2D Ex tb IIIC
		I6	IECEx Ex db T6 Gb, Ex tb IIIC Db
		BF	ATEX II2D Ex tb IIIC Db
		IF	IECEx Ex tb IIIC Db
		BA	ATEX II2(1)G Ex ia [ia Ga] IIC T6 Gb
		IA	IECEx Ex ia [ia Ga] IIC T6 Gb
		8A	ATEX IECEx II2(1)G Ex ia [ia Ga] IIC T6 Gb
b	Communication; Output Signal:	A	HART 6; 4-20 mA, 2 channel
c	Electrical Connection:	1	Spring terminals, housing form B,DIN EN 50446
		2	Screw terminals, housing form B,DIN EN 50446
		4	Screw terminals, field mount housing, separate terminal compartment
d	Field Housing	D	TA30H, Al, 2x M20x1.5; w/o display window
		E	TA30H, Al, 2x M20x1.5; glass display window
		F	TA30H, Al, 2x 1/2NPT; w/o display window
		G	TA30H, Al, 2x 1/2NPT; glass display window
		H *2	TA30A; 2x M20x1.5; w/o display window
		I *2	TA30A; 2x M20x1.5; glass display window
		J *2	TA30A; 2x 1/2NPT; w/o display window
		K *2	TA30A; 2x 1/2NPT; glass display window
		L *2	TA30D; 2x M20x1.5 universal housing
		M *2	TA30D; 2x 1/2NPT universal housing
		N	TA30H, 316L, 2x M20x1.5, w/o display
		O	TA30H, 316L, 2x M20x1.5, glass display
		P	TA30H, 316L, 2x 1/2NPT, w/o display
		Q	TA30H, 316L, 2x 1/2NPT, glass display
		R	Field mount housing (dual compartment), Al, 2x M20x1.5 incl. display, behind glass window
		S	Field mount housing (dual compartment), Al, 2x 1/2NPT incl. display, behind glass window
		U	TA30H, Alu, 3x 1/2NPT, glass display window
		V	TA30H, Alu, 3x 1/2NPT, w/o display window
		W	TA30H, 316L, 3x 1/2NPT, glass display window
		Y	Special varnishing (non-conductive) in combination with digit D to W
e	Configuration Universal Input	n.s. *1	Not relevant for Explosion Safety
f	Sensor type Input 1	n.s. *1	Not relevant for Explosion Safety
g	Sensor type Input 2	n.s. *1	Not relevant for Explosion Safety
h	Input; Interconnection	n.s. *1	Not relevant for Explosion Safety
i *3	Display; Operating	E1	Meas. display; DIP-switch, pluggable
j *3	Calibration	n.s. *1	Not relevant for Explosion Safety
k *3	Service	n.s. *1	Not relevant for Explosion Safety

Designation	Explanation	Value	Explanation
l *3	Test, Certificate, Declaration:	JM *4	Ambient temperature transmitter -50°C/-58°F
		JN *5	Ambient temperature transmitter -52°C/-62°F
m *3	Additional approval	n.s. *1	Not relevant for Explosion Safety
n *3	Additional option	n.s. *1	Not relevant for Explosion Safety
o *3	Accessories mounted	NA	Attachment hinge, Stainless steel (304)
p *3	Accessories enclosed	n.s. *1	Not relevant for Explosion Safety
q *3	Cable glands; temp. range;	n.s. *1	Not relevant for Explosion Safety
r *3	Firmware Version:	n.s. *1	Not relevant for Explosion Safety
s *3	Marking:	n.s. *1	Not relevant for Explosion Safety

*1 n.s. means the value is neither related to Explosion Safety nor in the scope.
*2 TA30H 2x G1/2 housing is only possible when designation a = BF, IF, BA, IA or 8A.
*3 designation i to s is optional, these codes could be blank depends on chosen additional options.
*4 only possible when designation d = D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S
*5 only possible when designation a = BA, IA or 8A.

Type TMT84/TMT85

Series No Suffix Code

TMT84/TMT85- abcdefghijklm

Designation	Explanation	Value	Explanation
a	Approval:	B6	ATEX II2G Ex db T6, II2D Ex tb IIIC
		I6	IECEx Ex db T6 Gb, Ex tb IIIC Db
		BF	ATEX II2D Ex tb IIIC Db
		IF	IECEx Ex tb IIIC Db
		B1	ATEX II2(1)G Ex ia [ia Ga] IIC T6 Gb
		E1	IECEx Ex ia [ia Ga] IIC T6 Gb
		8A	ATEX IECEx II2(1)G Ex ia [ia Ga] IIC T6 Gb
b	Communication; Output Signal:	A	Profibus PA (TMT84)
			Foundation Fieldbus (TMT85)
c	Electrical Connection:	1	Spring terminals, housing form B,DIN EN 50446
		2	Screw terminals, housing form B,DIN EN 50446
d	Field Housing	D	TA30H, Al, 2x M20x1.5; w/o display window
		E	TA30H, Al, 2x M20x1.5; glass display window
		F	TA30H, Al, 2x 1/2NPT; w/o display window
		G	TA30H, Al, 2x 1/2NPT; glass display window
		H *2	TA30A; 2x M20x1.5; w/o display window
		I *2	TA30A; 2x M20x1.5; glass display window
		J *2	TA30A; 2x 1/2NPT; w/o display window
		K *2	TA30A; 2x 1/2NPT; glass display window
		L *2	TA30D; 2x M20x1.5 universal housing
		M *2	TA30D; 2x 1/2NPT universal housing
		N	TA30H, 316L, 2x M20x1.5, w/o display
		O	TA30H, 316L, 2x M20x1.5, glass display
		P	TA30H, 316L, 2x 1/2NPT, w/o display
		Q	TA30H, 316L, 2x 1/2NPT, glass display
		R *2	TA30H; 2x G1/2; w/o display window
		S *2	TA30H; 2x G1/2; glass display window
		U	TA30H, Alu, 3x 1/2NPT, glass display window
		V	TA30H, Alu, 3x 1/2NPT, w/o display window
		W	TA30H, 316L, 3x 1/2NPT, glass display window
		Y	Special varnishing (non-conductive) in combination with digit D to W
e	Configuration Input	n.s. *1	Not relevant for Explosion Safety
f *3	Display; Operating:	E1	Meas. display; DIP-switch, pluggable
g *3	Calibration, Test	n.s. *1	Not relevant for Explosion Safety
h *3	Certificate	n.s. *1	Not relevant for Explosion Safety
i *3	Additional option	n.s. *1	Not relevant for Explosion Safety
j *3	Accessories mounted	NA	Attachment hinge, Stainless steel (304)
k *3	Accessories enclosed	n.s. *1	Not relevant for Explosion Safety
l *3	Cable glands; temp. range;	n.s. *1	Not in the scope
m *3	Plug	n.s. *1	Not in the scope

*1 n.s. means the value is neither related to Explosion Safety nor in the scope.
*2 only possible when designation a = BF, IF, B1, E1 or 8A.
*3 designation f to m is optional, these codes could be blank depends on chosen additional options.

Type TMT86

Series No Suffix Code

TMT86- abcdefghijklmnopq

Designation	Explanation	Value	Explanation
a	Approval:	B6	ATEX II2G Ex db T6, II2D Ex tb IIIC
		I6	IECEx Ex db T6 Gb, Ex tb IIIC Db
		8F	ATEX IECEx II2D Ex tb IIIC Db
b	Communication; Output Signal:	A	PROFINET; 2-wire, 10Mbit/s
c	Housing shape	1	From B head transmitter, DIN EN 50446
d	Electrical Connection	A	Screw terminals
		B	Spring terminals
e	Field Housing	A1 *2	TA30A; Alu, 2x M20x1.5; w/o display window
		A2 *2	TA30A; Alu, 2x M20x1.5; glass display window
		A3 *2	TA30A; 2x 1/2NPT; w/o display window
		A4 *2	TA30A; 2x 1/2NPT; glass display window
		D1 *2	TA30D; 2x M20x1.5 universal housing
		D2 *2	TA30D; 2x 1/2NPT universal housing
		H1	TA30H, Al, 2x M20x1.5; w/o display window
		H2	TA30H, Al, 2x M20x1.5; glass display window
		H3	TA30H, Al, 2x 1/2NPT; w/o display window
		H4	TA30H, Al, 2x 1/2NPT; glass display window
		H5	TA30H, 316L, 2x M20x1.5, w/o display
		H6	TA30H, 316L, 2x M20x1.5, glass display
		H7	TA30H, 316L, 2x 1/2NPT, w/o display
		H8	TA30H, 316L, 2x 1/2NPT, glass display
		HA	TA30H, Alu, 3x 1/2NPT, glass display window
		HB	TA30H, Alu, 3x 1/2NPT, w/o display window
		HC	TA30H, 316L, 3x 1/2NPT, glass display window
		Y	Special varnishing (non-conductive) in combination with digit A1 to HC
f	Device Model	n.s. *1	Not relevant for Explosion Safety
g *3	Customized Parameterization:	n.s. *1	Not relevant for Explosion Safety
h *3	Application Package:	n.s. *1	Not relevant for Explosion Safety
i *3	Calibration:	n.s. *1	Not relevant for Explosion Safety
j *3	Display; Operating:	G1	Meas. display; DIP-switch, pluggable
k *3	Test, Certificate, Declaration:	n.s. *1	Not relevant for Explosion Safety
l *3	Accessory Mounted:	n.s. *1	Not relevant for Explosion Safety
m *3	Cable Gland; Temp. Range; Protect. Type:	n.s. *1	Not in the scope
n *3	Accessory Enclosed:	n.s. *1	Not relevant for Explosion Safety
o *3	Plug; Temp. Range; Protect. Type:	n.s. *1	Not in the scope
p *3	Firmware Version:	n.s. *1	Not relevant for Explosion Safety
q *3	Marking:	n.s. *1	Not relevant for Explosion Safety

*1 n.s. means the value is neither related to Explosion Safety nor in the scope.
*2 only possible when designation a = 8F
*3 designation g to q is optional, these codes could be blank depends on chosen additional options.

Electrical data

Transmitters in type of protection Ex db IIC and Ex tb IIIC

Supply and output circuit: max. 42 Vdc, 23 mA (TMT82)
max. 35 Vdc, 12 mA (TMT84/TMT85)
max. 36 Vdc, 23 mA (TMT71/L20221/TMT72/L20222)
max. 30 Vdc, 0.7 W (TMT86)

Transmitters in type of protection Ex ia IIC

TMT82
Supply and output circuit:
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = 30 V; I_i = 130 mA; P_i = 800 mW, C_i = 0 nF; L_i = 0 µH;

Sensor circuit:
in type of protection intrinsic safety Ex ia IIC, with the following maximum values:
U_o = 7.6 V; I_o = 13 mA; P_o = 24.7 mW; C_i = 0 nF; L_i = 0 µH;

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

And instead, with field mount housing (dual compartment);

	Ex ia IIC	Ex ia IIB	Ex ia IIA
C_o =	0.7 µF	4.1 µF	5.0 µF
L_o =	0.5 mH	20 mH	50 mH

The sensor circuit is galvanically isolated from the supply and output circuit up to a peak voltage of 30 V.

TMT84/TMT85:
Supply and output circuit Profibus PA (TMT84) or Foundation Fieldbus (TMT85):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = 17.5 V; I_i = 380 mA; C_i = 5 nF; L_i = 2.75 µH;
or
U_i = 24 V; I_i = 250 mA; C_i = 5 nF; L_i = 2.75 µH;
or
as a FISCO field device

Sensor circuit:
in type of protection intrinsic safety Ex ia IIC, with the following maximum values:
U_o = 7.2 V; I_o = 25.9 mA; P_o = 46.7 mW; C_i = 5 nF; L_i = 0 µH;

	Ex ia IIC	Ex ia IIB	Ex ia IIA
C_o =	0.97 µF	4.6 µF	6 µF
L_o =	20 mH	50 mH	100 mH

The sensor circuit is galvanically isolated from the supply and output circuit up to a peak voltage of 30 V.