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 18ATEX0103X** Issue Number: **3**

(4) Product: **Temperature assemblies, Type TM111, TM112, TM131, TM151 and TM152**

(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/ExTR18.0060/03.

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

EN IEC 60079-0 : 2018 + A11 : 2024
EN 60079-1 : 2014 + A11 : 2024
EN 60079-26 : 2015
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:

Type TM111 and TM112:
II 2 G Ex db IIC T6...T1 Gb
II 2 D Ex tb IIIC T85 °C...T450 °C Db

Type TM131, TM151 and TM152:
II 1/2 G Ex db IIC T6...T1 Ga/Gb
II 1/2 D Ex ta IIIC T_{200} 85 °C…T_{200} 450 °C Da / Ex tb IIIC T85 °C…T450 °C Db

See Annex 1 for details

Date of certification: 30 April 2025

DEKRA Certification B.V.

R. Schuller
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 18ATEX0103X** Issue No. **3**

(15) **Description**

The temperature assemblies, type TM111, TM112, TM131, TM151 and TM152 consist of a flameproof and/or dust ignition protected enclosure containing terminals, flying leads or a transmitter and a directly connected temperature sensor.

Type TM111 and TM112 is optionally provided with a thermowell and connection fittings between the enclosure and the thermowell.
Type TM131, TM151 and TM152 are provided with a thermowell or to be mounted with a thermowell and optionally provided with connection fittings between the enclosure and the thermowell.

At type TM131, TM151 and TM152 the thermowell provides the separation between the areas requiring EPL Ga and Gb and between the areas requiring EPL Da and Db.

The enclosure is a
- flameproof and dust ignition protected connection head type TA30H,
- dust ignition protected connection head type TA30A or TA30D or
- flameproof and dust ignition protected enclosure of Field Transmitter type iTEMP TMT142 or type iTEMP TMT162

and can be provided with a blind or a windowed cover.
The connection heads may be provided with terminals or a head transmitter.
The Field transmitters consist of an enclosure with a transmitter.

The connection heads, Types TA30A, TA30D and TA30H are separately certified by IECEx KEM 08.0042U / KEMA 08ATEX0145U and reported in NL/KEM/ExTR08.0041/04.

The Field Temperature Transmitter, type iTEMP TMT142 and type iTEMP TMT162 are separately certified by IECEx KEM 06.0020X / KEMA 02ATEX2338 X and reported in NL/KEM/ExTR09.0074/05.

The Sensors, Types TS111, TS111N, TS211, TS211N, TS212 and TS212N are assessed per IEC 60079-0 : 2017 (Ed. 7.0), IEC 60079-1 : 2014 (Ed. 7.0) and IEC 60079-31 : 2013 (Ed. 2.0). See NL/DEK/ExTR18.0041/04.

Connection fittings or the Neck tubes Types N (Nipple), L (Plain neck tube), C (Coupling / Sleeve), UXP (Union XP) - Cortem Type RB**1NS, UGP (Union GP) are assessed per IEC 60079-0 : 2017 (Ed. 7.0) and IEC 60079-31 : 2013 (Ed. 2.0). See NL/DEK/ExTR18.0043/02. Alternatively tests for sealed joints of connection fittings with thermowell, other connection fittings and enclosure are performed and reported in NL/DEK/ExTR18.0043/02.

The optional RB**1NS Union XP is separately certified by IECEx CES 10.0002U and CESI 99 ATEX 034U based on report IT/CES/ExTR10.0006/02 using standards IEC 60079-0 : 2011 (Ed. 6.0) and IEC 60079-31 : 2013 (Ed. 2.0). No applicable Technical Differences with IEC 60079-0 : 2017 (Ed. 7.0) are found - for details see NL/DEK/ExTR18.0043/02.

The Thermowells, Type TT131, TT151 and TT152 are assessed per IEC 60079-0 : 2017 (Ed. 7.0), IEC 60079-1 : 2014 (Ed. 7.0), IEC 60079-26 : 2014 (Ed. 3.0) and IEC 60079-31 : 2013 (Ed. 2.0). See NL/DEK/ExTR18.0044/02.

A non-metallic seal is provided between the M20x1.5 or M24x1.5 process connection point of the connection heads and the thermowell or connection fittings.

This certificate concerns the assembly of above listed items.

For details about the type designation, thermal data, electrical data and marking see Annex 1 to

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 18ATEX0103X** Issue No. **3**

Report No. NL/DEK18.0060/03.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

NL/DEK/ExTR18.0060/03.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 18ATEX0103X** Issue No. **3**

(17) **Specific conditions of use**

General
- The flameproof joints are not intended to be repaired.
- It shall be verified, taking into account the worst case process and ambient temperatures,
    - that the temperature of the enclosure at the process connection point does not exceed the ambient temperature range of the assembly.
    - that the temperature of the optionally used RB**1NS Union XP does not exceed the service temperature range as listed in Annex 1.
    - that the temperature of the optionally used Sensor Type TS21x with quickneck construction does not exceed the service temperature range as listed in Annex 1.
    - that the temperature of optional seal at connection points does not exceed the service temperature range as listed in Annex 1.
    - that the temperature of the thermowells type TT151 for TM151 and TT152 for TM152 does not exceed the service temperature range as listed in Annex 1 for some available materials.
- When provided with special varnishing (type TM111 suffix code i = YY, type TM112 suffix code i = YY, type TM131 suffix code m = YY, type TM151 suffix code m = YY, type TM152 suffix code m = YY) refer to the instructions “Safety notes varnish XA01369T/09/A2/01.16” for guidance to minimize the risk from electrostatic discharge.
- Temperature assemblies with flying leads (type TM111 suffix code h = 0A, type TM112 suffix code h= 0A, type TM131 suffix code l = 0A, type TM151 suffix code l = 0A, type TM152 suffix code l = 0A) shall be provided with a round transmitter of max. 2.2 W with a main diameter not exceeding 45 mm and a sensor signal of max 10 Vdc and 1 mA.
- The connection fittings, their joints, and their joints with the thermowell and the connection head or field temperature transmitter provide ingress protection of IP6x or, alternatively, (when fitted with at least 5 turns of PTFE tape or Loctite 270 spread on the entire circumference and for at least one thread) in the temperature range of -50 °C to +130 °C according to IEC 60079-0 and IEC 60529.
- Sensors with quicksleeve construction shall always be protected by a metallic thermowell.

Type TM111
- Sensors with a diameter of 3 mm (suffix code b = A) shall be protected by a thermowell.

Type TM112
- Sensors with a diameter of 3 mm (suffix code b = M), 1/8" (suffix code b = A) shall be protected by a thermowell.

Type TM111 and TM112
- Sensors with other diameters (suffix code b = Y) shall be protected by a thermowell unless excluded by the product information available on the manufacturer’s website (CER viewer or Asset Central Viewer) and the safety instructions for optional thermocouples and RTDs (document 10000013456). These safety instructions show, depending on the sensor details, when protection by a thermowell is required. The viewer on the website shows the sensor details for each serial number of the assembly.

Type TM131, TM151 and TM152
- The sensor shall be protected by the thermowell provided with the equipment or by a thermowell as specified in the instructions.

Type TM152
- The Union GP shall be tightened with a torque of 80 Nm minimum.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 18ATEX0103X** Issue No. **3**

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

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR18.0060/03.

Type designation

Type Suffix code
TM111- abcdefghijklmnopqrstuv

Suffix code	Explanation	Value	Explanation
a	Approval	8F	ATEX IECEx II2D Ex tb IIIC Db
		86	ATEX IECEx II2G Ex db IIC Gb II2D Ex tb IIIC Db
b	Insert Diameter	A	3 mm
		C	6 mm
		Y	Other diameter
c	Process Connection; Material	n.s. *1	Not relevant for Explosion Safety
d	Immersion Length “U”	n.s. *1	Not relevant for Explosion Safety
e	Lagging Length “T”	n.s. *1	Not relevant for Explosion Safety
f	Sensor Type; Measuring Range; Material	A	1xPt100 TF; -50...+400 °C; 316L
		B	1xPt100 WW; -200...+600 °C; 316L
		C	2xPt100 WW; -200...+600 °C; 316L
		D	1xPt100 TF StrongSens; -50...+500 °C;316L
		E	1xPt100 TF QuickSens; -50...+200 °C; 316L
		F	1xPt100 TF QuickSens; -50...+400 °C; 316L
		L	1xTC type J; max. 800 °C; 316L
		M	2xTC type J; max. 800 °C; 316L
		N	1xTC type K; max. 1100 °C; Alloy600
		O	2xTC type K; max. 1100 °C; Alloy600
		P	1xTC type N; max. 1100 °C; Alloy600
		Q	2xTC type N; max. 1100 °C; Alloy600
		Y	Other Thermocouples
g	Sensor Standard; Classification	n.s. *1	Not relevant for Explosion Safety
h	Electrical Connection	0A	Flying leads
		1A	Terminal block (only with terminal head A1, D1, H1 H3)
		2A	4-20mA, 1-channel TMT180 PCP 0.2K, head transmitter DIN B
		2B	4-20mA, 1-channel TMT180 PCP 0.1K, head transmitter DIN B
		2C	4-20mA, 1-channel TMT71, head transmitter DIN B
		2H	4-20 mA, 1-channel TMT31, PCP 0.15 K, head transmitter DIN B
		2I	4-20 mA, 1-channel TMT31, PCP 0.1 K, head transmitter DIN B
		3A	HART, 1-channel TMT72, head transmitter DIN B
		3C	HART, 2-channel TMT82, head transmitter DIN B
		3D	HART, 2-channel TMT82, SIL head transmitter DIN B
		3F	4-20mA HART, 2-channel TMT82 SIL2/3 OIML/MID for gas, temp. range -30...+120 °C
		3I	4-20mA HART, 2-channel TMT82 SIL2/3 OIML/MID for liquid, temp. range -200...+200 °C
		4A	FOUNDATION Fieldbus, 2-channel TMT85, head transmitter DIN B
		5A	PROFIBUS PA, 2-channel TMT84, head transmitter DIN B
		6B	PROFINET w. Ethernet-APL/SPE, TMT86, head transmitter DIN B
		6C	PROFINET w. Ethernet-APL/SPE, TMT86 SIL, conformity + PROFIsafe, head transmitter DIN B

Suffix code	Explanation	Value	Explanation
		6U	IO-Link, 1-channel TMT36, head transmitter DIN B
i	Terminal Head; Material; Protect. Class	A1 *2	TA30A comfort flip cover; Alu; IP66/68
		A2 *2	TA30A + display, comfort flip cover; Alu; IP66/68
		D1 *2	TA30D comfort, high flip cover; Alu; IP66/68
		H1	TA30H Ex d/XP; 316L; IP66/68
		H2	TA30H Ex d/XP + display; 316L; IP66/68
		H3	TA30H Ex d/XP; Alu; IP66/68
		H4	TA30H Ex d/XP + display; Alu; IP66/68
		H5	TA30H field housing, display frontal; Alu; IP66/68
		H6	TA30H field housing, display frontal; 316; IP66/66
		YY	Special varnishing (Non-conductive) in combination with digit A1 to H6
j	Cable entry Terminal head	A	1x thread M20x1.5
		B	1x thread NPT1/2
		C *2	1x thread G1/2 (only for Ex tb)
		D	2x thread M20x1.5
		E	2x thread NPT1/2
k	Device Version	n.s. *1	Not relevant for Explosion Safety
l	Second Transmitter (mounted)		Not allowed
m	Service	n.s. *1	Not relevant for Explosion Safety
n	Test, Certificate, Declaration	n.s. *1	Not relevant for Explosion Safety
o	Additional Approval	n.s. *1	Not relevant for Explosion Safety
p	Additional Option	n.s. *1	Not relevant for Explosion Safety
q	Accessory Mounted	n.s. *1	Not relevant for Explosion Safety
r	Calibration Thermometer	n.s. *1	Not relevant for Explosion Safety
s	Calibration Points ≥ 0 °C	n.s. *1	Not relevant for Explosion Safety
t	Calibration-Points ≤ 0 °C	n.s. *1	Not relevant for Explosion Safety
u	Firmware Version	n.s. *1	Not relevant for Explosion Safety
v	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 suffix code a = 8F

Type Suffix code
TM112- abcdefghijklmnopqrstuv

Suffix code	Explanation	Value	Explanation
a	Approval	8F	ATEX IECEx II2D Ex tb IIIC Db
		86	ATEX IECEx II2G Ex db IIC Gb II2D Ex tb IIIC Db
b	Insert Diameter	A	1/8"
		B	1/4"
		C	3/8"
		D	3/8" reduced to 3/16"
		M	3 mm
		N	6 mm
		Y	Other diameter
c	Process Connection; Material	n.s. *1	Not relevant for Explosion Safety
d	Immersion Length “U”	n.s. *1	Not relevant for Explosion Safety
e	Lagging Length “T”	n.s. *1	Not relevant for Explosion Safety
f	Sensor Type; Measuring Range; Material	A	1xPt100 TF; -50...+400 °C; 316L
		B	1xPt100 WW; -200...+600 °C; 316L
		C	2xPt100 WW; -200...+600 °C; 316L
		D	1xPt100 TF StrongSens; -50...+500 °C;316L
		E	1xPt100 TF QuickSens; -50...+200 °C; 316L
		F	1xPt100 TF QuickSens; -50...+400 °C; 316L
		L	1xTC type J; max. 800 °C; 316L
		M	2xTC type J; max. 800 °C; 316L
		N	1xTC type K; max. 1100 °C; Alloy600
		O	2xTC type K; max. 1100 °C; Alloy600
		P	1xTC type N; max. 1100 °C; Alloy600
		Q	2xTC type N; max. 1100 °C; Alloy600
		Y	Special version, TSP-no, to be spec.
g	Sensor Standard; Classification	n.s. *1	Not relevant for Explosion Safety
h	Electrical Connection	0A	Flying leads
		1A	Terminal block (only with terminal head A1, D1, H1 H3)
		2C	4-20mA, 1-channel TMT71, head transmitter DIN B
		2D *3	4-20 mA HART, TMT162
		2F *3	4-20mA HART, 2-channel TMT162
		2H	4-20 mA, 1-channel TMT31, PCP 0.15 K, head transmitter DIN B
		2I	4-20 mA, 1-channel TMT31, PCP 0.1 K, head transmitter DIN B
		3A	HART, 1-channel TMT72, head transmitter DIN B
		3C	HART, 2-channel TMT82, head transmitter DIN B
		3D	HART, 2-channel TMT82, SIL head transmitter DIN B
		4A	FOUNDATION Fieldbus, 2-channel TMT85, head transmitter DIN B
		5A	PROFIBUS PA, 2-channel TMT84, head transmitter DIN B
		6B	PROFINET w. Ethernet-APL/SPE, TMT86, head transmitter DIN B
		6C	PROFINET w. Ethernet-APL/SPE, TMT86 SIL, conformity + PROFIsafe, head transmitter DIN B

Suffix code	Explanation	Value	Explanation
		6U	IO-Link, 1-channel TMT36, head transmitter DIN B
		7A *4	HART, 1-channel TMT142
i	Terminal Head;	A1 *2	TA30A comfort flip cover; Alu; IP66/68
	Material;	A2 *2	TA30A + display, comfort flip cover; Alu; IP66/68
	Protect. Class	D1 *2	TA30D comfort, high flip cover; Alu; IP66/68
		F1 *3	Dual chamber field housing; Alu; IP67 NEMA 4X, backlit display
		F2 *3	Dual chamber field housing; 316L; IP67 NEMA 4X, backlit display
		F3 *4	Single chamber field housing; Alu; IP67 backlit display
		F4 *4	Single chamber field housing; 316L; IP67 backlit display
		F5 *4	Single chamber field housing; Alu; IP67 w/o display
		F6 *4	Single chamber field housing; 316L; IP67 w/o display
		F7 *3	Dual chamber field housing; Alu; IP67 w/o display
		F8 *3	Dual chamber field housing; 316L; IP67 w/o display
		H1	TA30H Ex d/XP; 316L; IP66/68
		H2	TA30H Ex d/XP + display; 316L; IP66/68
		H3	TA30H Ex d/XP; Alu; IP66/68
		H4	TA30H Ex d/XP + display; Alu; IP66/68
		H5	TA30H field housing, display frontal; Alu; IP66/68
		H6	TA30H field housing, display frontal; 316; IP66/66
		YY	Special varnishing (Non-conductive) in combination with digit A1 to H6
j	Cable entry	A	1x thread M20x1.5
	Terminal head	B	1x thread NPT1/2
		E	2x thread NPT1/2
		F	1x thread NPT3/4
		G	2x thread NPT3/4
k	Device Version	n.s. *1	Not relevant for Explosion Safety
l	Second Transmitter (mounted)		Not allowed
m	Service	n.s. *1	Not relevant for Explosion Safety
n	Test, Certificate, Declaration	n.s. *1	Not relevant for Explosion Safety
o	Additional Approval	n.s. *1	Not relevant for Explosion Safety
p	Additional Option	n.s. *1	Not relevant for Explosion Safety
q	Accessory Mounted	n.s. *1	Not relevant for Explosion Safety
r	Calibration Thermometer	n.s. *1	Not relevant for Explosion Safety
s	Calibration Points ≥ 0 °C	n.s. *1	Not relevant for Explosion Safety
t	Calibration-Points ≤ 0 °C	n.s. *1	Not relevant for Explosion Safety
u	Firmware Version	n.s. *1	Not relevant for Explosion Safety
v	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 suffix code a = 8F
*3 part of field temperature transmitter TMT162
*4 part of field temperature transmitter TMT142

Type Suffix code
TM131- abcdefghijklmnopqrstuvwxyz

Suffix code	Explanation	Value	Explanation
a	Approval	8F	ATEX IECEx II1/2D Ex ta/tb IIIC Da/Db
		86	ATEX IECEx II1/2G Ex db IIC Ga/Gb, II1/2D Ex ta/tb IIIC Da/Db
b	Thermowell	A	Thermometer to be assembled into existing thermowell
		B	Thermometer with thermowell, continuous, similar to DIN43772 Form 2, 3 G/F
		C	Thermometer with thermowell, hexagonal, similar to DIN43772 Form 5, 8
		D	Thermometer with thermowell, w/o lagging, similar to DIN43772 Form 2, 3
c	Thermometer Design	A	W/o neck, DIN43772 form 2
		B	Lagging, DIN43772 form 2G, 2F, 3G, 3F
		D	Removable neck D11mm acc. to DIN43772
		E	Removable neck D12mm acc. to DIN43772
		F	Removable neck D12mm M20 connection similar to DIN43772
		L	Nipple connection NPT1/2
		M	Nipple-union connection NPT1/2
		N	Nipple-union-nipple connection NPT1/2
d	Process Connection; Material	n.s. *1	Not relevant for Explosion Safety
e	Thermowell Diameter, Material	A1	W/o, insert D3mm, to be assembled into existing thermowell
		A2	W/o, insert D6mm, to be assembled into existing thermowell
		B1	9x1.25 mm, 316L
		B2	11x2 mm, 316L
		B3	14x2 mm, 316L
		B4	16x3.5 mm, 316L
		C1	9x1.25 mm, 316Ti
		C2	11x2 mm, 316Ti
		C3	14x2 mm, 316Ti
		C4	12x2.5 mm, 316Ti BASF
		D1	9x1.25 mm, AlloyC276
		D2	11x2 mm, AlloyC276
		E1	9x1.25 mm, Alloy600
		E2	11x2 mm, Alloy600
		F1	1/4"sch.80, 316
		F2	1/2"sch.80, 316
		G1	1/2"sch.40, 446
		H1	12x2.5 mm, 321
		I1	11 mm 316Ti + 12mm Tantal
		I2	12x2.5 mm 316Ti + 13mm Tantal
		YY_1	Other diameter (wall thickness ≥ 1 mm) in combination with listed materials above
		YY_2	Diameters as listed above in combination with other materials
		YY_3	Thermowell type TT131 G6D
f	Tip Shape	A	Not needed (without thermowell)
		B	Straight (DIN 43772 form 2/2G/2F)

Suffix code	Explanation	Value	Explanation
		C	Reduced, L>=50 mm
		D	Reduced, L>=70 mm
		E	Tapered, L>=90 mm
		F	Tapered, L>=115 mm (DIN 43772 Form 3G/3F)
		G	Tapered for usage with Tantal-sleeve
		H	Straight, for quick response times
		I	Tapered, for quick response times
g	Immersion Length U	n.s. *1	Not relevant for Explosion Safety
h	Removable Neck Length E	A	0mm, w/o neck
		B	Predefined by design
		C	80mm
		D	82mm
		E	145mm
		F	147mm
		G	155mm
		H	165mm
		I *2	35mm nipple
		J *2	93mm nipple-union
		K *2	142mm nipple-union-nipple
		L	47mm lamination nipple
		M	105mm lamination nipple-union
		N	154mm lamination nipple-union-nipple
		X	..... mm (501...5000mm)
		8	..... mm (30...500mm)
i	Lagging Length T	n.s. *1	Not relevant for Explosion Safety
j	Sensor Type; Measuring Range; Material	A	1xPt100 TF; -50...+400 °C; 316L
		B	1xPt100 WW; -200...+600 °C; 316L
		C	2xPt100 WW; -200...+600 °C; 316L
		D	1xPt100 TF StrongSens; -50...+500 °C;316L
		E	1xPt100 TF QuickSens; -50...+200 °C; 316L
		F	1xPt100 TF QuickSens; -50...+400 °C; 316L
		L	1xTC type J; max. 800 °C; 316L
		M	2xTC type J; max. 800 °C; 316L
		N	1xTC type K; max. 1100 °C; Alloy600
		O	2xTC type K; max. 1100 °C; Alloy600
		P	1xTC type N; max. 1100 °C; Alloy600
		Q	2xTC type N; max. 1100 °C; Alloy600
		Y	Other Thermocouples
k	Sensor Standard; Classification	n.s. *1	Not relevant for Explosion Safety
l	Electrical Connection	0A	Flying leads
		1A	Terminal block (only with terminal head A1, D1, H1 H3)
		2A	4-20 mA, 1-channel TMT180 PCP 0.2K, head transmitter DIN B
		2B	4-20 mA, 1-channel TMT180 PCP 0.1K, head transmitter DIN B
		2C	4-20 mA, 1-channel TMT71, head transmitter DIN B
		2D *3	4-20 mA HART, TMT162
		2E *3	4-20mA HART, TMT162 SIL

Suffix code	Explanation	Value	Explanation
		2F *3	4-20mA HART, 2-channel TMT162
		2G *3	4-20mA HART, 2-channel TMT162 SIL
		2H	4-20mA, 1-channel TMT31, PCP 0.15 K, head transmitter DIN B
		2I	4-20mA, 1-channel TMT31, PCP 0.1 K, head transmitter DIN B
		3A	HART, 1-channel TMT72, head transmitter DIN B
		3C	HART, 2-channel TMT82, head transmitter DIN B
		3D	HART, 2-channel TMT82, SIL head transmitter DIN B
		3F	4-20mA HART, 2-channel TMT82 SIL2/3 OIML/MID for gas, temp. range -30...+120 °C
		3I	4-20mA HART, 2-channel TMT82 SIL2/3 OIML/MID for liquid, temp. range -200...+200 °C
		4A	FOUNDATION Fieldbus, 2-channel TMT85, head transmitter DIN B
		4B *3	FOUNDATION Fieldbus, TMT162
		4C *3	FOUNDATION Fieldbus, 2-channel TMT162
		5A	PROFIBUS PA, 2-channel TMT84, head transmitter DIN B
		5B *3	PROFIBUS PA, TMT162
		5C *3	PROFIBUS PA, 2-channel TMT162
		6B	PROFINET w. Ethernet-APL/SPE, TMT86, head transmitter DIN B
		6C	PROFINET w. Ethernet-APL/SPE, TMT86 SIL, conformity + PROFIsafe, head transmitter DIN B
		6U	IO-Link, 1-channel TMT36, head transmitter DIN B
		7A *4	HART, 1-channel TMT142
m	Terminal Head; Material; Protect. Class	A1 *2	TA30A comfort flip cover; Alu; IP66/68
		A2 *2	TA30A + display, comfort flip cover; Alu; IP66/68
		D1 *2	TA30D comfort, high flip cover; Alu; IP66/68
		F1 *3	Dual chamber field housing; Alu; IP67 NEMA 4X, backlit display
		F2 *3	Dual chamber field housing; 316L; IP67 NEMA 4X, backlit display
		F3 *4	Single chamber field housing; Alu; IP67 NEMA 4X, backlit display
		F4 *4	Single chamber field housing; 316L; IP67 NEMA 4X, backlit display
		F5 *4	Single chamber field housing; Alu; IP67 NEMA 4X, w/o display
		F6 *4	Single chamber field housing; 316L; IP67 NEMA 4X, w/o display
		F7 *3	Dual chamber field housing; Alu; IP67 NEMA 4X, w/o display
		F8 *3	Dual chamber field housing; 316L; IP67 NEMA 4X, w/o display
		H1	TA30H Ex d/XP; 316L; IP66/68
		H2	TA30H Ex d/XP + display; 316L; IP66/68
		H3	TA30H Ex d/XP; Alu; IP66/68
		H4	TA30H Ex d/XP + display; Alu; IP66/68
		H5	TA30H field housing, display frontal; Alu; IP66/68
		H6	TA30H field housing, display frontal; 316; IP66/68
		YY	Special varnishing (Non-conductive) in combination with digit A1 to H6

Suffix code	Explanation	Value	Explanation
n	Cable entry Terminal head	A	1x thread M20x1.5
		B	1x thread NPT1/2
		C *2	1x thread G1/2 (only for Ex tb)
		D	2x thread M20x1.5
		E	2x thread NPT1/2
o	Device Version:	n.s. *1	Not relevant for Explosion Safety
p	Second Transmitter (mounted)		Not allowed
q	Service	n.s. *1	Not relevant for Explosion Safety
r	Test, Certificate, Declaration	n.s. *1	Not relevant for Explosion Safety
s	Additional Approval	n.s. *1	Not relevant for Explosion Safety
t	Additional Option	n.s. *1	Not relevant for Explosion Safety
u	Accessory Mounted	n.s. *1	Not relevant for Explosion Safety
v	Calibration Thermometer:	n.s. *1	Not relevant for Explosion Safety
w	Calibration Points ≥ 0 °C	n.s. *1	Not relevant for Explosion Safety
x	Calibration-Points ≤ 0 °C	n.s. *1	Not relevant for Explosion Safety
y	Firmware Version	n.s. *1	Not relevant for Explosion Safety
z	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 suffix code a = 8F
*3 part of field temperature transmitter TMT162
*4 part of field temperature transmitter TMT142

Type Suffix code
TM151- abcdefghijklmnopqrstuvwxyzaaabacadaeaf

Suffix code	Explanation	Value	Explanation
a	Approval	8F	ATEX IECEx II1/2D Ex ta/tb IIIC Da/Db
		86	ATEX IECEx II1/2G Ex db IIC Ga/Gb, II1/2D Ex ta/tb IIIC Da/Db
b	Thermowell	1	Thermometer to be assembled into existing thermowell
		A	Based on ASME B40.9, flanged
		B	Based on ASME B40.9, threaded
		C	Based on ASME B40.9, weld in
		D	Based on ASME B40.9, socket weld
		E	Based on DIN 43772 Form 4F, flanged
		G	Based on DIN 43772 Form 4, weld in
		M *2	Based on NAMUR NE170, flanged
		T	iTHERM TwistWell, flanged
c	Thermometer Design	A	W/o neck
		B	Removeable neck D11 mm, M14x1.5 acc. to DIN43772
		C	Removeable neck D11 mm, M18x1.5 acc. to DIN43772
		D	Removeable neck D11 mm, G1/2" acc. to DIN43772
		E	Removeable neck D12 mm M20 connection similar to DIN43772
		F	QuickNeck (upper half) to mount in existing thermowell with QuickNeck
		G	QuickNeck
		L	Nipple connection NPT1/2
		M	Nipple-union connection NPT1/2
		N	Nipple-union-nipple connection NPT1/2
d	Thermowell Material	AA	W/o, insert 3 mm, to be assembled into existing thermowell
		AB	W/o, insert 6 mm, to be assembled into existing thermowell
		AC	316
		AD	316L
		AE	316/316L
		AF	316Ti
		AG	347
		AH	310
		AI	316/316L iTHERM TwistWell
		BA	Alloy600
		BB	AlloyC276
		CA	10CrMo9-10
		CB	13CrMo4-5
		CC	16Mo3
		DA	A105
		DB	C22.8
		DC	P355NH
		EA	Duplex S32205
		YY	Other materials as listed in 10000013457
e	Process Connection; Material	n.s. *1	Not relevant for Explosion Safety

Suffix code	Explanation	Value	Explanation
f	Immersion Length U	n.s. *1	Not relevant for Explosion Safety
g	Geometry Wetted Parts	A0	Not needed (without thermowell)
		A1	Straight, (complete length U)
		C1	Tapered, (complete length U)
		G1	Stepped, Re1=63,5 mm (2-1/2")
		T1	Tapered, C1=65 mm
		T2	Tapered, C1=73 mm
		T3	Tapered, C1=125 mm
		T4	Tapered, C1=133 mm
		T5	Tapered, C1=275 mm
		X1	..... mm, tapered
		X2	..... mm, stepped
		X3	..... mm, unstreamed length/nozzle length (nozzle length UL<U-10mm)
		YY_1	Other diameter (wall thickness ≥ 1,35 mm) in combination with listed materials above
		YY_2	Diameters as listed above in combination with other materials
h	Lagging Length T	n.s. *1	Not relevant for Explosion Safety
i	Removable Neck Length E	A	0 mm, w/o neck
		B	Predefined by design
		G	155 mm
		H	165 mm
		I *2	35 mm nipple
		J *2	93 mm nipple-union
		K *2	142 mm nipple-union-nipple
		L	47 mm lamination nipple
		M	105 mm lamination nipple-union
		N	154 mm lamination nipple-union-nipple
		X	..... mm (>500 mm)
		8	..... mm (=<500 mm)
j	Sensor Type; Measuring Range; Material	A	1xPt100 TF; -50...+400 °C; 316L
		B	1xPt100 WW; -200...+600 °C; 316L
		C	2xPt100 WW; -200...+600 °C; 316L
		D	1xPt100 TF StrongSens; -50...+500 °C;316L
		E	1xPt100 TF QuickSens; -50...+200 °C; 316L
		F	1xPt100 TF QuickSens; -50...+400 °C; 316L
		L	1xTC type J; max. 800 °C; 316L
		M	2xTC type J; max. 800 °C; 316L
		N	1xTC type K; max. 1100 °C; Alloy600
		O	2xTC type K; max. 1100 °C; Alloy600
		P	1xTC type N; max. 1100 °C; Alloy600
		Q	2xTC type N; max. 1100 °C; Alloy600
		Y	Other Thermocouples
k	Sensor Standard; Classification	n.s. *1	Not relevant for Explosion Safety
l	Electrical Connection	0A	Flying leads
		1A	Terminal block (only with terminal head A1, D1, H1 H3)

Suffix code	Explanation	Value	Explanation
		2C	4-20 mA, 1-channel TMT71, head transmitter DIN B
		2D *3	4-20 mA HART, TMT162
		2E *3	4-20mA HART, TMT162 SIL
		2F *3	4-20mA HART, 2-channel TMT162
		2G *3	4-20mA HART, 2-channel TMT162 SIL
		2H	4-20mA, 1-channel TMT31, PCP 0.15 K, head transmitter DIN B
		2I	4-20mA, 1-channel TMT31, PCP 0.1 K, head transmitter DIN B
		3A	HART, 1-channel TMT72, head transmitter DIN B
		3C	HART, 2-channel TMT82, head transmitter DIN B
		3D	HART, 2-channel TMT82, SIL head transmitter DIN B
		3F	4-20mA HART, 2-channel TMT82 SIL2/3 OIML/MID for gas, temp. range -30...+120 °C
		3I	4-20mA HART, 2-channel TMT82 SIL2/3 OIML/MID for liquid, temp. range -200...+200 °C
		4A	FOUNDATION Fieldbus, 2-channel TMT85, head transmitter DIN B
		4B *3	FOUNDATION Fieldbus, TMT162
		4C *3	FOUNDATION Fieldbus, 2-channel TMT162
		5A	PROFIBUS PA, 2-channel TMT84, head transmitter DIN B
		5B *3	PROFIBUS PA, TMT162
		5C *3	PROFIBUS PA, 2-channel TMT162
		6B	PROFINET w. Ethernet-APL/SPE, TMT86, head transmitter DIN B
		6C	PROFINET w. Ethernet-APL/SPE, TMT86 SIL, conformity + PROFIsafe, head transmitter DIN B
		6U	IO-Link, 1-channel TMT36, head transmitter DIN B
		7A *4	HART, 1-channel TMT142
m	Terminal Head; Material; Protect. Class	A1 *2	TA30A comfort flip cover; Alu; IP66/68
		A2 *2	TA30A + display, comfort flip cover; Alu; IP66/68
		D1 *2	TA30D comfort, high flip cover; Alu; IP66/68
		F1 *3	Dual chamber field housing; Alu; IP67 NEMA 4X, backlit display
		F2 *3	Dual chamber field housing; 316L; IP67 NEMA 4X, backlit display
		F3 *4	Single chamber field housing; Alu; IP67 NEMA 4X, backlit display
		F4 *4	Single chamber field housing; 316L; IP67 NEMA 4X, backlit display
		F5 *4	Single chamber field housing; Alu; IP67 NEMA 4X, w/o display
		F6 *4	Single chamber field housing; 316L; IP67 NEMA 4X, w/o display
		F7 *3	Dual chamber field housing; Alu; IP67 NEMA 4X, w/o display
		F8 *3	Dual chamber field housing; 316L; IP67 NEMA 4X, w/o display
		H1	TA30H Ex d/XP; 316L; IP66/68
		H2	TA30H Ex d/XP + display; 316L; IP66/68
		H3	TA30H Ex d/XP; Alu; IP66/68
		H4	TA30H Ex d/XP + display; Alu; IP66/68
		H5	TA30H field housing, display frontal; Alu; IP66/68

Suffix code	Explanation	Value	Explanation
		H6	TA30H field housing, display frontal; 316; IP66/68
		YY	Special varnishing (Non-conductive) in combination with digit A1 to H6
n	Cable entry Terminal head	A	1x thread M20x1.5
		B	1x thread NPT1/2
		C *2	1x thread G1/2 (only for Ex tb)
		D	2x thread M20x1.5
		E	2x thread NPT1/2
o	Device Version:	n.s. *1	Not relevant for Explosion Safety
p	Additional Design Options: *5	AA	Flange full penetration, thickn. 20-30 mm
		AB	Flange full penetration, thickn. 31-40 mm
		AC	Flange full penetration, thickn. 41-50 mm
		AD	Flange full penetration, thickn. 51-60 mm
		AE	Forged thermowell
		AF	Hexagonal Lagging
		AG	Flange face B1, EN1092-1
		AH	Flange face B2, EN1092-1
		AI	Flange face C, EN1092-1
		AJ	Flange face E, EN1092-1
		AK	Flange face FF, ANSI B16.5
		AL	Flange face RF, ANSI B16.5
		AM	Flange face RTJ, ANSI B16.5
		AN	Flange face LM, ANSI B16.5
		AO	Flange face LG, ANSI B16.5
		AQ	QuickSleeve for 6.5 mm bore
		AR	QuickSleeve for 7 mm bore
q	Special Root Diameter D1: *5	CA	12.7 mm
		CB	16 mm
		CC	17 mm
		CD	18 mm
		CE	19 mm
		CF	22.2 mm (7/8")
		CG	24 mm
		CH	25 mm
		CI	25.4 mm (1")
		CJ	26 mm
		CK	27 mm (1-1/16")
		CL	30 mm
		CM	20 mm
		CN	22 mm
		CX	..... mm
r	Special Tip Diameter D2: *5	DA	9 mm
		DB	12.5 mm
		DC	12.7 mm (1/2")
		DD	14 mm
		DE	15.9 mm (5/8")
		DF	17 mm

Suffix code	Explanation	Value	Explanation
		DG	18 mm
		DH	19 mm (3/4")
		DI	22 mm
		DJ	22.2 mm
		DK	15 mm
		DX	..... mm
s	Special Bore Diameter Di: *5	EA	3.5 mm
		EB	6.5 mm
		EC	7 mm
		ED	Stepped 6.5>3.5 mm (length 35 mm)
		EE	Stepped 7>6.1 mm (length 50 mm)
		EY	..... mm
t	Special Tip Thickness B: *5	EQ	4 mm
		ER	6.35 mm (1/4")
		ES	6 mm, rounded (r=1/2 of D2)
		ET	6 mm, flat (standard)
		E8	..... mm
u	Thermometer Connection Ge1: *5	FA	M14x1.5 female thread
		FB	M18x1.5 female thread
		FC	M20x1.5 female thread
		FD	NPT1/2 female thread
		FE	G1/2 female thread
		F9	Special version, TSP-no. to be spec.
v	Second Transmitter (mounted)		Not allowed
w	Service	n.s. *1	Not relevant for Explosion Safety
x	Test, Certificate, Declaration	n.s. *1	Not relevant for Explosion Safety
y	Additional Approval	n.s. *1	Not relevant for Explosion Safety
z	Additional Option	n.s. *1	Not relevant for Explosion Safety
aa	Accessory Mounted	n.s. *1	Not relevant for Explosion Safety
ab	Calibration Thermometer:	n.s. *1	Not relevant for Explosion Safety
ac	Calibration Points ≥ 0 °C	n.s. *1	Not relevant for Explosion Safety
ad	Calibration-Points ≤ 0 °C	n.s. *1	Not relevant for Explosion Safety
ae	Firmware Version	n.s. *1	Not relevant for Explosion Safety
af	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 suffix code a = 8F
*3 part of field temperature transmitter TMT162
*4 part of field temperature transmitter TMT142
*5 optional feature

Type Suffix code
TM152- abcdefghijklmnopqrstuvwxyzaaabacad

Suffix code	Explanation	Value	Explanation
a	Approval	8F	ATEX IECEx II1/2D Ex ta/tb IIIC Da/Db
		86	ATEX IECEx II1/2G Ex db IIC Ga/Gb, II1/2D Ex ta/tb IIIC Da/Db
b	Thermowell	A	ASME, flanged, standard penetration
		B	ASME, flanged, full penetration
		C	ASME, threaded
		D	ASME, weld in
		E	ASME, socket weld
		F	iTHERM TwistWell, flanged, standard penetration
		G	iTHERM TwistWell, flanged, full penetration
		1	Thermometer to be assembled into existing thermowell
c	Process/Thermowell Connection Size	n.s. *1	Not relevant for Explosion Safety
d	Thermowell Material	AA	W/o, insert 6mm, to be used with thermowell
		AB	W/o, insert 1/4", to be used with thermowell
		AE	316/316L
		AI	316/316L iTHERM TwistWell
		AJ	304/304L
		BA	Alloy600
		BB	AlloyC276
		CA	A182 F22
		CD	A182 F11
		CE	A182 F91
		DA	A105
		EA	Duplex S32205
		IB	316/316L + Tantalum sleeve
		YY	Other materials as listed in 10000013457
e	Pressure Rating	n.s. *1	Not relevant for Explosion Safety
f	Immersion Length U	n.s. *1	Not relevant for Explosion Safety
g	Geometry Wetted Parts	A0	Not needed (without thermowell)
		A1	Straight (complete length U)
		C1	Tapered (complete length U)
		G1	Stepped, Re1=2-1/2"
		X1	..... in, tapered, increment 0.25
		X2	..... in, stepped, increment 0.25
		X3	..... mm, unstreamed length (nozzle length), increment 0.25
		YY_1	Other diameter (wall thickness ≥ 1,35 mm [0.053”]) in combination with listed materials above
		YY_2	Diameters as listed above in combination with other materials
h	Lagging Length T	n.s. *1	Not relevant for Explosion Safety
i	Removable Neck Length E	AA *2	1in nipple
		AB *2	4in nipple-union-nipple
		AC *2	7in nipple-union-nipple
		AX *2	..... in (=<12in, increment 0.5)

Suffix code	Explanation	Value	Explanation
		BA	1.5in lamination nipple
		BB	4in lamination nipple-union-nipple
		BC	7in lamination nipple-union-nipple
		BX	..... in, laminated (=<12in, increment 0.5)
		CA	QuickNeck, NPT1/2 male thread, neck separable, quick release
j	Sensor Type; Measuring Range; Material	B	1xPt100 WW; -200...+600 °C; 316L
		C	2xPt100 WW; -200...+600 °C; 316L
		D	1xPt100 TF StrongSens; -50...+500 °C;316L
		E	1xPt100 TF QuickSens; -50...+200 °C; 316L
		G	1xPt100 Basic TF ; -50...+200 °C; 316L
		H	2xPt100 Basic TF ; -50...+200 °C; 316L
		L	1xTC type J; max. 800 °C; 316L
		M	2xTC type J; max. 800 °C; 316L
		N	1xTC type K; max. 1100 °C; Alloy600
		O	2xTC type K; max. 1100 °C; Alloy600
		P	1xTC type N; max. 1100 °C; Alloy600
		Q	2xTC type N; max. 1100 °C; Alloy600
		Y	Other Thermocouples
k	Sensor Standard; Classification	n.s. *1	Not relevant for Explosion Safety
l	Electrical Connection	0A	Flying leads
		1A	Terminal block (only with terminal head A1, D1, H1 H3)
		2C	4-20 mA, 1-channel TMT71, head transmitter DIN B
		2D *3	4-20 mA HART, TMT162
		2E *3	4-20mA HART, TMT162 SIL
		2F *3	4-20mA HART, 2-channel TMT162
		2G *3	4-20mA HART, 2-channel TMT162 SIL
		2H	4-20mA, 1-channel TMT31, PCP 0.15 K, head transmitter DIN B
		2I	4-20mA, 1-channel TMT31, PCP 0.1 K, head transmitter DIN B
		3A	HART, 1-channel TMT72, head transmitter DIN B
		3C	HART, 2-channel TMT82, head transmitter DIN B
		3D	HART, 2-channel TMT82, SIL head transmitter DIN B
		4A	FOUNDATION Fieldbus, 2-channel TMT85, head transmitter DIN B
		4B *3	FOUNDATION Fieldbus, TMT162
		4C *3	FOUNDATION Fieldbus, 2-channel TMT162
		5A	PROFIBUS PA, 2-channel TMT84, head transmitter DIN B
		5B *3	PROFIBUS PA, TMT162
		5C *3	PROFIBUS PA, 2-channel TMT162
		6B	PROFINET w. Ethernet-APL/SPE, TMT86, head transmitter DIN B
		6C	PROFINET w. Ethernet-APL/SPE, TMT86 SIL, conformity + PROFIsafe, head transmitter DIN B
		6U	IO-Link, 1-channel TMT36, head transmitter DIN B
		7A *4	HART, 1-channel TMT142
m	Terminal Head; Material; Protect. Class	A1 *2	TA30A comfort flip cover; Alu; IP66/68
		A2 *2	TA30A + display, comfort flip cover; Alu; IP66/68
		D1 *2	TA30D comfort, high flip cover; Alu; IP66/68

Suffix code	Explanation	Value	Explanation
		F1 *3	Dual chamber field housing; Alu; IP67 NEMA 4X, backlit display
		F2 *3	Dual chamber field housing; 316L; IP67 NEMA 4X, backlit display
		F3 *4	Single chamber field housing; Alu; IP67 NEMA 4X, backlit display
		F4 *4	Single chamber field housing; 316L; IP67 NEMA 4X, backlit display
		F5 *4	Single chamber field housing; Alu; IP67 NEMA 4X, w/o display
		F6 *4	Single chamber field housing; 316L; IP67 NEMA 4X, w/o display
		F7 *3	Dual chamber field housing; Alu; IP67 NEMA 4X, w/o display
		F8 *3	Dual chamber field housing; 316L; IP67 NEMA 4X, w/o display
		H1	TA30H Ex d/XP; 316L; IP66/68
		H2	TA30H Ex d/XP + display; 316L; IP66/68
		H3	TA30H Ex d/XP; Alu; IP66/68
		H4	TA30H Ex d/XP + display; Alu; IP66/68
		H5	TA30H field housing, display frontal; Alu; IP66/68
		H6	TA30H field housing, display frontal; 316; IP66/68
		YY	Special varnishing (Non-conductive) in combination with digit A1 to H6
n	Cable entry Terminal head	A	1x thread M20x1.5
		B	1x thread NPT1/2
		E	2x thread NPT1/2
		F	1x thread NPT3/4
		G	2x thread NPT3/4
o	Device Version:	n.s. *1	Not relevant for Explosion Safety
p	Additional Design Options: *5	AF	Lagging with spanner flats
		AK	Flange face FF, ANSI B16.5
		AL	Flange face RF, ANSI B16.5
		AM	Flange face RTJ, ANSI B16.5
		AQ	QuickSleeve for 6.5 mm / 0.26" bore
		AR	QuickSleeve for 7 mm bore
q	Special Root Diameter D1: *5	CB	5/8"
		CE	3/4"
		CF	7/8"
		CI	1"
		CK	1-1/16"
		CM	1-1/8"
		CN	1-1/4"
		CO	1-3/8"
		CP	1-1/2"
		C9	… inch (5/8"..1-1/2")
r	Special Tip Diameter D2: *5	DC	1/2"
		DE	5/8"
		DF	2/3"

Suffix code	Explanation	Value	Explanation
		DH	3/4"
		DJ	7/8"
		DK	1"
		DL	1-1/8"
		DM	1-1/4"
		DN	1-3/8"
		DO	1-1/2"
		D9	… inch (1/2"..1-1/2")
s	Special Bore Diameter Di: *5	EB	6.5 mm [0.256"]
		EC	7 mm [0.256"]
		EE	6.61 mm [0.26"] (standard)
		EF	9.78 mm [0.385"]
t	Second Transmitter (mounted)		Not allowed
u	Service	n.s. *1	Not relevant for Explosion Safety
v	Test, Certificate, Declaration	n.s. *1	Not relevant for Explosion Safety
w	Additional Approval	n.s. *1	Not relevant for Explosion Safety
x	Additional Option	n.s. *1	Not relevant for Explosion Safety
y	Accessory Mounted	n.s. *1	Not relevant for Explosion Safety
z	Calibration Thermometer:	n.s. *1	Not relevant for Explosion Safety
aa	Calibration Points ≥ 0 °C	n.s. *1	Not relevant for Explosion Safety
ab	Calibration-Points ≤ 0 °C	n.s. *1	Not relevant for Explosion Safety
ac	Firmware Version	n.s. *1	Not relevant for Explosion Safety
ad	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 suffix code a = 8F
*3 part of field temperature transmitter TMT162
*4 part of field temperature transmitter TMT142
*5 optional feature

Electrical data

Power supply transmitter TMT162: max. 40 Vdc, 3 W
transmitter TMT142: max. 36 Vdc, 1 W
other transmitters: max. 42 Vdc, 23 mA

Sensor: max. 10 Vdc, 1 mA

Thermal data

The relation between the type, electrical connection, temperature class, maximum surface temperature, ambient temperature range and process temperature range is shown in the following tables.

Temperature assemblies with RTD temperature sensors					
Electrical connection[*1]	Tempe-rature class	Maximum surface temperature	Ambient temperature range	Process temperature range	
				Insert diameter	
				3 mm, 6 mm dual	6 mm
Type TM111					
Terminal block[*2]: 1A	T6	T85 °C	-50 °C to +70 °C	-50 °C to +55 °C	-50 °C to +68 °C
	T5	T100 °C	-50 °C to +80 °C	-50 °C to +70 °C	-50 °C to +83 °C
	T4	T135 °C	-50 °C to +120 °C	-50 °C to +105 °C	-50 °C to +118 °C
	T3	T200 °C	-50 °C to +120 °C	-50 °C to +170 °C	-50 °C to +183 °C
	T2	T300 °C	-50 °C to +120 °C	-50 °C to +265 °C	-50 °C to +278 °C
	T1	T450 °C	-50 °C to +120 °C	-50 °C to +415 °C	-50 °C to +428 °C
Type TM111, TM112, TM131, TM151 and TM152					
Flying leads: 0A Transmitter TMT31: 2H, 2I TMT36: 6U TMT71: 2C TMT72: 3A TMT82: 3C, 3D, 3F, 3I TMT84: 5A TMT85: 4A TMT86: 6B, 6C TMT180: 2A, 2B	T6	T85 °C	-40 °C to +65 °C	-50 °C to +55 °C	-50 °C to +68 °C
	T5	T100 °C	-40 °C to +80 °C	-50 °C to +70 °C	-50 °C to +83 °C
	T4	T135 °C	-40 °C to +85 °C	-50 °C to +105 °C	-50 °C to +118 °C
	T3	T200 °C	-40 °C to +85 °C	-50 °C to +170 °C	-50 °C to +183 °C
	T2	T300 °C	-40 °C to +85 °C	-50 °C to +265 °C	-50 °C to +278 °C
	T1	T450 °C	-40 °C to +85 °C	-50 °C to +415 °C	-50 °C to +428 °C
Type TM112, TM131, TM151 and TM152					
Terminal block[*2]: 1A	T6	T85 °C	-50 °C to +70 °C	-50 °C to +55 °C	-50 °C to +68 °C
	T5	T100 °C	-50 °C to +80 °C	-50 °C to +70 °C	-50 °C to +83 °C
	T4	T135 °C	-50 °C to +90 °C	-50 °C to +105 °C	-50 °C to +118 °C
	T3	T200 °C	-50 °C to +90 °C	-50 °C to +170 °C	-50 °C to +183 °C
	T2	T300 °C	-50 °C to +90 °C	-50 °C to +265 °C	-50 °C to +278 °C
	T1	T450 °C	-50 °C to +90 °C	-50 °C to +415 °C	-50 °C to +428 °C
Transmitter TMT142: 7A TMT162: 2D, 2E, 2F, 2G, 4B, 4C, 5B, 5C	T6	T85 °C	-40 °C to +55 °C	-50 °C to +55 °C	-50 °C to +68 °C
	T5	T100 °C	-40 °C to +70 °C	-50 °C to +70 °C	-50 °C to +83 °C
	T4	T135 °C	-40 °C to +80 °C	-50 °C to +105 °C	-50 °C to +118 °C
	T3	T200 °C	-40 °C to +80 °C	-50 °C to +170 °C	-50 °C to +183 °C
	T2	T300 °C	-40 °C to +80 °C	-50 °C to +265 °C	-50 °C to +278 °C
	T1	T450 °C	-40 °C to +80 °C	-50 °C to +415 °C	-50 °C to +428 °C

Temperature assemblies with thermocouple temperature sensors				
Electrical connection[*1]	Tempe-rature class	Maximum surface temperature	Ambient temperature range	Process temperature range
Type TM111				
Terminal block[*2]: 1A	T6	T85 °C	-50 °C to +70 °C	-50 °C to +85 °C
	T5	T100 °C	-50 °C to +80 °C	-50 °C to +100 °C
	T4	T135 °C	-50 °C to +120 °C	-50 °C to +135 °C
	T3	T200 °C	-50 °C to +120 °C	-50 °C to +200 °C
	T2	T300 °C	-50 °C to +120 °C	-50 °C to +300 °C
	T1	T450 °C	-50 °C to +120 °C	-50 °C to +450 °C
Type TM111, TM112, TM131, TM151 and TM152				
Flying leads: 0A Transmitter TMT71: 2C TMT72: 3A TMT82: 3C, 3D, 3F, 3I TMT84: 5A TMT85: 4A TMT86: 6B, 6C	T6	T85 °C	-40 °C to +65 °C	-50 °C to +85 °C
	T5	T100 °C	-40 °C to +80 °C	-50 °C to +100 °C
	T4	T135 °C	-40 °C to +85 °C	-50 °C to +135 °C
	T3	T200 °C	-40 °C to +85 °C	-50 °C to +200 °C
	T2	T300 °C	-40 °C to +85 °C	-50 °C to +300 °C
	T1	T450 °C	-40 °C to +85 °C	-50 °C to +450 °C
Type TM112, TM131, TM151 and TM152				
Terminal block[*2]: 1A	T6	T85 °C	-50 °C to +70 °C	-50 °C to +85 °C
	T5	T100 °C	-50 °C to +80 °C	-50 °C to +100 °C
	T4	T135 °C	-50 °C to +90 °C	-50 °C to +135 °C
	T3	T200 °C	-50 °C to +90 °C	-50 °C to +200 °C
	T2	T300 °C	-50 °C to +90 °C	-50 °C to +300 °C
	T1	T450 °C	-50 °C to +90 °C	-50 °C to +450 °C
Transmitter TMT142: 7A TMT162: 2D, 2E, 2F, 2G, 4B, 4C, 5B, 5C	T6	T85 °C	-40 °C to +55 °C	-50 °C to +85 °C
	T5	T100 °C	-40 °C to +70 °C	-50 °C to +100 °C
	T4	T135 °C	-40 °C to +80 °C	-50 °C to +135 °C
	T3	T200 °C	-40 °C to +80 °C	-50 °C to +200 °C
	T2	T300 °C	-40 °C to +80 °C	-50 °C to +300 °C
	T1	T450 °C	-40 °C to +80 °C	-50 °C to +450 °C

[*1]: TM111 and TM112 suffix code h, TM131, TM151 and TM152 suffix code l.
[*2]: In an enclosure with a blind cover: TM111 and TM112 suffix code i / TM131, TM151 and TM152 suffix code m = A1, D1, H1 or H3.

Cortem RB**1NS Union XP:

material	Service temperature range
Stainless steel	-50 °C to +150 °C

O-rings of the QuickNeck construction:

Type	Service temperature range
EPDM	-50 °C to +120 °C

Seals at connection points:

Type	Service temperature range
Loctite 270	-50 °C to +130 °C
PTFE Tape	

Thermowell for type TM151:

Material	Service temperature range
10CrMo9-10	-20 °C to +625 °C
13CrMo4-5	-30 °C to +555 °C
16Mo3	-10 °C to +530 °C
A105	-10 °C to +480 °C
P355NH	-20 °C to +500 °C
DuplexS32205	-46 °C to +316 °C

Thermowell for type TM152:

Material	Service temperature range
A182 F11	-30 °C to +450 °C
A182 F22	-20 °C to +450 °C
A192 F91	-10 °C to +450 °C
A105	-10 °C to +480 °C
DuplexS32205	-46 °C to +316 °C

Separately certified parts

Following separately certified parts can be used as part of the equipment. The full specification of these parts are given in the test report.

Separately certified parts
Connection heads - TA30H, TA30A and TA30D
Field Temperature Transmitter - TMT142 and TMT162
Connection Fitting - RB**1NS Union XP

Marking

Type	Suffix code a	ATEX code	IEC code
TM111	8F	Ⓔx II 2 D	Ex tb IIIC T85 °C...T450 °C Db
	86	Ⓔx II 2 G Ⓔx II 2 D	Ex db IIC T6...T1 Gb Ex tb IIIC T85 °C...T450 °C Db
TM112	8F	Ⓔx II 2 D	Ex tb IIIC T85 °C...T450 °C Db
	86	Ⓔx II 2 G Ⓔx II 2 D	Ex db IIC T6...T1 Gb Ex tb IIIC T85 °C...T450 °C Db
TM131	8F	Ⓔx II 1/2 D	Ex ta IIIC T_{200} 85 °C…T_{200} 450 °C Da / Ex tb IIIC T85 °C…T450 °C Db
	86	Ⓔx II 1/2 G Ⓔx II 1/2 D	Ex db IIC T6...T1 Ga/Gb Ex ta IIIC T_{200} 85 °C…T_{200} 450 °C Da / Ex tb IIIC T85 °C…T450 °C Db
TM151	8F	Ⓔx II 1/2 D	Ex ta IIIC T_{200} 85 °C…T_{200} 450 °C Da / Ex tb IIIC T85 °C…T450 °C Db
	86	Ⓔx II 1/2 G Ⓔx II 1/2 D	Ex db IIC T6...T1 Ga/Gb Ex ta IIIC T_{200} 85 °C…T_{200} 450 °C Da / Ex tb IIIC T85 °C…T450 °C Db
TM152	8F	Ⓔx II 1/2 D	Ex ta IIIC T_{200} 85 °C…T_{200} 450 °C Da / Ex tb IIIC T85 °C…T450 °C Db
	86	Ⓔx II 1/2 G Ⓔx II 1/2 D	Ex db IIC T6...T1 Ga/Gb Ex ta IIIC T_{200} 85 °C…T_{200} 450 °C Da / Ex tb IIIC T85 °C…T450 °C Db