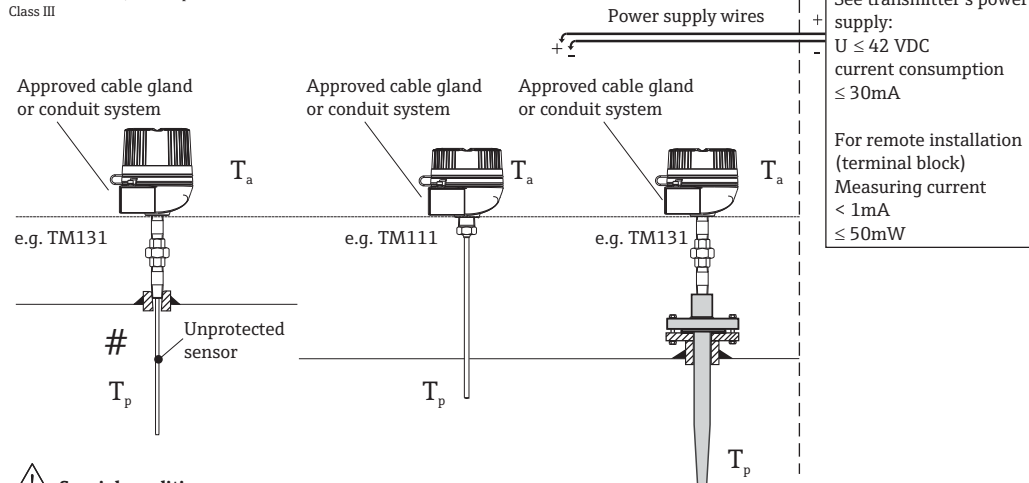


Hazardous (Classified) Location
 Class I / Division 1, 2 / Groups ABCD
 Class II / Division 1, 2 / Groups EFG
 Class III

Nonhazardous Locations



See transmitter's power supply:
 $U \leq 42$ VDC
 current consumption ≤ 30 mA
 For remote installation (terminal block)
 Measuring current < 1 mA
 ≤ 50 mW

Special condition:

- Sensors of TM1x1 with diameter smaller than 6mm are to be mechanically protected by thermowell.
- Following Sensor options of TM1x1 shall be mechanically protected by a thermowell:

TM111- abcdef...

TM131- abcdefghi...

b Sensor Diameter, Material

- A 3mm
- C 6mm

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

f Sensor Type; Measuring Range; Material:

- D 1xPt100 TF StrongSens;
- E 1xPt100 TF QuickSens;
- F 1xPt100 TF QuickSens;

j Sensor Type; Measuring Range; Material:

- D 1xPt100 TF StrongSens;
- E 1xPt100 TF QuickSens;
- F 1xPt100 TF QuickSens;

Associated non-incendive power supply unit with max. electrical specifications below the characteristic values for Entity or NIFW of the assembled transmitter:

Transmitter	Ui/Vmax	Ci	Li
TMT180	30 V	144 nF	0
TMT82	30 V	0	0
TMT71, TMT72	30 V	0	0
TMT142B	30 V	5 nF	0
TMT162 HART	40 V	5.3 nF	0
TMT162 PA/FF	35 V	5 nF	10 μ H
TMT84, TMT85	35 V	5 nF	10 μ H
Terminal block	See table next page		
Flying leads	See table next page		

Installation Notes TM111, TM131

- CSA approved apparatus must be installed in accordance with manufacturer's instructions.
- Install per Canadian Electrical Code or National Electrical Code (NFPA 70).
- Use supply wires suitable for 5°C above surroundings.
- Keep tight while circuits are alive
 Garder bien fermé tant que les circuits sont sous tension
- Warning: Substitution of components may impair suitability for Class I, Division 2.
 Avertissement: La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Class I, Division 2.



EXPLOSION PROOF

Class I / Div. 1 / Groups ABCD
Class I / Div. 1 / Groups BCD
Class I / Div. 1 / Groups ABCD
Class II / Div. 1 / Groups EFG
Class III

DUST IGNITION PROOF

XP
DIP

- All conduits must be assembled with a minimum of five full threads engagement.
- A seal shall be installed within 18" of the enclosure
 Un scellement doit être installé à moins de 18" du boîtier.
- The flameproof joints are not intended to be repaired.
- For options with enclosure, type TA30H, the cylindrical process connection joint has a minimal length of 13.9 mm in which the maximum gap of 0.10 mm must be kept.
- The cylindrical process connection joint has a minimal length of 28 mm in which the maximum gap of 0.15 mm must be kept.
- For Class II Extension and/or Thermowell must be used to maintain CSA enclosure 4X rating.
- Class II use a dust tight seal.
- Enclosures must be CSA approved, for appropriate area classification.

NONINCENDIVE

Class I / Div. 2 / Groups ABCD

- Intrinsic safety barrier not required.
- Warning: Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
 Avertissement : Risque d'explosion - Ne pas débrancher tant que le circuit est sous tension, à moins qu'il s'agisse d'un emplacement non dangereux.
- Warning: Substitution of components may impair suitability for Class I, Division 2.
 Avertissement: La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Class I, Division 2.
- Nonincendive field wiring installation:
 The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive Field Wiring Apparatus with Associated Nonincendive Field Wiring Apparatus or Associated Intrinsically Safe Apparatus or Associated Apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when $V_{oc} \leq V_{max}$, $C_a \geq C_i + C_{cable}$, $L_a \geq L_i + L_{cable}$.
- For transmitter's or sensor's Nonincendive Field Wiring parameters see table's parameters.
 For these current controlled circuits, the parameter I_{max} is not required and need not to be aligned with parameter I_{sc} and I_t of the Associated Nonincendive Field Wiring Apparatus or Associated Apparatus.
- Refer to the marked maximum ratings for assembled temperature transmitter's supply.

Approved	Pfanzelt	Date (yyyy-mm-dd)	2018-03-21	Dwg.rev.	A	Revision no.	W20508	Revision date (yyyy-mm-dd)	2020-09-21	Name	MP	Material	71529779 XA01961T/09/EN/02.21	Endress+Hauser
Volume (mm³)	Designed	Date (yyyy-mm-dd)	2006-03-12	Unit	TM111, TM131		Scale	1:1		Title		CONTROL DRAWING CSA		
Refer to protection notice ISO 16016	Edge of working parts ISO 13715	Geometrical tolerancing ISO 2768-mH-E	Part No.	Format	A4		Title		XP, NI, DIP		Objekt version	Sheet	1 of 2	Endress + Hauser Wetzer GmbH+Co. KG Nesselwang / Germany

Permitted ambient temperatures

Class I, Division 1, Groups A, B, C and D;
Class II, Div. 1 Groups E, F & G; Class III:

Type	assembled head transmitter	Temperature class/code	ambient temperature housing
TM111, TM131	TMT180	T6/T85°C	-40°C ≤ Ta ≤ +65°C
	TMT8x	T5/T100°C	-40°C ≤ Ta ≤ +80°C
	TMT7x	T4/T135°C	-40°C ≤ Ta ≤ +85°C
	without electronic or with terminal block	T6/T85°C	-50°C ≤ Ta ≤ +70°C
		T5/T100°C	-50°C ≤ Ta ≤ +80°C
		T4/T135°C	-50°C ≤ Ta ≤ +120°C
		T3/T200°C	-50°C ≤ Ta ≤ +120°C
T2/T300°C	-50°C ≤ Ta ≤ +120°C		
T1/T450°C	-50°C ≤ Ta ≤ +120°C		

Type	assembled field transmitter	Temperature class/code	ambient temperature housing
TM131	TMT162	T6/T85°C	-40°C ≤ Ta ≤ +55°C
	TMT142B*	T5/T100°C	-40°C ≤ Ta ≤ +70°C
		T4/T110°C	-40°C ≤ Ta ≤ +85°C

*The maximum ambient temperature is limited to +70 °C for the display models

Class I, Division 2, Groups A, B, C and D:

Type	Assembled transmitter	Temperature class	Ambient temperature range housing Ta
TM111 TM131	TMT180	T6	-40°C ≤ Ta ≤ +50°C
		T5	-40°C ≤ Ta ≤ +65°C
		T4	-40°C ≤ Ta ≤ +85°C
	TMT84, TMT85 TMT162 PA/FF TMT142B*	T6	-40°C ≤ Ta ≤ +55°C
		T5	-40°C ≤ Ta ≤ +70°C
		T4	-40°C ≤ Ta ≤ +85°C
	TMT162 HART TMT7x	T6	-50°C ≤ Ta ≤ +55°C
		T5	-50°C ≤ Ta ≤ +70°C
		T4	-50°C ≤ Ta ≤ +85°C
	TMT82	T6	-50°C ≤ Ta ≤ +58°C
		T5	-50°C ≤ Ta ≤ +75°C
		T4	-50°C ≤ Ta ≤ +85°C
	TMT8x, TMT7x with display	T6	-40°C ≤ Ta ≤ +55°C
		T5	-40°C ≤ Ta ≤ +70°C
		T4	-40°C ≤ Ta ≤ +85°C


*The maximum ambient temperature is limited to +70 °C for the display models

Permitted process temperatures

Type	Insert diameter	Temperature class/ Maximum surface	Process temperature range for assembled head transmitter TMT180, TMT8x, TMT7x and TMT142B	Process temperature range for assembled field transmitter TMT162
TM111 TM131	3mm, 3mm(dual), 6mm dual	T6 / T85°C	-50°C ≤ Tp ≤ +66°C	-50°C ≤ Tp ≤ +64°C
		T5 / T100°C	-50°C ≤ Tp ≤ +81°C	-50°C ≤ Tp ≤ +79°C
		T4 / T135°C	-50°C ≤ Tp ≤ +116°C	-50°C ≤ Tp ≤ +114°C
		T3 / T200°C	-50°C ≤ Tp ≤ +181°C	-50°C ≤ Tp ≤ +179°C
		T2 / T300°C	-50°C ≤ Tp ≤ +276°C	-50°C ≤ Tp ≤ +279°C
		T1 / T450°C	-50°C ≤ Tp ≤ +426°C	-50°C ≤ Tp ≤ +424°C
	6mm	T6 / T85°C	-50°C ≤ Tp ≤ +73°C	-50°C ≤ Tp ≤ +71°C
		T5 / T100°C	-50°C ≤ Tp ≤ +88°C	-50°C ≤ Tp ≤ +86°C
		T4 / T135°C	-50°C ≤ Tp ≤ +123°C	-50°C ≤ Tp ≤ +121°C
		T3 / T200°C	-50°C ≤ Tp ≤ +188°C	-50°C ≤ Tp ≤ +186°C
		T2 / T300°C	-50°C ≤ Tp ≤ +283°C	-50°C ≤ Tp ≤ +286°C
		T1 / T450°C	-50°C ≤ Tp ≤ +433°C	-50°C ≤ Tp ≤ +431°C

The dependency of the ambient and process temperatures upon the temperature class for assembly without transmitter (without electronic or with terminal block):

Insert diameter	Temperature class / Maximum surface	Process temperature range
		P ≤ 50 mW
3mm, 3mm (dual) or 6mm dual	T6 / T85°C	-50°C ≤ Tp ≤ +66°C
	T5 / T100°C	-50°C ≤ Tp ≤ +81°C
	T4 / T135°C	-50°C ≤ Tp ≤ +116°C
	T3 / T200°C	-50°C ≤ Tp ≤ +181°C
	T2 / T300°C	-50°C ≤ Tp ≤ +276°C
	T1 / T450°C	-50°C ≤ Tp ≤ +426°C
6mm	T6 / T85°C	-50°C ≤ Tp ≤ +73°C
	T5 / T100°C	-50°C ≤ Tp ≤ +88°C
	T4 / T135°C	-50°C ≤ Tp ≤ +123°C
	T3 / T200°C	-50°C ≤ Tp ≤ +188°C
	T2 / T300°C	-50°C ≤ Tp ≤ +283°C
	T1 / T450°C	-50°C ≤ Tp ≤ +433°C

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Volume (mm³)	Designed	Date (yyyy-mm-dd)	2006-03-12	Scale	1:1	Title		CONTROL DRAWING CSA		Series		Objekt version	Sheet	
Refer to protection notice ISO 16016	Edge of working parts ISO 13715	Geometrical tolerancing ISO 2768-mH-E	Part No.	TM111, TM131		Format		A4		XP, NI, DIP		2 of 2		Endress + Hauser Wetzer GmbH+Co. KG Nesselwang / Germany