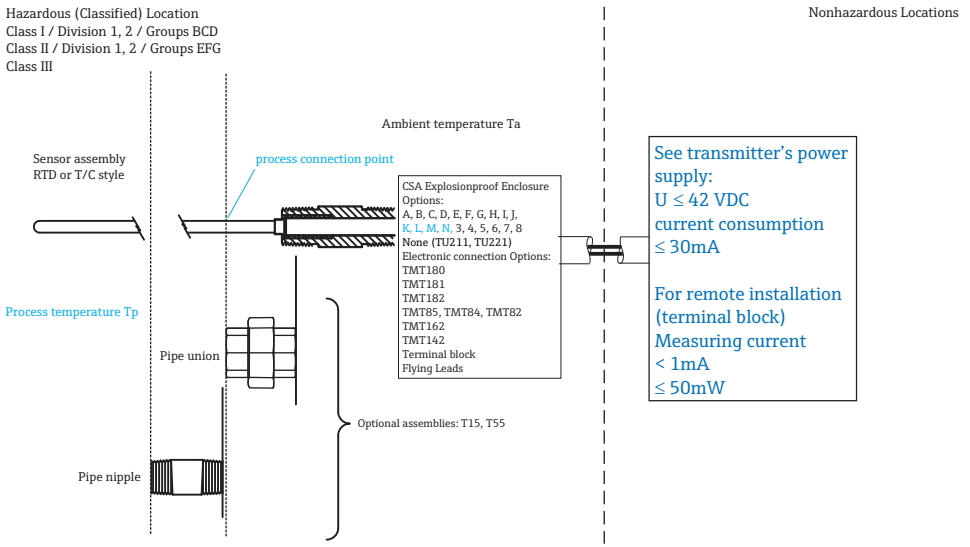

It shall be verified, taking into account the worst case process and ambient temperatures, that the temperature of the enclosure at the process connection point does not exceed the ambient temperature range of the assembly.

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	35 V	0	0
TMT142 HART	40 V	5.3 nF	0
TMT162 HART	40 V	5.3 nF	0
TMT162 PA/FF	35 V	5 nF	10 µH
TMT84, TMT85	35 V	5 nF	10 µH
Terminal block	See table next page		
Flying leads	See table next page		

Installation Notes T15, T55, TU221, TU211

- CSA approved apparatus must be installed in accordance with manufacturer's instructions.
- Install per Canadian Electrical Code.
- Use supply wires suitable for 5°C above surroundings.
- Keep tight when circuits alive.
- 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 BCD**
DUST IGNITION PROOF — **Class II / Div. 1 / Groups EFG**
Class III

- 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 Class II Extension and/or Thermowell must be used to maintain CSA enclosure 4X rating.
- Following Sensor options shall be protected by a thermowell:
  T15- abcdefg...
  g Sensor Type:
  S 1 Pt100 TF StrongSens, 3 wire, class A, -50/500°C, vibration resistant until 60g
  T 1 Pt100 TF StrongSens, 4 wire, class A, -50/500°C, vibration resistant until 60g
  U 1 Pt100 TF StrongSens, 3 wire, class AA, -50/500°C, vibration resistant until 60g
  V 1 Pt100 TF StrongSens, 4 wire, class AA, -50/500°C, vibration resistant until 60g

- Enclosures must be CSA approved, for appropriate area classification (TU211, TU221).
- Class II use a dust tight seal.

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 Voc ≤ Vmax, Ca ≥ Ci + Ccable, La ≥ Li + Lcable.
- Refer to the enclosed control drawing for Transmitter's Nonincendive Field Wiring parameters. For these current controlled circuits, the parameter Imax is not required and need not to be aligned with parameter Isc and It of the Associated Nonincendive Field Wiring Apparatus or Associated Apparatus.
- Refer to the marked maximum ratings for assembled temperature transmitter's supply.

	Approved	Date (yyyy-mm-dd)		Dwg.rev.	Revision no.	Revision date (yyyy-mm-dd)	Name	Material	
	Pfanzelt	2006-03-14	16 01 00 117	D	W18N20	2019-08-26	MP	71540285 XA02293T/09/EN/01.20	Endress+Hauser
Volume (mm³)	Designed	Date (yyyy-mm-dd)	Unit	Scale	Title			Series	
	Pfanzelt	2005-10-24	T15, T55, TU221, TU211	1:1	CONTROL DRAWING CSA XP, NI, DIP				
Refer to protection notice ISO 16016	Edge of working parts ISO 13715	Geometrical tolerancing ISO 2768-mH-E	Part No.	Format				Objekt version / Sheet	Endress + Hauser Wetzer GmbH+Co. KG Nesselwang / Germany
				A4				1 of 2	

Permitted ambient temperatures

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

Type	assembled head transmitter	Temperature class/code	ambient temperature housing
T15, T55	TMT18x TMT8x	T6/T85°C	-40°C ≤ Ta ≤ +65°C
		T5/T100°C	-40°C ≤ Ta ≤ +80°C
		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
	TMT162, TMT142	T6/T85°C	-40°C ≤ Ta ≤ +55°C
		T5/T100°C	-40°C ≤ Ta ≤ +70°C
		T4/T110°C	-40°C ≤ Ta ≤ +85°C

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

Type	Assembled transmitter	Temperature class	Ambient temperature range housing Ta
T15, T55	TMT180	T6	-40°C ≤ Ta ≤ +50°C
		T5	-40°C ≤ Ta ≤ +65°C
		T4	-40°C ≤ Ta ≤ +85°C
	TMT181, TMT182, TMT84, TMT85, TMT16 PA/FF, TMT142	T6	-40°C ≤ Ta ≤ +55°C
		T5	-40°C ≤ Ta ≤ +70°C
		T4	-40°C ≤ Ta ≤ +85°C
	TMT162 HART	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 with display	T6	-40°C ≤ Ta ≤ +55°C
		T5	-40°C ≤ Ta ≤ +70°C
		T4	-40°C ≤ Ta ≤ +85°C

Permitted process temperatures

Type	Insert diameter	Temperature class/ Maximum surface	Process temperature range for assembled head transmitter TMT18x, TMT8x	Process temperature range for assembled field transmitter TMT162, TMT142
T15, T55	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

	Approved	Date (yyyy-mm-dd)		Dwg.rev.	Revision no.	Revision date (yyyy-mm-dd)	Name	Material	
	Pfanzelt	2006-03-14	16 01 00 117	D	W18N20	2019-08-26	MP	71473471 XA02293T/09/EN/01.20	Endress+Hauser
Volume (mm³)	Designed	Date (yyyy-mm-dd)	Unit	Scale	Title			Series	
	Pfanzelt	2005-10-24	T15, T55, TU221, TU211	1:1	CONTROL DRAWING CSA XP, NI, DIP				
Refer to protection notice ISO 16016	Edge of working parts ISO 13715	Geometrical tolerancing ISO 2768-mH-E	Part No.	Format A4				Objekt version / Sheet 2 of 2	Endress + Hauser Wetzer GmbH+Co. KG Nesselwang / Germany