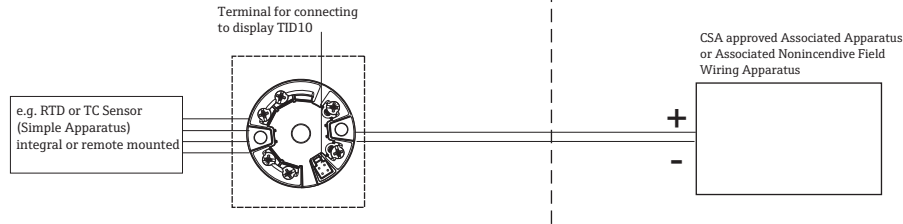


Hazardous (Classified) Location
Class I / Division 1 / Groups ABCD
Class I, Zone 0 (EPL Ga), IIC

Nonhazardous Locations



Temperature range

without display, TID10

T4 -50°C ... +85°C
T5 -50°C ... +70°C
T6 -50°C ... +55°C

with display, TID10

T4 -40°C ... +85°C
T5 -40°C ... +70°C
T6 -40°C ... +55°C

Sensor circuits (Terminals 3...6)

U_o or V_{oc} or $V_t = 4.3 V$ I_o or $I_{sc} = 4.8 mA$ $P_o = 5.2 mW$

Group A, B resp. IIC C_o or $C_a = 100 \mu F$ L_o or $L_a = 10 mH$
Group C, D resp. IIB C_o or $C_a = 10 \mu F$ L_o or $L_a = 1H$
Group C, D resp. IIA C_o or $C_a = 10 \mu F$ L_o or $L_a = 1H$

Applicable requirements see CSA certificate **70187832**

Installation Notes TMT71, TMT72

- 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.
- Stating that only simple apparatus should be terminated to the sensor connection. Simple apparatus is defined as a device that will neither generate nor store more than 1.2V, 0.1A, 0.25mW or 20µJ. Examples are Thermocouples or RTDs.
- **WARNING: POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS.**
AVERTISSEMENT: RISQUE POTENTIEL DE DÉCHARGES ELECTROSTATIQUES – VOIR CONSIGNES.

INTRINSICALLY SAFE

Class I / Div. 1 / Groups ABCD Ex ia IIC/AEx ia IIC

- CSA Approved Associated Apparatus must meet the following parameters:

$$U_o \leq U_i \quad I_o \leq I_i \quad P_o \leq P_i \quad C_a \geq C_i + C_{cable} \quad L_a \geq L_i + L_{cable}$$

Transmitter entity parameters are as follows:

$$U_i \text{ or } V_{max} \leq 30 V DC \quad C_i = 0$$

$$I_i \text{ or } I_{max} \leq 100 mA \quad L_i = 0$$

$$P_i \leq 800 mW$$

- $V_{oc} + V_{oc}$ of Handheld device $< V_{max}$, $I_{sc} + I_{sc}$ of Handheld device $< I_{max}$,
 $P_o + P_o$ of Handheld device $< P_i$, $C_a > C_i + C_{cable} + C_i$ of Handheld device,
 $L_a > L_i + L_{cable} + L_i$ of Handheld device, when Programming Handheld device is used.
- **WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.**

AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE

CONDITIONS OF ACCEPTABILITY

- Due to the risk of discharge the non-metallic parts of the equipment and of all non-metallic accessories have to be protected from electrostatic charging during installation and operation (e.g. only wipe with damp cloth and do not expose to high voltage fields).
- The equipment is for use under atmospheric conditions only, the permissible pressure range is to 1.1 bar (80 to 110 kPa) and the permissible normal oxygen content is typically 21 % v/v.
- The end user shall ensure appropriate earthing of the metallic field housing (optional) and all metallic accessories if used (wall or pipe mounting accessories for the field housing and the DIN rail clip for the head transmitter) upon installation.
- For the use as an intrinsically safe equipment, and for Zone 0 (EPL Ga), Zone 1 (EPL Gb) and Class I, Division 1 applications, the head transmitter TMT71/TMT72 shall be installed completely inside an additional enclosure, providing a degree of protection of not less than IP20 according to CSA/UL 60079-0 and CSA/UL 60079-11. The ambient temperature within the end use enclosure shall not exceed the limits of the permissible ambient temperature range. Clearances, creepage distances and separations as defined in CSA/UL 60079-11 must be considered for the installation.
- If the head transmitter TMT71/TMT72 was used in a Zone 1 (EPL Gb), Zone 2 (EPL Gc) or Class I, Division 2 application it is not allowed to use it in Zone 0 (EPL Ga) or Class I, Division 1 applications in the future.
- When connecting the head transmitter TMT71/TMT72 with a certified circuit of category "ib" into an IIC or IIB hazardous area the ignition class changes to: Ex ib IIC or Ex ib IIB.
- The use of the display type TID10 with the head transmitter TMT71/TMT72 by connecting display to the CDI interface of the head transmitter is only permitted for Zone 1 (EPL Gb), Zone 2 (EPL Gc) and Class I, Division 2 applications.
- The CDI interface is only allowed to be used for connecting the display type TID10. Irrespective of inside or outside the hazardous area, no other circuits/equipment is allowed to be connected to the CDI Interface.
- The use of the additional field housing (optional) with the head transmitter TMT71/TMT72 is only permitted for Zone 1 (EPL Gb), Zone 2 (EPL Gc) and Class I, Division 2 applications.
- Final acceptance of this equipment when installed is subject to the jurisdiction of the local inspection authority.

	Approved Pfanzelt	Date (yyyy-mm-dd) 2018-03-29	Drawing No. 10000010389	Dwg.rev. -	Revision no. -	Revision date (yyyy-mm-dd) -	Name -	Material 71487660 XA01904T/09/EN/02.20	Endress+Hauser
Volume (mm³)	Designed Pfanzelt	Date (yyyy-mm-dd) 2018-03-28	Unit iTEMP TMT71, TMT72	Scale 1:1	Title CONTROL DRAWING CSA Intrinsic Safety		Series Objekt version Sheet 1 of 2		
Refer to protection notice ISO 16016	Edge of working parts ISO 13715	Geometrical tolerancing ISO 2768-mH-E	Part No. -	Format A4			Endress + Hauser Wetzler GmbH+Co. KG Nesselwang / Germany		



A

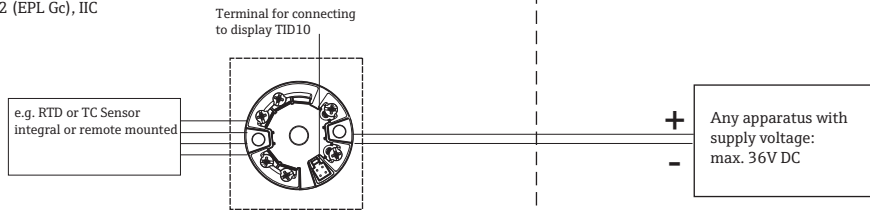
B

C

D

Hazardous (Classified) Location
Class I / Division 2 / Groups ABCD
Class I, Zone 2 (EPL Gc), IIC

Nonhazardous Locations



Temperature range for option field housing

AA, AB and AC (head transmitter as component only):

without display, TID10		with display, TID10	
T4	-50°C ... +85°C	T4	-40°C ... +85°C
T5	-50°C ... +70°C	T5	-40°C ... +70°C
T6	-50°C ... +55°C	T6	-40°C ... +55°C

Temperature range for option field housing

A1, A3, D1, D2, H1, H3, H5, H7: A2, A4, H2, H4, H6, H8:

T4	-50°C ... +85°C	T4	-40°C ... +85°C
T5	-50°C ... +80°C	T5	-40°C ... +80°C
T6	-50°C ... +70°C	T6	-40°C ... +70°C

Applicable requirements see CSA certificate **70187832**

Installation Notes TMT71, TMT72

- 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.
- Terminal specification:

	Torque	Cable version	Cable cross-section
Screw terminals	0.5Nm	Solid or flexible	= 2.5 mm ² (14 AWG)
Push-in terminals (cable version, stripping length = min. 10 mm (0.39 in))	-	Solid or flexible	0.2 to 1.5 mm ² (24 to 16 AWG)
	-	Flexible with wire end ferrules with/without plastic ferrule	0.25 to 1.5 mm ² (24 to 16 AWG)

- **WARNING: POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS.**
- **AVERTISSEMENT: RISQUE POTENTIEL DE DÉCHARGES ELECTROSTATIQUES – VOIR CONSIGNES.**

INCREASED SAFETY

Applicable for option field housing AA, AB and AC (Component):

Ex ec IIC Gc
Class I, Zone 2, AEx ec IIC
Class I, Division 2, Groups A, B, C, D

Applicable for option field housing

A1, A2, A3, A4, D1, D2, H1, H2, H3, H4, H5, H6, H7 and H8:
Ex ec IIC T6...T4 Gc
Class I, Zone 2, AEx ec IIC T6...T4 Gc
Class I, Division 2, Groups A, B, C, D; T6...T4



- Intrinsic safety barrier is not required. $V_{max} \leq 36$ V DC.
- **WARNING: EXPLOSION HAZARD - DO NOT CONNECT OR DISCONNECT WHILE CIRCUITS ARE LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.**
- **AVERTISSEMENT: RISQUE EXPLOSIF- NE JAMAIS BRANCHEZ OU DECONNECTEZ QUAND LES CIRCUITS INTERNES SONT SOUS TENSION À MOINS QUE LA ZONE SOIT PAS À RISQUES.**

Functional ratings

These ratings do not supersede Hazardous Location values

$U_{nom} \leq 36$ DC $I_{nom} \leq 4$ to 20 mA

CONDITIONS OF ACCEPTABILITY

- Due to the risk of discharge the non-metallic parts of the equipment and of all non-metallic accessories have to be protected from electrostatic charging during installation and operation (e.g. only wipe with damp cloth and do not expose to high voltage fields).
- For the use as an equipment in type of protection increased safety, and for Zone 2 (EPL Gc), and Class I, Division 2 applications, the head transmitter TMT71/TMT72 shall be installed completely inside an additional enclosure, providing a degree of protection of not less than IP54 according to CSA/UL 60079-0 and CSA/UL 60079-7. The ambient temperature within the end use enclosure shall not exceed the limits of the permissible ambient temperature range. Clearances, creepage distances and separations as defined in CSA/UL 60079-7 must be considered for the installation.
- For the use as an equipment in type of protection increased safety, and for Zone 2 (EPL Gc), and Class I, Division 2 applications, the head transmitter TMT71/TMT72 shall not be connected or disconnected unless the area is known to be non-hazardous. The same applies for the connection and disconnection of the display type TID10.
- If the head transmitter TMT71/TMT72 was used in a Zone 2 (EPL Gc) or Class I, Division 2 application it is not allowed to use it in Zone 1 (EPL Gb), Zone 0 (EPL Ga) or Class I, Division 1 applications in the future.
- The use of the display type TID10 with the head transmitter TMT71/TMT72 by connecting display to the CDI interface of the head transmitter is only permitted for Zone 2 (EPL Gc) and Class I, Division 2 applications.
- The CDI interface is only allowed to be used for connecting the display type TID10. Irrespective of inside or outside the hazardous area, no other circuits/equipment is allowed to be connected to the CDI Interface.
- The use of the additional field housing (optional) with the head transmitter TMT71/TMT72 is only permitted for Zone 2 (EPL Gc) and Class I, Division 2 applications.
- If the head transmitter TMT71/TMT72, in type of protection increased safe and for use in Zone 2 (EPL Gc) and Class I, Division 2 applications, is mounted in an optional field housing the field housing must be equipped with suitable cable glands, certified according to CSA/UL 60079-0 and CSA/UL 60079-7, providing a degree of ingress protection of not less than IP54.

Applicable for option field housing A1, A2, A3, A4, D1, D2, H1, H2, H3, H4, H5, H6, H7 and H8:

- Final acceptance of this equipment when installed is subject to the jurisdiction of the local inspection authority.
- The end user shall ensure appropriate earthing of the field housing.

Applicable for option field housing AA, AB and AC (head transmitter as component only):

- The end user shall ensure appropriate earthing of the metallic field housing (optional) and all metallic accessories if used (wall or pipe mounting accessories for the field housing and the DIN rail clip for the head transmitter) upon installation.
- These components does not have any surface that achieves a temperature greater than 135°C/100°C/85°C with a 5K safety factor when operated under full load conditions at an ambient of range of 85°C/70°C/55°C respectively.

	Approved Pfanzelt	Date (yyyy-mm-dd) 2019-09-04	Drawing No. 10000010389	Dwg.rev. -	Revision no. -	Revision date (yyyy-mm-dd) -	Name -	Material 71487660 XA01904T/09/EN/02.20	Endress+Hauser
Volume (mm ³)	Designed Pfanzelt	Date (yyyy-mm-dd) 2018-03-28	Unit iTEMP TMT71, TMT72	Scale 1:1	Title CONTROL DRAWING CSA Increased Safety			Series	
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		