

Hazardous (Classified) Location
 Class I / Division 2 / Groups ABCD
 Class II / Division 2 / Groups FG
 Class III
 US: Class I, Zone 2, IIC; Zone 22, IIIB; Zone 22, IIIA

T-code or T-class: Is determined by the maximum measured temperature.

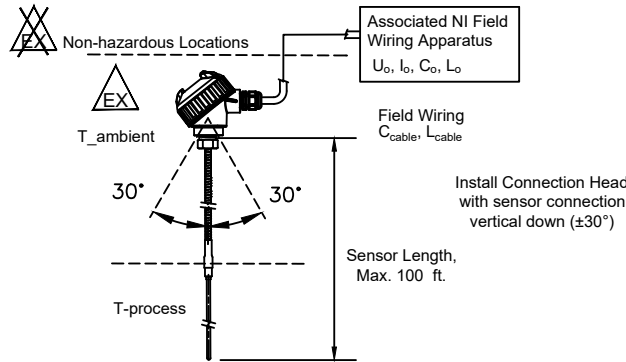
Temperature Class	T ambient – see Note 1	T Service – see Note 1	T Process
T8	- see below: Enclosure / Electronics	-40°C ≤ Ts ≤ 75°C	-40°C ≤ Tp ≤ 75°C
T5		-40°C ≤ Ts ≤ 90°C	-40°C ≤ Tp ≤ 90°C
T4		-40°C ≤ Ts ≤ 125°C	-40°C ≤ Tp ≤ 125°C
T3		-40°C ≤ Ts ≤ 190°C	-40°C ≤ Tp ≤ 190°C
T2		-40°C ≤ Ts ≤ 285°C	-40°C ≤ Tp ≤ 285°C
T1	-40°C ≤ Ts ≤ 435°C	-40°C ≤ Tp ≤ 435°C	

Note 1: T-code for installation is the higher temperature T-code for the process connection and/or assembly service temperature. Ta: applies to the field wiring enclosure portion.

Enclosure, Electronic		Enclosure: Ta, T-code		Field Wiring Connection
Enclosure	Electronics	Ta:	T-code	
31, 34, 91	T440, T441, T442, T71, T72, T82	-40 to +40/60°C	T6/T5	(1) - 3/4 NPT
74	Terminal Block	-40 to +40/60°C	T6/T5/T4	(2) - 3/4 NPT
	T71, T72, T82	-40 to +55/70/85°C		
75	Terminal Block	-40 to +80/95°C	T6/T5	(2) - 1/2 NPT
	T142 w/o Display	-40 to +55/70/85°C		
76	T142 w/ Display	-40 to +55/70/70°C	T6/T5/T4	(1) - 3/4 NPT
93 or 93,AD	T71, T72, T82	-40 to +55/70/85°C	T6/T5/T4	(1) - 3/4 NPT
	Terminal Block	-40 to +80/95°C	T6/T5	
94	T71, T72, T82	-40 to +55/70/85°C	T6/T5/T4	(1) - 3/4 NPT
	Terminal Block	-40 to +80/95°C	T6/T5	

Note: w/ PVC extension insulation - Ta-minimum = -26°C

NI Parameters	Terminal Block Terminations	
As applicable: See "Conditions of Acceptability" and "ASSEMBLIES w/o Transmitters".	Thermocouple Sensor	RTD Sensor (2, 3 & 4 Wire)
Max 31m (100 ft.), 4 pairs		
RTD's Per CSA C22.2 No. 217.7.7.1 c) Ui: N/A.		
Thermocouple Per C22.2 No. 217.7.1 d) Ui, Ii: N/A		
RTD max. normal current 100Ω Platinum: ≤ 1 mA 200Ω Platinum: ≤ 0.7 mA 500Ω Platinum: ≤ 0.5 mA 1000Ω Platinum: ≤ 0.3 mA 100Ω Copper: ≤ 3 mA 120Ω Nickel: ≤ 1 mA		
Ci ≤ 25 nF Li ≤ 0.12 mH		
NOTE: Ci, Li: is distributed (lead-wires)		



Associated NI Field Wiring Apparatus
 U_o, I_o, C_o, L_o

Field Wiring
 C_{able}, L_{able}

Install Connection Head with sensor connection vertical down (±30°)

Sensor Length, Max. 100 ft.

Installation Notes: Config Code XP09 - NI Remote-Mount Temperature Sensor Assemblies

- Conditions of Acceptability:
- Process Temperature Range: -40°C to 435°C (applies to the sensor and metal sheath)
 - The equipment shall be installed in accordance with manufacturer's instructions installation drawings.
 - End-user shall ensure proper earthing of the device upon installation in accordance with the Canadian (CSA C22.1) and the National (NFPA 70) Electrical Codes. Mounting of the device for installation must ensure that the metallic body is reliably connected to the system earth; continuity to be checked and confirmed.
 - The equipment may only be powered by a power supply unit with a limited energy electric circuit, in accordance with CAN/CSA C22.2 No. 61010-1-12 and ANSI/UL 61010-1, or a Class 2 power source as defined in the Canadian Electrical Code C22.1 and/or the National Electrical Code (NFPA 70).
 - Cable entries and blanking elements shall be used that are suitable for the application and correctly installed.
 - All designated enclosure entries shall maintain the degree of enclosure protection (Type and/or IP) only by applying a compatible attachment device (e.g., cable gland) having the same or higher degree of enclosure protection.
 - When the process temperature range exceeds the service temperature range it shall be verified by on-site temperature measurements, taking the worst-case conditions into account, that the service temperature does not exceed the ambient temperature range of the enclosure. Service Temperature at the Field Wiring Enclosure (including transmitter or terminal block) shall not exceed the T ambient marked on the Equipment assembly.
 - User must ensure that each major component of the installed system: sheath materials, sensor assembly leadwire extensions and transmitter assembly are suitable for exposure to the process temperature and resulting service temperature.
 - Installation must conform to the respective certification installation drawing for each component assembly and the user shall ensure the ambient temperature is not exceeded for either component within the installed system after installation.

WARNING –EXPLOSION HAZARD - DO NOT REMOVE OR REPLACE WHILE CIRCUIT IS LIVE UNLESS THE AREA IS FREE OF IGNITIBLE CONCENTRATIONS

AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS RETIRER NI REMPLACER À MOINS QUE L'ALIMENTATION N'AIT ÉTÉ COUPÉE OU QUE L'EMPLACEMENT NE SOIT EXEMPT DE CONCENTRATIONS INFLAMMABLES.

AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS RETIRER NI REMPLACER PENDANT QUE LE CIRCUIT EST SOUS TENSION À MOINS QUE L'EMPLACEMENT NE SOIT EXEMPT DE CONCENTRATIONS INFLAMMABLES

DUST PROTECTED: NI Class II / Division 2 / Groups FG; CLASS III
 - Must be installed using appropriate Dust-Tight wiring and fittings.
NONINCENDIVE: NI Class I / Division 2 / Groups ABCD

- ASSEMBLIES WITH TRANSMITTERS:**
- Associated NI Field Wiring Apparatus (Barrier Device) not required for T440, T441, T442, T71, T72 or T82 if U_o ≤ U_i
 - Associated NI Field Wiring Apparatus (Barrier Device) required for T142, U_o ≤ U_i
 - For transmitter terminations, which are current controlled circuits, the parameter I_i (or I_{max}) is not required and need not be aligned with parameter I_o (or I_{sc}) of the Associated Nonincendive Field Wiring Apparatus or Associated NI Field Wiring Apparatus.
 - 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 equipment or Associated NI Field Wiring Apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when:
 U_o ≤ U_i; I_o ≤ I_i; P_o ≤ P_i; C_o ≥ C_i + C_{able}; L_o ≥ L_i + L_{able}
 - The programming/configuration of transmitters is only permitted in non-hazardous locations.
- ASSEMBLIES W/O TRANSMITTER (supplied with terminal block):**
- Sensor assemblies must be connected using appropriate nonincendive field wiring and Associated NI Field Wiring Apparatus that is suitable for use with RTD's, Thermocouples.
 - RTD or TC temperature sensor must be connected to appropriate equipment designed for connection and measurement of RTD or TC sensors. RTD's see Table - Terminal Block Terminations for normal rated maximum excitation current limits.
 - Field wiring must be evaluated: C_o ≥ C_i + C_{able}; L_o ≥ L_i + L_{able}

NI Parameters	Transmitter Terminations	
Ui = 30 V dc Ci ≤ 144 nF Li = 0 mH	 RTD 3-wire, RTD 2-wire	 T440 Transmitter
Ui = 30 V dc Ci = 0 nF Li = 0 mH	 TC, RTD 2-wire, RTD 3-wire, RTD 4-wire	 T441, T442 Transmitter
Ui = 30 V dc Ci = 0 nF Li = 0 mH	 TC, RTD 2-wire, RTD 3-wire, RTD 4-wire	 T71, T72 Transmitter
Ui = 30 V dc Ci = 0 nF Li = 0 mH	 TC, RTD 2-wire, RTD 3-wire, RTD 4-wire	 T82 Transmitter
Ui = 30 V dc Ii = 300 mA Pi = 1000 mW Ci = 5 nF Li = 0 mH	 TC, RTD 2-wire, RTD 3-wire, RTD 4-wire	 T142 Transmitter (Sensor terminals 1...4) Overvoltage Protection

Capacitance and inductance of field wiring from non-incendive assembly to Associated NI Field Wiring Apparatus shall be measured or calculated and included in the system parameters. As applicable, where cable capacitance and inductance are not known the following values per length of conductor may be used: C_{able} = 200 pF/m, L_{able} = 1uH/m. (Ref: CSA C22.2 No. 60079-25, 60079-14, ISA-RP12.6, ISA-TR12.2).

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