

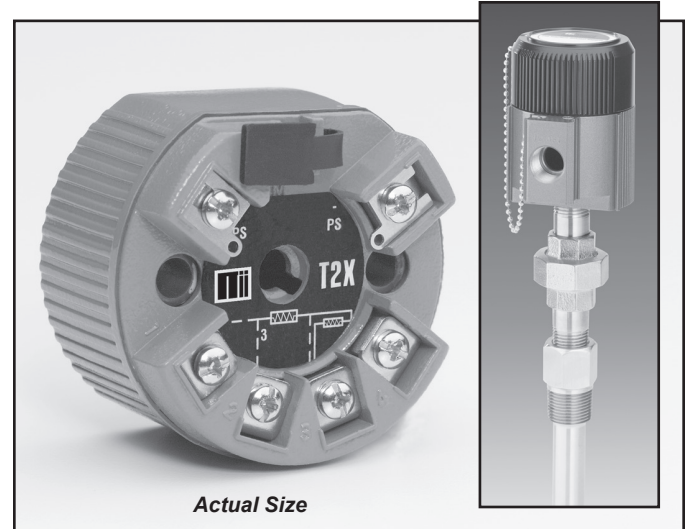
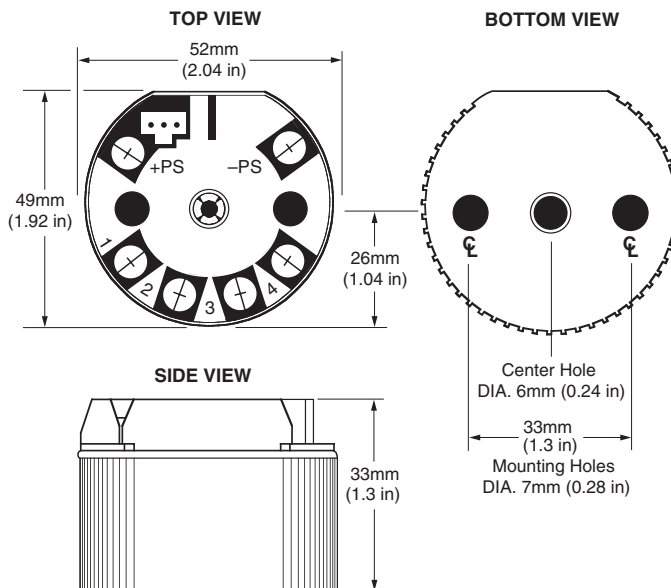
TEMPTATION 2000

T2X RTD Temperature Transmitter

Sets Up in a Minute. Stable for Years.

The very affordable TEMPTATION 2000 RTD Temperature Transmitter (Model T2X) delivers long-term stability in an array of basic temperature sensing applications. PC-programmable in a minute or less, the T2X accepts a wide range of RTD inputs. It provides a linear, non-isolated 4-20mA output ready for direct interface with a monitoring/control system.

Dimensions

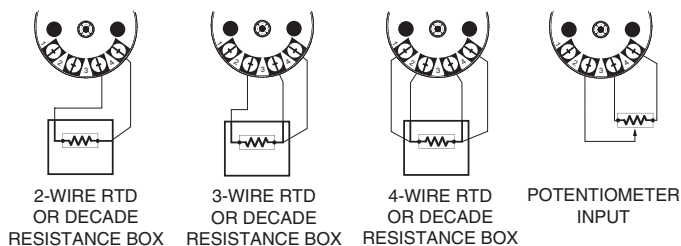


The TEMPTATION 2000 is offered in a standard head-mount housing, in field-ready connection heads, and with a DIN-rail mounting option. Complete sensor and thermowell assemblies are also available.

Features

- Handles 2-, 3- and 4-Wire RTD (Pt100, Pt1000, Ni120, and Cu10) and 0-2200 ohm inputs.
- 4-20mA output is linear with temperature.
- Sets up in a minute or less with single window Intelligent PC Configuration Software.
- High accuracy of up to $\pm 0.21^{\circ}\text{C}$ ($\pm 0.38^{\circ}\text{F}$).
- Long-term stability of up to 5 years.
- 2-Wire (loop-powered).
- *Total Sensor Diagnostics* show which RTD wire has failed, and drives the output upscale or downscale.
- Selectable output damping (0-5 seconds).
- RFI/EMI resistant.
- NEMA 4X, IP66 connection heads for rugged field environments. DIN-rail mounting is also available.
- Full 3-year warranty.

Hookup Diagrams



Certifications


ANZEx


TEMPTATION 2000

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Specifications

Performance	Input Accuracy: Platinum RTD, ±0.2°C (±0.36°F) Nickel RTD, ±0.16°C (±0.29°F) Copper RTD, ±1.2°C (±2.16°F) Ohms, ±0.4Ω Output Accuracy: ±0.05% of span NOTE: Overall accuracy is determined by combining input and output accuracy. It includes the combined effects of linearity, hysteresis, repeatability, and adjustment resolution. It does not include ambient temperature effect. Stability (max. span): 1 year = ±0.12% 3 years = ±0.21% 5 years = ±0.27% Measurement Cycle: Output updates at least 8 times per second Output Response Time: 256msec typical, 300msec maximum, for the output to change from 10% to 90% for an input step change of 0% to 100% Ripple: 10mV peak-to-peak measured across a 250ohm load resistor at frequencies up to 120Hz	Performance (continued) Over-Voltage Protection: Input, 4Vdc peak, max.; Output, 48Vdc, max. Digital Input Filter: User-selectable, 50/60Hz Power Supply and Load Effects: Negligible within specified power limits Load Capability: 670 ohms @ 24V $\Omega = \frac{\text{(Supply Voltage - 8V)}}{0.024\text{A}}$ Burnout Protection: User-programmable, Upscale to 24mA; Downscale to 3.3mA Output Current Limiting: 25mA maximum RTD & Ohms Excitation: 250µA, ±10% RTD Lead Wire Resistance Maximum: RTD resistance + 2 times the lead wire resistance must be less than 2000 ohms; Recommended <35 ohms per wire for three wire inputs; <5 ohms per wire for 10 ohm Cu inputs Damping: 0-5 seconds (user selectable)	Ambient Temperature Operating & Storage Range: -40°C to +85°C (-40°F to +185°F) Relative Humidity: 0-95%, non-condensing Ambient Temperature Effect: ±0.03% of span/°C; Ambient Temperature Reference Conditions for Specifications: 25°C RFI/EMI Immunity: 20V/M@20-1000MHz,when tested according to SAMA standard 33.1. (10V/m@80-1000MHz, 1kHz AM, when tested according to IEC 1000-4-3-1995) Noise Rejection: Common mode: 100dB @ 50/60Hz; Normal Mode: 70dB typical at 200mV peak-to-peak @ 50/60Hz
			Set Up All settings are made using Moore Industries' Intelligent PC Configuration Software, and then stored in non-volatile memory
			Weight HPP: 101 g (3.6 oz) HPP in LH1: 428 g (15.1 oz) HPP in LH2: 428 g (15.1 oz) HPP in CH6: 173 g (6.1 oz)

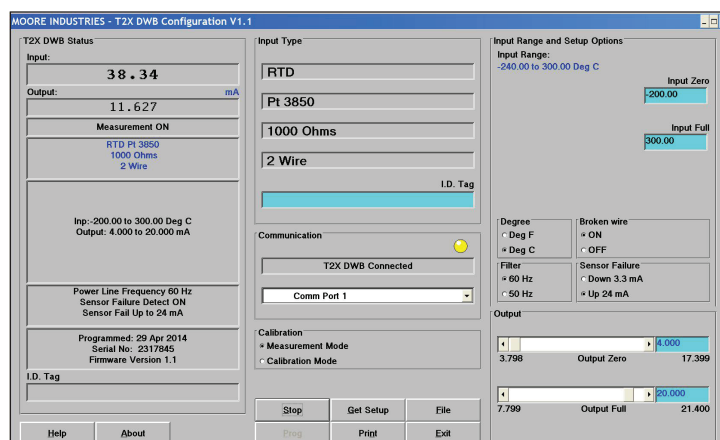
Accessories

Configuration software can be downloaded from our website. To order additional cables:

Part Number	Part
803-039-26	Isolated Serial Configuration Cable (9-pin Serial Port)
803-040-26	Non-Isolated Serial Configuration Cable (9-pin Serial Port)
804-030-26	Fuse Protected, Non-Isolated USB Communication Cable (required by ATEX for products installed in Intrinsically-Safe areas)

Don't See What You Need?

We offer a wide range of temperature assembly choices - this data sheet provides just a few examples. Whatever your temperature assembly needs are, our temperature interface solution experts are ready to help!



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Select one from each category to order: **Temperature Transmitter and Enclosure**

Unit	Input	Output	Power	Options	Housing
T2X TEMPTATION 2000, Non- Isolated PC- Programmable 2-Wire RTD Transmitter	PRG User selectable with PC Configuration Software	4-20MA User scaleable with PC Configuration Software	8-42DC For Gener- al Purpose and Div. 2 Non-Incen- dive 8-30DC For Intrin- sic Safety. Requires -ISC, -ISE or -ISF	-ISC (Intrinsically- Safe, CSA) -ISE (Intrinsically- Safe, ATEX/ LCIE) -ISF (Intrinsically- Safe, FM Approvals)	HPP Hockey-puck housing for mounting in standard connection heads LH1NS‡ Connection head (FM approved, NEMA 4X, IP66) with two entry ports: ½-inch NPT cable and process—black PBT polyester cover LH1MS‡ Connection head (FM approved, NEMA 4X, IP66) with two entry ports: M20 cable and ½-inch NPT process—black PBT polyester cover NEMA 4X, IP66 connection head with one M20 entry port and one G½ (BSP) entry port (aluminum body with VALOX 357U cover) LH1CS‡ Connection head with two entry ports: M20 cable and G½ (BSP) process—black PBT polyester cover LH2NS* Explosion-proof connection head with two entry ports: ½-inch NPT cable and process—black metal cover LH2MS* Explosion-proof connection head with two entry ports: M20 cable and ½-inch NPT process—black metal cover NOTE: *A suffix with LH2 indicates ANZEx/TestSafe (Ex d) Flameproof approval; 2" pipe-mount kit included (i.e., LH2MSA) *E suffix with LH2 denotes ATEX Flameproof enclosure; 2" pipe-mount kit included (i.e., LH2MSE) *‡P suffix indicates enclosure is equipped with 2" pipe-mount hardware kit (i.e., LH1NSP)

Model Number Example: T2X / PRG / 4-20MA / 8-42DC [HPP]

Certifications

	T2X-HPP FM Global Group (FM Approvals): Intrinsically-Safe Class I, Division 1, Groups A, B, C & D Class I, Zone 0, AEx ia IIC T6 Ta = +60°C Ga Non-Incendive Class I, Division 2, Groups A, B, C & D Temperature Class T6 @ 60°C Ambient
	CSA Group (Canadian Standards Association): General/Ordinary Location Intrinsically-Safe Class I, Division 1, Groups A, B, C & D Non-Incendive Class I, Division 2, Groups A, B, C & D Temperature Code T6 @ 60°C Ambient
	ATEX Directive 2014/34/EU (LCIE): Intrinsically-Safe II 2G EEx ib IIB T6 Ta = +60°C
	CE Conformant: EMC Directive 2014/30/EU – EN 61326

	T2X in LH2 Housing FM Global Group (FM Approvals): Explosion-Proof & Dust-Ignition Proof Class I, Division 1, Groups A, B, C & D Class II & III, Division 1, Groups E, F & G Environmental Protection: NEMA 4X & IP66 Ambient Temperature Range: -20°C to +60°C
	CSA Group (Canadian Standards Association): Explosion-Proof Class I, Division 1, Groups A*, B, C & D Class II, Groups E, F & G Class III, IP66 Ambient Temperature Range: -20°C to +60°C; T6 <i>*For Group A applications, seal all conduits within 18"</i>
	ATEX Directive 2014/34/EU (ISseP):  Explosion/Flameproof  II 2 G Ex d IIC T6 (Tamb 60°C) II 2 D Ex tD A21 IP66 T85°C
ANZEx	ANZEx (TestSafe): Explosion/Flameproof Ex d IIC T6 (Tamb 60°C) IP66

Input Types and Ranges

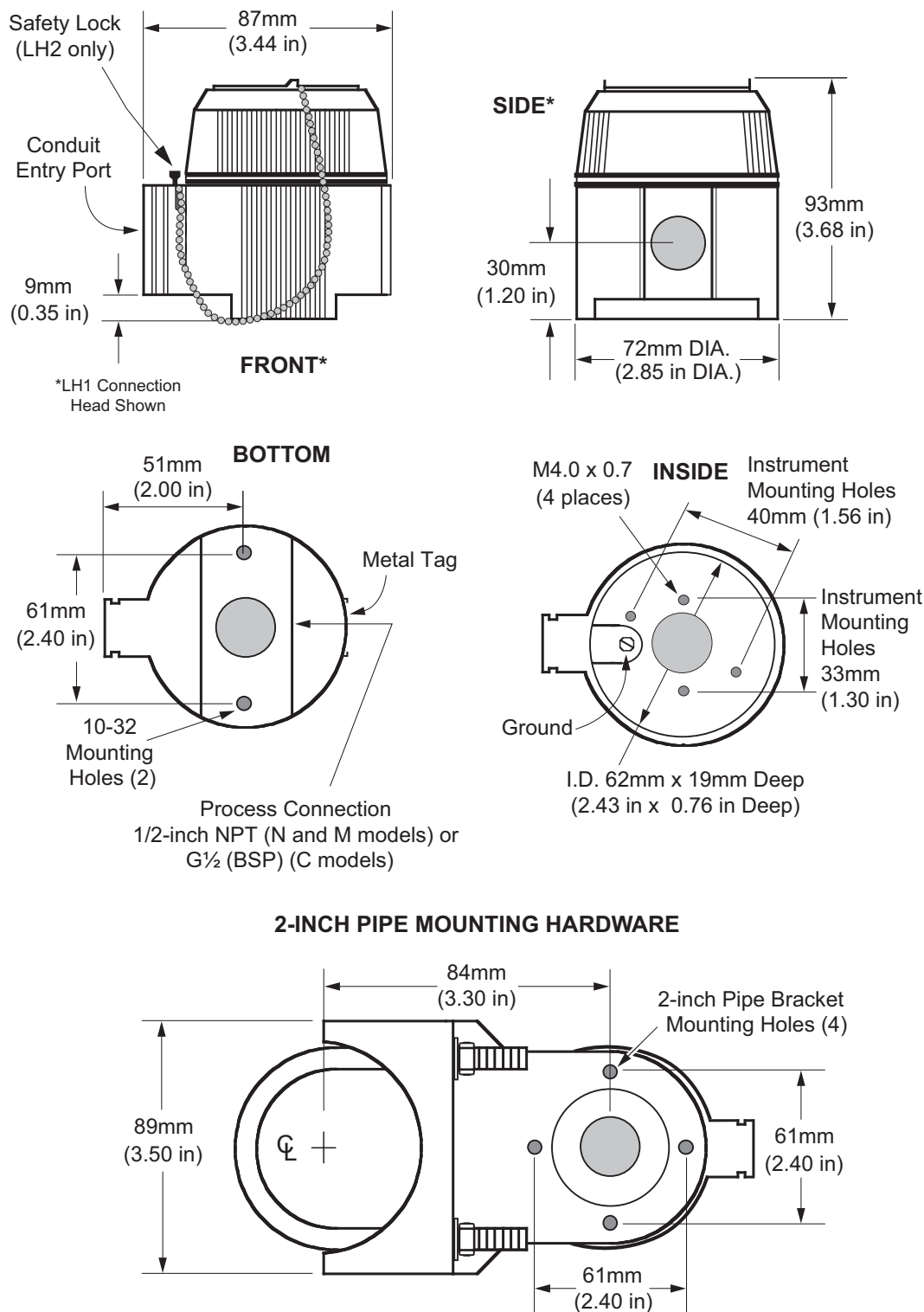
Input	Type	Ω	Ω	Conformance Range	Maximum Range*	Minimum Span
RTD 2-Wire 3-Wire 4-Wire	Platinum	0.003850	100, 200, 300, 400, 500	-200 to 850°C (-328 to 1562°F)	-240 to 960°C (-400 to 1760°F)	10°C (18°F)
			1000	-200 to 300°C (-328 to 572°F)	-240 to 300°C (-400 to 572°F)	
		0.003902	100, 200, 400, 500	-100 to 650°C (-148 to 1202°F)	-150 to 720°C (-238 to 1328°F)	
			1000	-100 to 300°C (-148 to 572°F)	-150 to 300°C (-238 to 572°F)	
	Nickel	0.003916	100	-200 to 510°C (-328 to 950°F)	-240 to 580°C (-400 to 1076°F)	10°C (18°F)
			120	-80 to 320°C (-112 to 608°F)	-100 to 360°C (-148 to 680°F)	
	Copper	0.00427	9.035	-50 to 250°C (-58 to 482°F)	-203.19 to 300.53°C (-333.74 to 572.95°F)	100°C (180°F)
Ω	Resistance Potentiometer	N/A	0-2200Ω	0-2200Ω	0-2200Ω	30Ω

* Transmitter will measure ranges outside of the Conformance Range with some degradation to accuracy ratings. Consult the factory for details.

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Figure 1. The T2X Offers Rugged, Fully Certified, Ready-to-Install Housing Styles.



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