TouchTemp II™

TEMPERATURE TRANSMITTER

This programmable transmitter can be configured in seconds.

TouchTemp II™ Model 2800 is designed to fill a major need in the market for an economical, programmable transmitter. It combines digital accuracy and unparalleled versatility with standard 4 to 20 mA output and the most sensible programming design on the market today. All for about the price of a standard analog transmitter.

Since there's no need to pay for unnecessary digital output or an expensive communicator, companies can save hundreds, even thousands of dollars by specifying TouchTemp.

TWO-BUTTON PROGRAMMING

Programming is built right into TouchTemp. So there's no need to disassemble the unit to change jumpers or dipswitches...or to purchase an expensive communicator.

With TouchTemp, every function and parameter, including Input Type, Temperature Range, Linearization, Burnout Selection, and Selection of Engineering Units can be changed simply by pressing the two buttons on the front and following the menu-driven prompts.

TouchTemp can also be programmed to "Lock-in" your settings, preventing unintended configuration or calibration changes.

INTEGRAL, FULL FIVE-DIGIT DISPLAY

The built-in digital display indicates process inputs as well as the following engineering units: °F, °C, mV, and Ω. TouchTemp provides more resolution than other transmitters, because it displays a standard five full digits, not the four-and-a-half available as an option on other transmitters.

COMPLETE DIAGNOSTICS

Microprocessor-controlled diagnostics provide warning prompts on the digital display for a variety of parameters, including reference voltage, cold junction and EEPROM errors; under range, over range, and open input conditions; and CPU checks.

DIGITAL ACCURACY. FIELD TOUGH.

TouchTemp provides outstanding digital accuracy (±0.035% of span) and 18-bit A/D resolution. Accuracy is maintained over the wide ambient temperature range of -40 to +85°C (-40 to + 185°F) via an auto zero circuit and an auto span circuit which is temperature compensated over the full ambient range. These circuits automatically calibrate the unit four times per minute to ensure drift-free operation and long-term stability.

As with all Transmation transmitters, the 2800T also carries a five year warranty.

FEATURES

- *Universal Temperature Transmitter*
  8 thermocouples, 12 RTDs, plus millivolts and ohms.
- *Isolated, Field Hardened and RFI Protected*
- *Two-Button Programming*
  No jumpers, dipswitches or communicators required.
- *Integral, Full Five-digit Display*
  Displays process inputs and engineering units with 0.1° resolution, plus warning and programming prompts.
- *Complete Diagnostics*
  Checks for reference voltage, cold junction, EEPROM and CPU errors. Also indicates under range, over range and open input conditions.
- *0.035% Digital Accuracy. Field Tough.*
  Standard features include isolation, RFI protection and outstanding accuracy over the widest ambient range (-40 to +85°C).
- *FM Approved for Class I Division II and Explosion Proof*

ORDERING INFORMATION: 2800	
2800T	2800-NI FM Approved Noninendive Universal Temperature Transmitter, Digital Display, with Surface Mounting Plate. *Approval: Nonincendive 1/2/ABCD*
2800-EXP	FM Approved Explosion Proof Universal Temperature Transmitter Assembly. Includes: 2800NI, Mounting Adapter, and Conduit Housing. *Approvals: Explosion Proof/1/1/BCD; Dust-Ignition Proof/II, III/1/EFG and Nema 4X*
100665-651	*32 mm DIN Rail Mounting Adapter for 2800T*
100665-652	*35 mm DIN Rail Mounting Adapter for 2800T*
500108-299	*Snap Track Mounting Adapter for 2800T*
759257-254	*2" Pipe Stand Mounting Kit*

The Source TRANSCAT® CALIBRATION, TEST, MEASUREMENT & CONTROL SOLUTIONS
Master distributor of Transmation products.

Transmation®
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MODEL 2800 Specifications

Unless otherwise indicated, all specifications are referenced to an ambient temperature of 25˚C ±1˚C (77˚F±2˚F).

Input types and Ranges:

Sensor Type	*Range Limits*		*Digital (1)*		*D/A (2)*
	°C	*°F*	*Accuracy*		*Accuracy*
Thermocouples NIST Monograph 175 based on the ITS-90			*°C*	*°F*	
B	+250 to 1820°C	+482 to 3308°F	±0.8	±1.44	±0.035% of span
E	-200 to 1000°C	-328 to 1832°F	±0.2	±0.36	±0.035% of span
J	-180 to 1200°C	-292 to 2192°F	±0.3	±0.54	±0.035% of span
K	-180 to 1372°C	-292 to 2501°F	±0.5	±0.90	±0.035% of span
N	0 to 1200°C	32 to 2192°F	±0.4	±0.72	±0.035% of span
R	-50 to 1768°C	-58 to 3214°F	±0.6	±1.08	±0.035% of span
S	-50 to 1768°C	-58 to 3214°F	±0.6	±1.08	±0.035% of span
T	-200 to 400°C	-328 to 752°F	±0.2	±0.36	±0.035% of span
RTD's 3 wire connection					
Platinum DIN 43760 (10/80)/IEC 751 curve					
50 Ω	-200 to 850°C	-328 to 1562°F	±0.2	±0.36	±0.035% of span
100 Ω	-200 to 850°C	-328 to 1562°F	±0.2	±0.36	±0.035% of span
200 Ω	-200 to 850°C	-328 to 1562°F	±0.2	±0.36	±0.035% of span
500 Ω	-200 to 260°C	-328 to 500°F	±0.2	±0.36	±0.035% of span
Platinum JIS C 1604 curve					
100 Ω	-200 to 650°C	-328 to 1202°F	±0.2	±0.36	±0.035% of span
Platinum Burns 0.003902 curve					
100 Ω	-200 to 650°C	-328 to 1202°F	±0.2	±0.36	±0.035% of span
200 Ω	-200 to 650°C	-328 to 1202°F	±0.2	±0.36	±0.035% of span
500 Ω	-200 to 260°C	-328 to 500°F	±0.2	±0.36	±0.035% of span
Nickel—Bristol's 7NA curve					
110 Ω	-105 to 310°C	-157 to 590°F	±0.2	±0.36	±0.035% of span
Nickel—Minco curve					
120 Ω	-80 to 320°C	-112 to 608°F	±0.2	±0.36	±0.035% of span
Copper—Minco curve					
10 Ω	-200 to 260°C	-328 to 500°F	±0.3	±0.54	±0.035% of span
Copper—China .00428 curve					
50 Ω	-50 to 150°C	-58 to 302°F	±0.3	±0.54	±0.035% of span
mV	-100 to +100 mV		±0.015 mV		±0.035% of span
Resistance	0 to 1000 Ω		± wire connection		
2,3 Wire Ω	0 to 1000 Ω		±0.35 Ω		±0.035% of span

Notes: 1. Total digital accuracy for thermocouple only: sum of digital accuracy ±0.3°C (Cold junction accuracy).
2. Total analog accuracy is the sum of the Digital Accuracy and the D/A Accuracy.

Input Span Limits:	Any span within range limits
Input Resolution:	Temperature: 0.1 Degree mV: 1µV Ohms: 0.01 Ω
Maximum Output Range:	3.3 to 30 mA
Calibrated Output Range:	4 to 20 mA
Output Resolution:	0.002 mA
mV Accuracy:	±15µV ±0.035 % of Span ±Output Resolution
Cold Junction Compensation (CJC) Accuracy:	±.3 °C
T/C Accuracy:	±15µV ±Conformance ±CJC ±0.035 % of Span ±Output Resolution
Ohms Accuracy:	±.2 Ohm ±0.035 % of Span ±Output Resolution
RTD Accuracy:	±.2 Ohm ±Conformance ±0.035 % of Span ±Output Resolution
RTD's Excitation Current:	200µA typical
Update Rate:	Once per second minimum
Input Impedance:	T/C or mV: >10 Meg. Ohms
Common Mode Rejection:	>120 dB 50/60 Hz
Normal Mode Rejection:	>60 dB 50/60 Hz
Input to Output Isolation:	500 VAC
Operating Temperature Range:	-40 to 85˚C (-40 to 185˚F)
Storage Temperature Range:	-50 to 100˚C (-58 to 212˚F)
Temperature Effect:	Millivolts: ±0.2µV/˚C ±0.005% of Input Reading/˚C Thermocouple: ±0.2µV/˚C ±0.005% of Input Reading/˚C ±CJC Ohms/RTD: ±0.002Ω/˚C ±0.005% of Input Reading/˚C Cold Junction Compensation: 0.005˚C/˚C
Loop Supply Voltage:	13V + (Load Resistance x 20 mA), minimum; 48V, maximum
Power Supply Effects:	0.005% of span/volt
Non-Destructive Input:	30 volts peak
RFI Effects:	< 1%, with no abnormal behavior at 10V/m @ 450 MHz
Humidity Range:	5 to 95% RH; <0.1% effect @ 40 Deg. C
Package Size:	3.2 x 1.75 x 3.8" (81 x 45 x 97 mm) HWD; 6.1 ounces (173 gm)

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