

PID Controllers Temperature Controls T2000

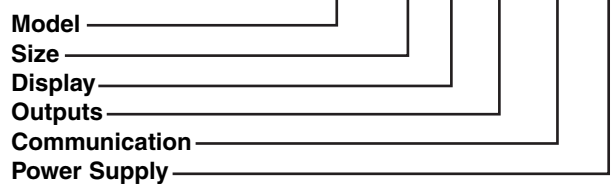


- 1/16 DIN and 1/32 DIN
- NEMA 4X protection
- Autotune automatically sets PID parameters
- Single ramp/soak program
- Heat-cool operation
- AC or DC power supply
- Inputs: Thermocouple, RTD, 0-50mV
- Two outputs: SSR voltage pulse/relay
- Five alarm modes
- RS232 or RS485 (retrofitable)
- MODBUS RTU protocol
- Three year warranty

Product Description

Microprocessor based controller for temperature measurements in °C or °F. Easy to view single or dual 4 digit display readout. Constructed in a rugged NEMA4X waterproof housing in the popular 1/32 or 1/16 DIN size. 100-240VAC or 12-24VDC supply voltage. Universal inputs and various combinations of output types are also standard features.

Ordering Key **T20 16 1 SR 2 A**



Type Selection

| Model | Size | Display | Outputs | Communication | Power Supply |
|-------|------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------|
| T20 | 16: 1/16 DIN 32: 1/32 DIN | 1: Single Display 2: Dual Display (1/16 DIN only) | SR: 5VDC Pulse and 1A Relay Outputs RR: 2A and 1A Relay Output SS: Two 5VDC Pulse Outputs | X: None 2: RS232 4: RS485 | A: 100-240VAC B: 12-24VAC/DC (Only single display units with SR and SS outputs) |

General Specifications

| | |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply | 100-240VAC +/- 10%, 50-60Hz 12-24VAC/DC +/- 20%, 50-60Hz |
| Display | Upper display reading: 4 digit high brightness green LED 10mm high Lower display (T20162): 4 digit high brightness red LED 9mm high Output indicators: LED output indicators – flashing SP1 square green LED output indicators – SP2 round red |
| Keypad | 3 full travel elastomeric pushbuttons |
| Approvals | UL, CE |

Input Specifications

| Thermocouple | |
|--------------|-------------------------------|
| B | 32 to 3275°F (0 to 1800°C) |
| E | 32 to 1112°F (0 to 600°C) |
| J | 32 to 1472°F (0 to 800°C) |
| K | -58 to 2192°F (-50 to 1200°C) |
| L | 32 to 1472°F (0 to 800°C) |
| N | -58 to 2192°F (-50 to 1200°C) |
| R | 32 to 2912°F (0 to 1600°C) |

Input Specifications (cont'd)

| | |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thermocouple (cont'd) | S: 32 to 2912°F (0 to 1600°C) T: -273 to 482°F (-200 to 250°C) Standards: IPTS/68/DIN 43710 CJC rejection: 20:1 (0.05%°C) typical External resistance: 100W maximum |
| (RTD) | Pt100/RTD-2 (2 wire): -273 to 752°F (-200 to 400°C) Standards: DIN 43760 (100W 0°C/138.5W 100°C Pt) Bulb current: 0.2 mA maximum |
| Linear process input | mV: 0 to 50 mV (0 to 20 mV, 4 to 20 mV) |
| Specifications for Both Thermocouples and RTDs | Calibration accuracy: +/- 0.25% maximum +/- 1°C Sampling frequency: Input 10Hz, CJC 2 sec. Common mode rejection: Negligible effect up to 140db, 240V, 50-60Hz Series mode rejection: 60db, 50-60Hz Temperature coefficient: 150ppm/(C maximum) Reference conditions: 22C +/- 2°C, rated voltage after 15 minutes settling time |

Output Devices (maximum of two outputs)

| | |
|--------------------------------|---------------------------------------|
| SSd (solid state relay driver) | 5 VDC +/- 15%, 15ma, non-isolated |
| Relay | Form A SPST, 2A/250VAC resistive load |
| Second Relay | Form A SPST, 1A/250VAC resistive load |

Housing Specifications

| | |
|---------------|-------------------------------------------|
| Environmental | |
| Safety | UL873, EN61010, CSA 22.2 No. 1010.1-92 |
| Humidity | Maximum 80% |
| Altitude | Up to 2000m |
| Installations | Categories II and III |
| Pollution | Degree II |
| Protection | NEMA 4X (IP66) |
| EMC emission | EN50081-1, FCC Rules 15 subpart J Class A |
| EMC immunity | EN50082-2 |
| Ambient | 32 to 122°F (0 to 50°C) |
| Moldings | Flame retardant polycarbonate |

Housing Specifications (cont'd)

| | |
|---------------------------|-------------------------------------------|
| Instrument body | |
| Model T2016 | 1.76 x 1.76" (44.8 x 44.8mm) |
| Model T2032 | 1.76 x 0.87" (44.8 x 22.0mm) |
| Overall length | 4.57" (116mm) |
| Weight | |
| T20161 | 4.2 ounces |
| T20162 | 4.6 ounces |
| T2032 | 3.9 ounces |
| Dimensions (front fascia) | |
| Model T2016 | 2.0 x 2.0" (51 x 51mm) includes gasket |
| Model T2032 | 2.0 x 1.12" (51 x 28.5mm) includes gasket |
| Sleeve length | 4.2" (106.7mm) includes gasket |

Dimensions



Wiring Diagram

