

NEW

**1400+™**

*Affordable, Well-Featured,  
Easy to Use and Adaptable*

### 1/4 DIN Temperature Controller

#### DESCRIPTION

The Partlow 1400+ is a new generation of '+' Series controller that takes flexibility and ease of use to new levels. The expanded '+' Series platform of 1/4, 1/8 and 1/16 DIN model controllers incorporates numerous product specification, communication, display interface and configuration software improvements that surpass competitive offerings in ease of use, delivery and value-per-dollar.

By adding more versatile features and user-friendly functionalities – like remote setpoint inputs, digital inputs, plug-in output modules, a customizable operator/HMI menu, jumperless and auto-hardware configuration, and 24VDC transmitter power supply – the new generation 1400+ Series controller transforms the complicated into the simple while saving you time (as much as 50% on product set-up), reducing inventory stock and virtually eliminating the likelihood of operator errors.

Making things complicated is easy – the clever trick with the new generation 1400+ Series controller from Partlow is to make it simple.

#### APPLICATIONS:

Ideal for temperature control applications requiring a value-priced, user-friendly, versatile and well featured general-purpose controller.

#### INDUSTRIES:

- Industrial and lab ovens/furnaces, plastics and thermal forming
- Form/Fill and seal
- Packaging applications
- And any others where low costs, smaller size and unmatched connectivity are critical requirements.

#### FEATURES/BENEFITS

- Dual setpoints with optional remote selection
- Plug-in output modules allow installing just the functions needed
- Expanded user-selectable operator modes
- User-selectable plug-and-play output cards
- Process and loop alarms
- Adjustable hysteresis
- Optional 10V SSR driver
- Improved Windows® PC configuration software
- Improved easy-to-use HMI
- Jumperless input configuration
- Auto-hardware recognition
- Faster communication speeds
- More security options
- Backward compatible panel cutout, housing and terminal wiring capability

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## 1/4 DIN Temperature Controller

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## SPECIFICATIONS\*

## STANDARD FEATURES

Dual setpoints with optional remote selection  
 Plug-in output modules installing just the functions needed  
**NEW** Improved HMI; four button operation, dual 4-digit LED displays  
 4 per second input sample rate  
 Universal input  
 Full PID or ON/OFF control  
 Heat/Cool operation (with dual outputs ordered)  
 Selectable pre-tune, self-tune, manual tune  
 Ramping setpoint  
 Process and Loop alarms  
**NEW** Jumperless input configuration  
**NEW** Auto-detection of installed output modules.  
**NEW** Improved PC configuration software (comms option not required)  
**Construction/Enclosure:** Rugged ABS plastic housing

## ENVIRONMENTAL CHARACTERISTICS

**Operating Temp.:** 32° to 131°F (0° to 55°C)  
**Storage Temp.:** -4° to 176°F (-20° to 80°C)  
**Humidity:** 20% to 95% non-condensing RH

## ELECTRICAL

**Supply Voltage:** 100–240V 50/60Hz; optional 24VDC (20–48VAC / 22–65 VDC)  
**Power Consumption:** 5W / 7.5VA max

## DISPLAY

**Type:** Dual 4 digit displays, Red or Green, 7 segment LED  
**Height:** 13mm (0.53") upper display, 10mm (0.39") lower display  
**Annunciators:** LED indicators for output and status

## INPUTS

**Standard Universal input (T/C, RTD and DC Linear):**  
 T/Cs: J, K, C, R, S, T, B, L, N and Pt 20% Rh vs. Pt 40% Rh  
 RTD: 3-wire; PT100; 50Ω per lead maximum (balanced)  
**DC Linear (scalable -1999 to +9999):**  
**Volts:** 0–5, 1–5, 0–10 or 2–10VDC  
**DC milliamps:** 0–20mA or 4–20mA  
**DC millivolts:** 0–50, 10–50mV

## OUTPUTS

All output types are user-selectable and customizable based on desired application; choose from the following output types:  
**Max. # of Outputs:** Three for control, alarm, 24VDC transmitter power supply or retransmit of process value or setpoint  
**Relay:** Optional SPDT; 240VAC 2.0A resistive. Lifetime: >500,000 operations at rated voltage/current  
**SSR Driver:** Optional drive capability: >10VDC nominal into 500Ω minimum  
**DC Linear:** Optional 0–20mA, 4–20mA into 500Ω max.; 0–10V, 1–5V, 2–10V, 0–5V into 500Ω minimum; control outputs have 2% over/under drive applied; accuracy ±0.25% (mA into 250Ω load, V into 2kΩ load); degrading linearly to ±0.5% for increasing burden to specified limits  
**Triac:** Optional 0.01 to 1A AC, 20 to 280Vrms, 47–63Hz (limit 2)  
**Transmitter Power Supply:** Optional 24VDC (limit 1)

## OUTPUT FUNCTIONS

All output functions are user-selectable and customizable based on the application:  
**Heat Power**  
**Cool Power**  
**Process Alarm** (reverse or direct)  
**Modes (Alarms 1 and 2):** High/low, SP deviation, band, logical OR/AND  
**Loop Alarm** (reverse or direct)  
**Retransmit** (setpoint or process value)

## ELECTRICAL PERFORMANCE

**GENERAL:**  
**Accuracy:** ±0.1% of input range ±1 LSD (T/C CJC better than 1°C)  
**Input Sample Rate:** 4 per second; 14 bit resolution  
**Impedance:** >10MΩ for thermocouple and mV ranges, 47kΩ for V ranges and 5Ω for mA ranges  
**Sensor Break Detection:** <2 seconds (except zero based DC ranges), control O/Ps turn off, high alarms activate for T/C and mV ranges, low alarms activate for RTD, mA or V ranges

## COMMUNICATIONS INTERFACE

**User-selectable:** 2-wire, RS-485 serial communications option with choice of Modbus® or ASCII protocol; 1200 to 19,200 baud  
**PC Configuration:** Off-line configuration from serial port to dedicated configuration socket (comms option not required)

## RATINGS/AGENCY APPROVALS

**Safety:** CE, UR, cUR, UL file# E67237  
**EMC:** Certified EN61326  
**Other:** ISO 9002 registered

## PROTECTION

IEC IP66; NEMA 4X (front panel)  
 IEC IP20 (behind the panel protection)

## PHYSICAL DIMENSIONS

**Panel Cutout:** 3.62" (92mm) × 3.62" (92mm)  
**Width:** 3.78" (96mm)  
**Depth:** 3.93" (100mm)  
**Height:** 3.78" (96mm)  
**Weight:** 0.46 lbs (0.21kg)  
**Mounting:** Plug-in with panel mounting fixing strap

## OPTIONS/ACCESSORIES

**NEW** 24VDC transmitter power supply option  
**NEW** Faster RS-485 serial communication speeds and user-selectable (Modbus® or ASCII) option  
**Digital Input 1 (Optional):** Selects between two setpoints or auto/manual tune control; volt free or TTL input  
**Basic Remote Setpoint Input (Optional):** 0–20mA, 4–20mA, 0–10V, 2–10V, 0–5V; scalable -1999 to 9999; potentiometer (2kΩ setpoint selected from front panel)  
**Full Remote Setpoint Input (Optional):** 0–20mA, 4–20mA, 0–5V, 1–5V, 0–10V, 2–10V, 0–100mV; scaleable -1999 to 9999; potentiometer (2kΩ minimum); local or remote setpoint selected from front panel; digital input can be configured to switch between setpoints (either setpoint 1 and 2 or between local setpoint and remote setpoint) or between auto and manual control modes. Not available on Model 1160+  
**Optional Choice of LED colors:** (red/red, red/green, green/red, green/green); plus five indicators

## WARRANTY

3 years

\* Specifications are for base models with standard features only unless otherwise noted. Specifications subject to change without notice in accordance with our DBS policy of continuous improvement. All product and brand names are trademarks of their respective owners. All rights reserved.

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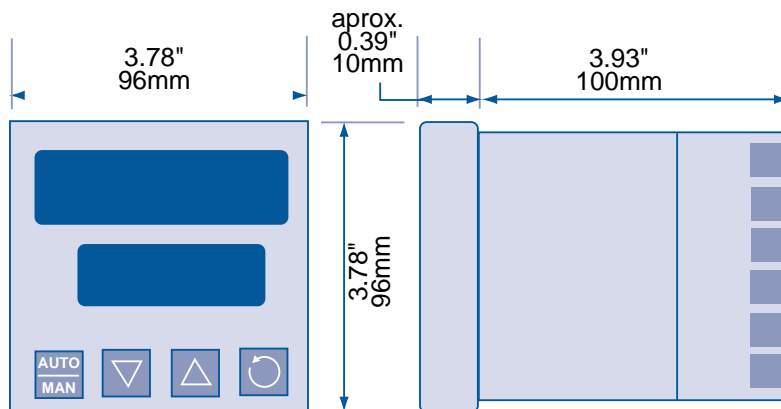
**Controllers**

**MODELS**

Code 1: Model #	Code 2: Option Slot 1	Code 3: Option Slot 2	Code 4: Option Slot 3	Code 5: Option Slot A	Code 6: Power Supply
<b>P1400</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
1/4 DIN Temperature Controller	<b>0</b> Not fitted <b>1</b> Relay Output <b>2</b> DC Drive SSR Output <b>3</b> Linear DC Output <b>8</b> Triac Output*	<b>0</b> Not fitted <b>1</b> Relay Output <b>2</b> DC Drive SSR Output <b>3</b> Linear DC Output <b>4</b> Transmitter Power Supply † <b>8</b> Triac Output*	<b>0</b> Not fitted <b>1</b> Relay Output <b>2</b> DC Drive SSR Output <b>3</b> Linear DC Output <b>4</b> Transmitter Power Supply † <b>8</b> Triac Output*	<b>0</b> Not fitted <b>1</b> RS-485 Serial Comms <b>2</b> Green Upper Display <b>3</b> RS-485 Serial Comms & Green Upper Display <b>4</b> Green Lower Display <b>5</b> RS-485 Serial Comms & Green Lower Display <b>6</b> Green Upper/Lower Display <b>7</b> RS-485 Serial Comms & Green Upper/Lower Display <b>8</b> Digital Input <b>9</b> Digital Input & Green Upper Display <b>A</b> Digital Input & Green Lower Display <b>B</b> Digital Input & Green Upper/Lower Display <b>C</b> Basic Remote Setpoint Input <b>D</b> Basic RSP & Green Upper Display <b>E</b> Basic RSP & Green Lower Display <b>F</b> Basic RSP & Green Upper/Lower Display	<b>00</b> 100-240V AC <b>02</b> 24-48 AC or DC <b>RR</b> Remote Setpoint Input (full with Secondary Digital Input)** <b>R2</b> 24-48VAC/DC & Remote Setpoint (full)**

\*Two triac outputs maximum † Only one Transmitter Power Supply may be installed per unit

**DIMENSIONS - 1/4 DIN**



Panel Cutout: 92.0mm x 92mm (3.62" x 3.62")

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Partlow Brand 1400+ Data Sheet (3/06)

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**More Reliable.** Our experience with more than 25,000 customers has taught us to design controllers that are reliable and durable, with quality standards that meet six sigma requirements.

For additional information or a full-line catalog, contact DICG Customer Service or visit our web site.

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