PARTLOW™ brand

Data Sheet

Controllers

NEW



1800+™

Affordable, Well-Featured, Easy to Use and Adaptable

1/8 DIN Temperature Controller

DESCRIPTION

The Partlow 1800+ 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 1800+ 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 1800+ 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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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: 10mm (0.39") upper display, 8mm (0.31") 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: 1.77″ (45mm) × 3.62″ (92mm)
Width: 1.89″ (48mm)
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; local or remote 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

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1/8 DIN Temperature Controller

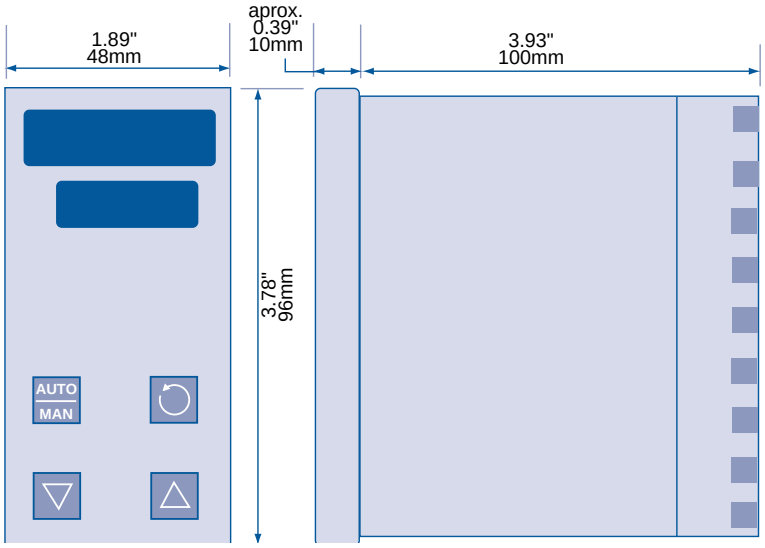
Affordable, Well-Featured, Easy to Use and Adaptable

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
P1800	☐	☐	☐	☐	☐ ☐
I/8 DIN Temperature Controller	**0** Not fitted **1** Relay Output **2** DC Drive SSR Output **3** Linear DC Output **8** Triac Output*	**0** Not fitted **1** Relay Output **2** DC Drive SSR Output **3** Linear DC Output **4** Transmitter Power Supply † **8** Triac Output*	**0** Not fitted **1** Relay Output **2** DC Drive SSR Output **3** Linear DC Output **4** Transmitter Power Supply † **8** Triac Output*	**0** Not fitted **1** RS-485 Serial Comms **2** Green Upper Display **3** RS-485 Serial Comms & Green Upper Display **4** Green Lower Display **5** RS-485 Serial Comms & Green Lower Display **6** Green Upper/Lower Display **7** RS-485 Serial Comms & Green Upper/Lower Display **8** Digital Input **9** Digital Input & Green Upper Display **A** Digital Input & Green Lower Display **B** Digital Input & Green Upper/Lower Display **C** Basic Remote Setpoint Input **D** Basic RSP & Green Upper Display **E** Basic RSP & Green Lower Display **F** Basic RSP & Green Upper/Lower Display	**00** 100-240V AC **02** 24-48 AC or DC **RR** Remote Setpoint Input (full with Secondary Digital Input)** **R2** 24-48VAC/DC & Remote Setpoint (full)**

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

DIMENSIONS - 1/8 DIN



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Satellite Locations:
North America: North Carolina, South Carolina, Connecticut, Massachusetts, New York, Canada, British Virgin Islands • **Europe:** United Kingdom, Italy, France, Germany, Spain, Slovakia • **Latin America:** Brazil • **Asia:** China, Japan, Korea, Singapore

Process Automation Worldwide Brands:

PMA™

Partlow™

West™

LFE™

Rustrak™



A division of Danaher, a Fortune 500 company with offices in 30 countries around the world.

More Available. With factories around the world, global sales and applications support, and an expansive network of distributors, we stay close to our customers - shortening lead times and fostering responsiveness. Three-day lead time is standard, with same-day shipments available on many of our products.

More Selection. We have a broad selection of controllers to meet application requirements in a variety of industries. User-configurable, accurate and flexible, with low, mid, or high level performance ranges, our controller products meet your system and budgetary requirements.

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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DANAHER INDUSTRIAL CONTROLS