

NEW



## 1401+™

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

### 1/4 DIN Limit Controller

#### DESCRIPTION

The Partlow 1401+ is part of a range of new generation '+' Series limit devices that share the same distinctive styling as the '+' Series temperature controllers.

The expanded '+' Series limit controller platform includes 1/4, 1/8 and 1/16 DIN models that incorporate numerous product specification, communication, display interface and software improvements that surpass competitive limit device offerings in ease of use, delivery and value-per dollar characteristic of the growing '+' Series product family.

By adding more versatile features and user-friendly functionality like digital inputs, an easy-to-use HMI, jumperless and auto-hardware configuration, 24VDC transmitter power supply and MODBUS communication across the range - the new generation Partlow + Series limit controllers transform 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.

The + Series limit controllers are affordable, well-featured, easy to use and adaptable with performance features that work for you to make limit control simple.

#### APPLICATIONS:

Fail-safe protection device to prevent damage to equipment or products. It will shut down a process when a preset temperature is reached and cannot be reset by the operator until the process has returned to a safe condition.

#### INDUSTRIES

- Industrial and lab ovens/furnaces
- Plastics and thermal forming
- Packaging applications
- And any other where protection against out-of-range temperature condition is a critical requirement

#### FEATURES/BENEFITS

- **NEW** Improved easy-to-use HMI
- **NEW** Jumperless input configuration
- **NEW** Auto-hardware recognition
- **NEW** Improved Windows PC configuration software
- Process alarms
- Optional digital input and remote reset
- Optional 10V SSR driver output
- Faster communication speeds in selectable MODBUS or ASCII format
- FM Approved
- Backward compatible panel cutout, housing and terminal wiring capability

## 1/4 DIN Limit Controller

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## SPECIFICATIONS\*

## STANDARD FEATURES

4 per second input sample rate  
 Universal input  
**NEW** Improved HMI, 4 button operation, dual 4-digit LED display  
**NEW** Plug-in output modules – install just the function needed  
**NEW** Jumperless input configuration  
**NEW** Auto-detection of installed output modules  
**NEW** Improved PC configuration software  
 Process alarms  
**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 20-48VAC 50/60Hz or 22-65VDC  
**Power Consumption:** 5W / 7.5 VA Maximum

## DISPLAY:

**Type:** Dual, Red or Green, 7 segment LED, 4 digit upper and lower displays  
**Height:** 13mm (0.53") upper display, 10mm (0.39") lower display  
**Annunciators:** 5 LED indicators for output and status

## INPUTS

**T/C's:** J, T, K, L, N, B, R, S, C; Pt Rh20% vs. Pt 40% Rh  
**RTD:** 3-wire, PT100  
**DC Linear (Scalable –1999 to +9999)**  
**Volts:** 0-5V, 1-5V, 0-10V, 2-10V  
**DC milliamps:** 0-20mA or 4-20mA  
**DC millivolts:** 0-50mV, 10-50mV

## OUTPUTS

Output 1 (limit relay) fixed; outputs 2 and 3 (alarm relay) are user-selectable and customized based on desired application; choose from the following output types  
**Max # of Outputs:** 3 for alarm, 24 VDC transmitter power supply or retransmit of process value/limit trip setpoint  
**Limit Relay:** SPDT; 240VAC 5A resistive; Lifetime >100,000 operations at rated voltage/current  
**Alarm Relay:** Optional SPDT; 240VAC 2A resistive; Lifetime >500,000 operations at rated voltage/current  
**SSR Drive:** Optional drive capability: >10 VDC nominal into 500 ohm minimum  
**DC Linear:** Optional 0-20mA, 4-20mA into 500 ohm max; 0-10V, 1-5V, 2-10V, 0-5V into 500 ohm min; Outputs have 2% over/under drive applied; Accuracy +0.25% (mA into 250 ohm load, V into 2k ohm load); degrading linearity to +0.5% for increasing burden to specified limits  
**Triac:** Optional 0.01 to 1A AC, 20 to 280Vrms, 47-63 Hz (Limit 2)  
**Transmitter Power Supply:** Optional 24 VDC (Limit 1)

## OUTPUT FUNCTIONS

**Process Alarm:** (reverse or direct)  
**Modes (Alarm 1 and 2):** High/Low, Band, Deviation, logical OR/AND  
**Retransmit:** Process value or limit setpoint

## ELECTRICAL PERFORMANCE

**Accuracy:** ± 0.1% of input range ±1 LSD (T/C CJC better than 1 degree C)  
**Input sample rate:** 4 per second, 14 bit resolution  
**Impedance:** >10M ohm for the thermocouple and mV ranges, 47k ohm for V ranges and 5 ohm for mA ranges  
**Sensor Break Detection:** <2 seconds (except zero based DC ranges), limit output opens, low alarms activate for RTD, mA or V ranges

## COMMUNICATIONS INTERFACE

**User-selectable:** 2-wire, RS-485 serial communications option with choice of Modbus RTU or ASCII protocol; 1200 to 19200 baud  
**PC Configuration:** Offline configuration from serial port to dedicated configuration socket (comms option not required)

## RATINGS/AGENCY APPROVALS

**Conformance:** FM, CE, UR, cUR UL File # 67237  
**Safety:** EN61010  
**EMC:** EN61326

## PROTECTION

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

## PHYSICAL DIMENSIONS

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

## OPTIONS/ACCESSORIES

**Digital Input 1 (Optional):** remote reset  
**NEW** Faster RS-485 serial communication speeds and user-selectable (Modbus or ASCII) option  
**NEW** 24VDC transmitter power supply option  
**Choice of Led colors:** red/red, red/green, green/red, green/green  
 10VDC SSR Drive output

## WARRANTY

3 Years

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Partlow Brand 1401+ Data Sheet (7/05)

**1/4 DIN Limit Controller**

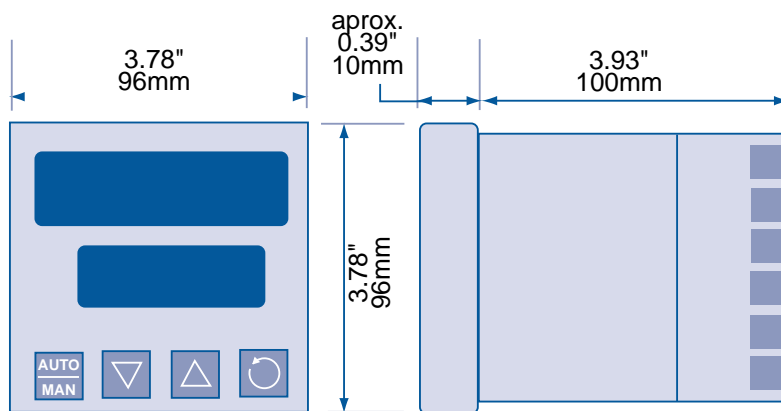
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**MODELS**

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>P1401</b>	<b>1</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
1/4 DIN Limit Controller includes: jumperless input configuration, auto-detection hardware and improved PC configuration software	1 Relay 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 Upper, 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	00 100-240V AC 02 24-48 AC or DC

† Only one Transmitter Power Supply may be installed per unit

**DIMENSIONS - 1/4 DIN**



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

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