

# Partlow 1160+, 1800+, 1400+ Temperature & Process Controllers



- Jumperless Configuration
- Auto Detected Hardware
- Process & Loop Alarms
- Modbus & ASCII Comms
- Auto or Manual Tuning
- Heat/Cool Operation
- Ramping Setpoint
- Remote/Dual Setpoint Options
- Available in 1/16, 1/8 & 1/4 DIN Formats



With their improved interface, technical functionality and field flexibility, the Partlow 1160+, 1800+ and 1400+ give you the best in comprehensive control for most temperature and process control loops.

## Specification

### Features

Control Types	Full PID with Pre-tune, Self-tune, manual tuning, or On-Off control. Heat only or heat & cool
Auto/Manual	Selectable from front panel or via digital input, with bumpless transfer
Output Configuration	Up to 3 possible, for control, alarm, 24VDC transmitter power supply or retransmit of process value or setpoint
Alarm 1 & 2 Types	Process high, process low, SP deviation, band, logical OR / AND. Also 1 loop alarm for process control security. Process alarms have adjustable hysteresis.
Human Interface	4 button operation, dual 4 digit 10mm & 8mm high (6100+, 8100+) and 13mm & 10mm high (4100+) LED displays, optional choice of colours (Red/Red, Red/Green, Green/Red or Green/Green), plus 5 LED indicators
PC Configuration	Off-line configuration from PC serial port to dedicated config socket (comms option not required). Configuration Software for Windows 98 or higher. West Part Number: PS1-CON

### Input

Thermocouple	J, K, C, R, S, T, B, L, N & PtRh20%vsPtRh40%.
RTD	3 Wire PT100, 50Ω per lead maximum (balanced)
DC Linear	0 to 20mA, 4 to 20mA, 0 to 50mV, 10 to 50mV, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V. Scaleable -1999 to 9999, with adjustable decimal point
Impedance	>10MΩ for Thermocouple and mV ranges, 47KΩ for V ranges and 5Ω for mA ranges
Accuracy	±0.1% of input range ±1 LSD (T/C CJC better than 1°C)
Sampling	4 per second, 14 bit resolution approximately
Sensor Break Detection	<2 seconds (except zero based DC ranges), control O/P's turn off, high alarms activate for T/C and mV ranges, low alarms activate for RTD, mA or V ranges

### Outputs & Operations

Control & Alarm Relays	Contacts SPDT 2 Amp resistive at 240V AC, >500,000 operations
Control SSR Driver Outputs	Drive capability >10V DC in 500Ω minimum
Triac Outputs	0.01 to 1 Amp AC, 20 to 280Vrms, 47 to 63Hz
DC Linear Outputs	0 to 20mA, 4 to 20mA into 500Ω max, 0 to 10V, 2 to 10V, 0 to 5V into 500Ω min. Control outputs have 2% over/under drive applied. Accuracy ±0.25% at 250Ω (degrades linearly to 0.5% for increasing burden to specified limits)
Transmitter Power Supply	Output 24VDC (nominal) into 910Ω minimum to power external devices
Communications	2 Wire RS485, 1200 to 19200 Baud, Modbus and ASCII protocol (selectable)



Digital Input  
Remote Setpoint Input

Selects between 2 setpoints or Auto/Manual control. Volt free or TTL input  
0 to 20mA, 4 to 20mA, 0 to 5V, 1 to 5V, 0 to 10V or 2 to 10V. Scaleable -1999 to 9999. Local/Remote setpoint selected from front panel

### Operating & Environmental

Temperature & RH

0 to 55°C (-20 to 80°C storage), 20% to 95% RH non-condensing

Power Supply

100 to 240V 50/60Hz 7.5VA (optional 20 to 48V AC 7.5VA/22 to 65V DC 5 watts)

Front Panel Protection

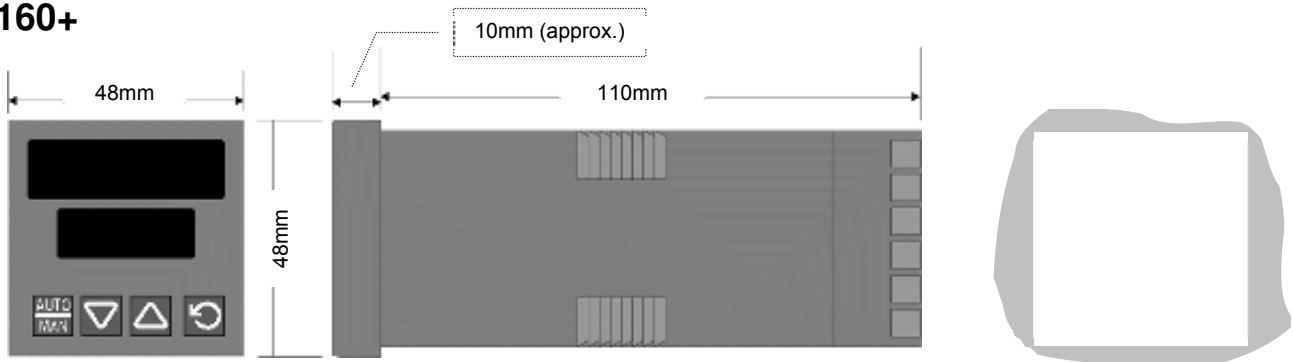
IEC IP66 (Behind panel protection is IP20)

Standards

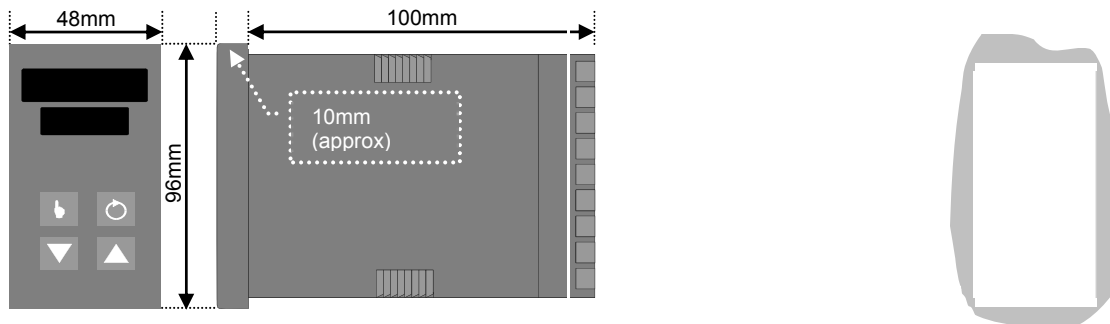
CE, UL & ULC recognised

### Dimensions

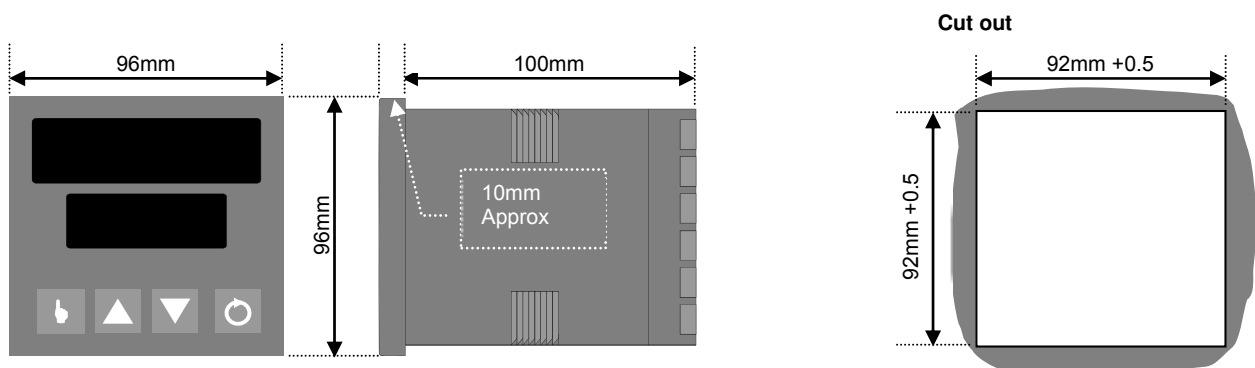
#### 1160+



#### 1800+

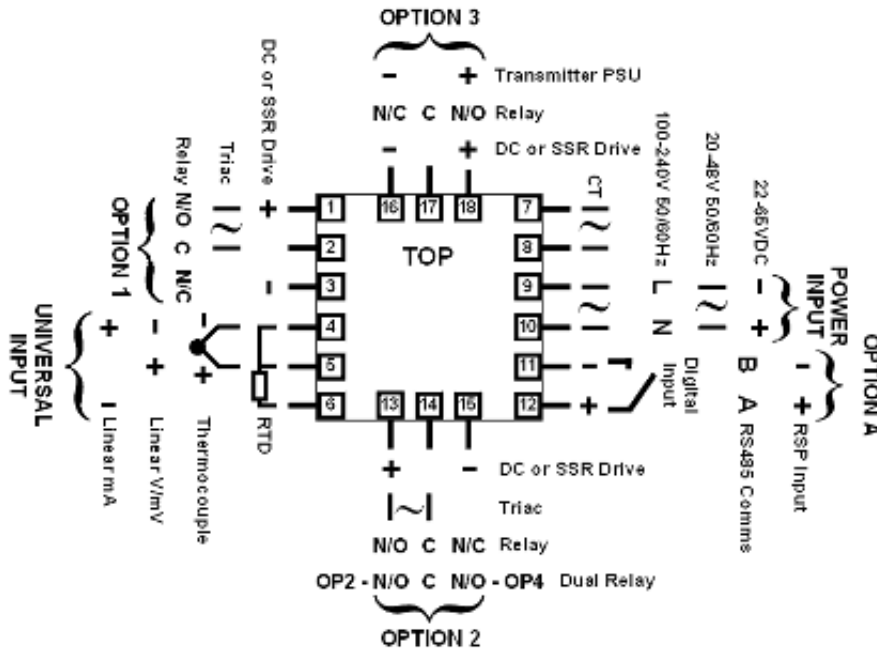


#### 1400+



## Wiring Connections

### 1160+



### Field Reconfiguration

#### Input

Jumper-free configuration for any type  
(no extra parts required)

#### Option Slot 1

Relay Output ..... PO1-C10  
Linear mA/V DC Output ..... PO1-C21  
SSR Driver Output ..... PO1-C50  
Triac Output ..... PO1-C80

#### Option Slot 2 [Part Number](#)

Relay Output ..... PO2-C10  
Linear mA/V DC Output ..... PO2-C21  
SSR Driver Output ..... PO2-C50  
Triac Output ..... PO2-C80

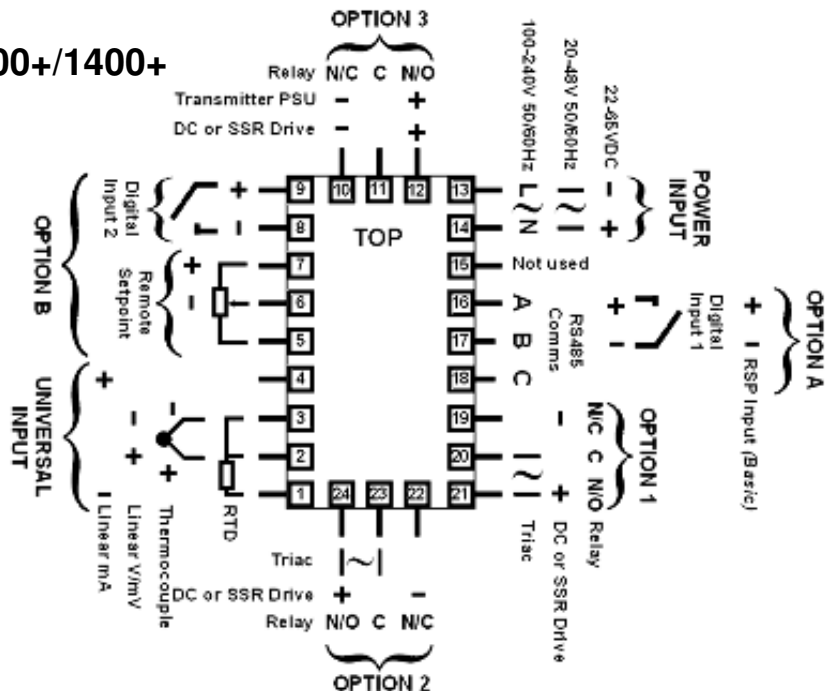
#### Option Slot 3 [Part Number](#)

Relay Output ..... PO2-C10  
Linear mA/V DC Output ..... PO2-C21  
SSR Driver Output ..... PO2-C50  
24VDC Transmitter PSU ..... PO2-W08

#### Option Slot A [Part Number](#)

Digital Input ..... PA1-W03  
Remote Setpoint Input ..... PA1-W04  
RS485 Comms ..... PA1-W06

### 1800+/1400+



### Field Reconfiguration

#### Input

Jumper-free configuration for any type  
(no extra parts required)

#### Option Slot 1

Relay Output ..... PO1-C10  
Linear mA/V DC Output ..... PO1-C21  
SSR Driver Output ..... PO1-C50  
Triac Output ..... PO1-C80

#### Option Slot 2 [Part Number](#)

Relay Output ..... PO2-C10  
Linear mA/V DC Output ..... PO2-C21  
SSR Driver Output ..... PO2-C50  
Triac Output ..... PO2-C80

#### Option Slot 3 [Part Number](#)

Relay Output ..... PO2-C10  
Linear mA/V DC Output ..... PO2-C21  
SSR Driver Output ..... PO2-C50  
24VDC Transmitter PSU ..... PO2-W08

#### Option Slot A [Part Number](#)

Digital Input ..... PA1-W03  
Remote Setpoint Input ..... PA1-W04  
RS485 Comms ..... PA1-W06

#### Option Slot bb [Part Number](#)

Full Remote Setpoint input .... PB1-W0R

## Order Code

### MODEL

1/16 DIN Controller

1/8 Din Controller

¼ DIN Controller

### OPTION SLOT 1

No Output

Relay

SSR Driver

Linear DC

Triac

### OPTION SLOT 2

No Output

Relay

SSR Driver

Linear DC

Triac

### OPTION SLOT 3

No Output

Relay

SSR Driver

Linear DC

Transmitter power Supply

### OPTION SLOT A / DISPLAY COLOR

No Option A

Red Upper/Red Lower

RS485 Serial Comms

Red Upper/Red Lower

No option A

Green Upper/Red Lower

RS485 Comms

Green Upper/Red Lower

No Option A

Red Upper/Green Lower

RS485 Comms

Red Upper/Green Lower

No Option A

Green Upper/Green Lower

RS485 Comms

Green Upper/Green Lower

Digital input

Red Upper/Red Lower

Digital input

Green Upper/Red Lower

Digital input

Red Upper/Green Lower

Digital input

Green Upper/Green Lower

Basic Remote Setpoint

Red Upper/Red Lower

Basic Remote Setpoint

Green Upper/Red Lower

Basic Remote Setpoint

Red Upper/Green Lower

Basic Remote Setpoint

Green Upper/Green Lower

### VOLTAGE

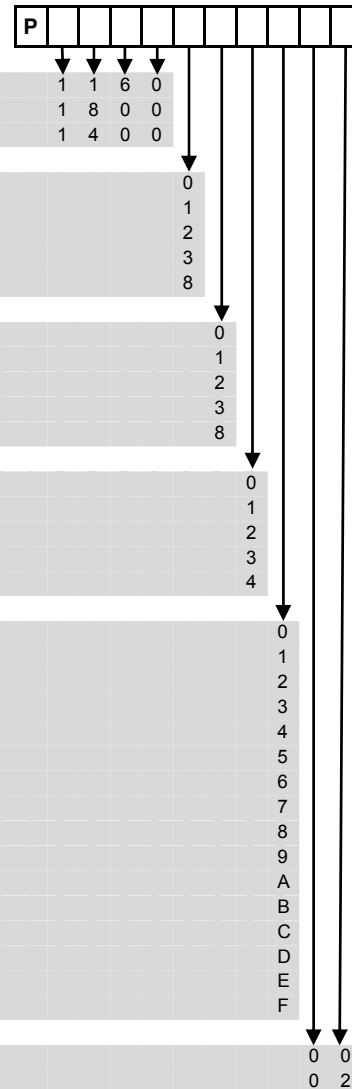
100-240 VAC

24-48V AC/DC

Options below are for 1/8 and ¼ DIN controllers only

Remote Setpoint (full with digital input)

24-48V AC/DC & Remote Setpoint (full with digital input)



R R  
R 2