

# 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

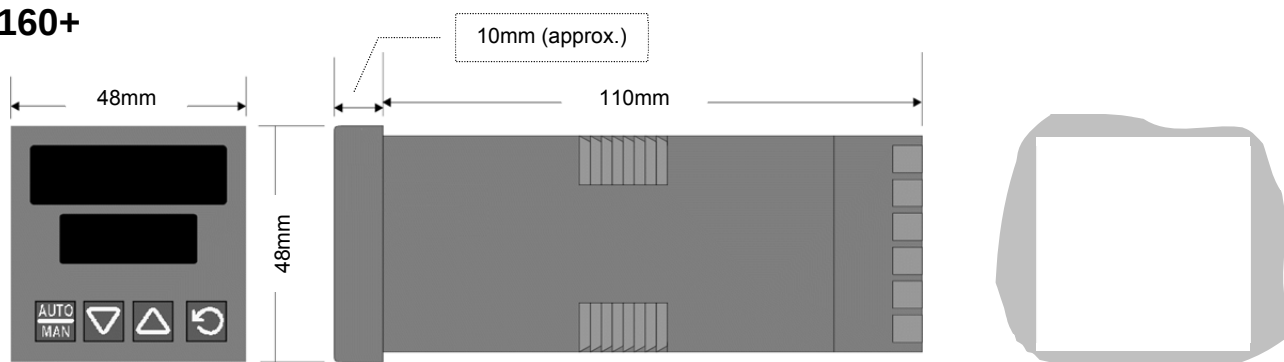
IEC IP66 (Behind panel protection is IP20)

Standards

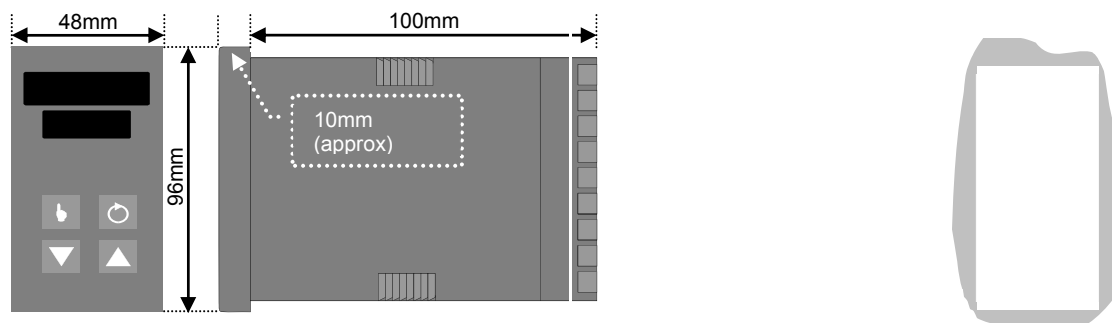
CE, UL & ULC recognised

## Dimensions

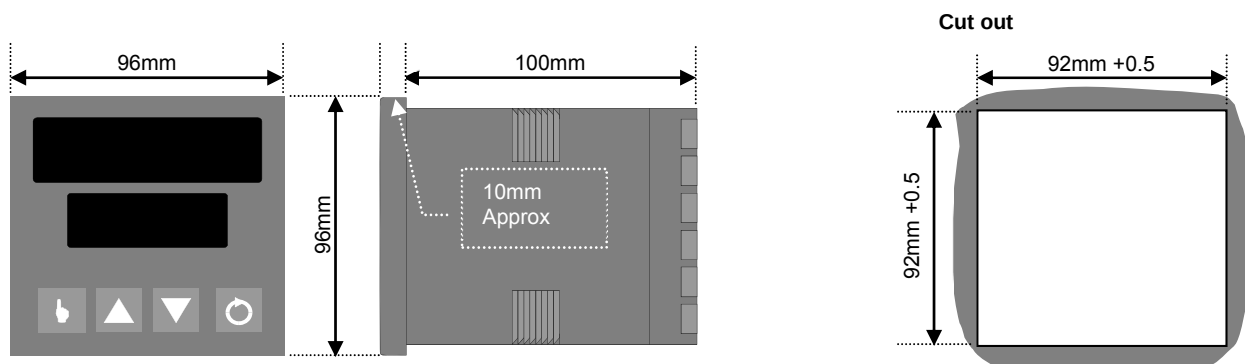
### 1160+



### 1800+

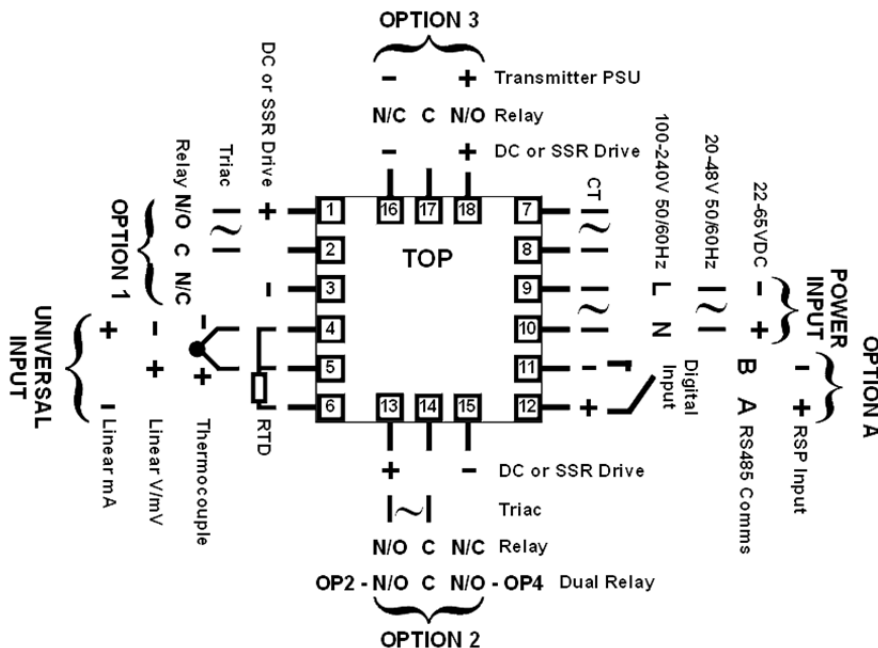


### 1400+



## 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

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

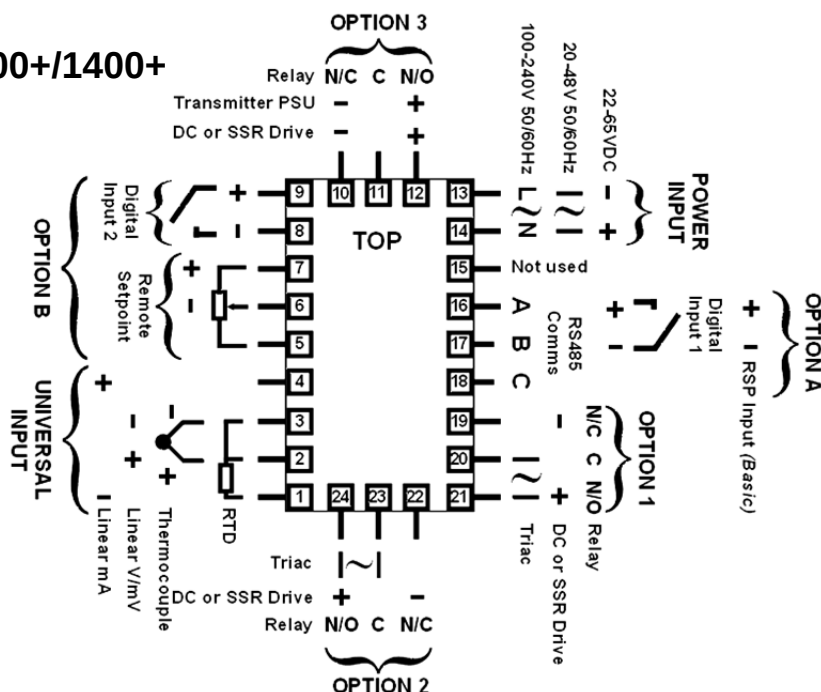
##### Option Slot 3

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

##### Option Slot A

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

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

##### Option Slot 3

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

##### Option Slot A

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

##### Option Slot bB

Full Remote Setpoint input..... PB1-W0R

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

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