IDEAL FOR:
- Plastic extrusion
- Chillers
- Sterilisers
- Small ovens
- Heat sealing
- Trace heating

FEATURES:
- Universal input selection
- Two configurable outputs
- Three internal alarm setpoints
- Heater failure detection
- Tactile buttons
- Customised operator interface

PID Temperature Controllers
Specification Sheet

Available in compact 1/32 and 1/16 DIN panel sizes, the 2100 Series uses advanced PID algorithms to give stable ‘straight line’ temperature control. Self tuning is included to optimise the control performance without the need for specialist knowledge or training.

Universal Input
A universal input allows selection of nine internally stored thermocouple types and the Pt100 resistance thermometer. Other input linearisations may be factory downloaded. Linear inputs can be scaled to the desired display range.

Outputs
Two outputs are configurable for heating, cooling or alarms.

Alarm Setpoints
Three internal alarm setpoints are provided, configurable as high, low or deviation alarms. Alarms can be ‘blocked’ on start-up to prevent unnecessary operator alerts.

Heater Failure
Heater failure can be detected when the controller is used with a TE10S Solid State Relay.

Operator Interface
The operator interface can be customised to present only those parameters that an operator needs to see and adjust, while all other parameters are locked away under password protection. Tactile buttons ensure positive operation.

Timer Functionality

![Diagram of temperature control with setpoint, ramp control, dwell time, and switch off times]
General

Environmental performance

Temperature limits
Operation: 0 to 55°C
Storage: -30 to 75°C

Humidity limits
Operation: 5 to 95% RH non condensing
Storage: 5 to 95% RH non condensing

Panel sealing: IP65

Altitude: <2000 metres
Atmospheres: Not suitable for use in explosive or corrosive atmosphere

Electromagnetic compatibility (EMC)

Emissions and immunity: BS EN61326
Suitable for industrial use, environmental immunity and emissions (Class A)
Under industrial immunity conditions the instrument will not deviate by more than an additional amount equal to the published tolerance.

Electrical safety

BS EN61010
INSTALLATION CATEGORY II
The rated impulse voltage for equipment on nominal 230V mains is 2500V.
POLLUTION DEGREE 2
Normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation shall be expected.

Physical

Panel mounting
2132: 1/32DIN
2116: 1/16DIN
Panel cut-out dims.
2132: 45W x 22Hmm (see Dimensional details)
2116: 45W x 45Hmm (see Dimensional details)
Panel depth
Both: 103mm

Physical

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Panel depth
Both: 103mm

Operator interface

Type: Dual 7 segment LED up to 2 decimal places
Display:
Both 10mm
Status beacons:
OP1, OP2, MAN
Access levels:
Operator, full access, Edit, config, Password protected

Power requirements

Supply voltage
High voltage: 100Vac -15% to 240Vac + 10%, 48-62Hz.
5W maximum
Low voltage: 240Vdc or ac -15%, +20% DC to 62Hz.
5W maximum

Approvals
CE, cUL listed (file E57766)

PV Input

Calibration accuracy:
±1°C or ±0.25% of reading whichever is greater
Cold Junction compensation:
>30:1 rejection of ambient temperature change
T/C
RTD
PT100
mV
-9.99 to +80mV
mA
0 to 20mA
4 to 20mA
V
0 to 10V (Input Adaptor required)
Other
Custom input available
Input filtering
Off to 999.9 seconds

Relay Output

Relay (isolated) 264Vac, maximum 2A Resistive, minimum 12Vdc, 100A

Logic I/O

Rating:
9Vdc at 18mA (non-isolated from sensor input). Can be used as alarm output or alarm acknowledge input

Dimensional details

2132

Panel retaining clips

Panel cut-out

2116

Panel retaining clips

Panel cut-out
ORDER CODE

1. Function
   - CC: PID control
   - CF: Over/Off control
   - TC: PID + Timer
   - TN: On/Off controller + Timer

2. Supply Voltage
   - VH: 85-264Vac
   - VL: 20-29V dc or ac

3. Manual Language
   - XXX: No manual
   - ENG: English
   - FRA: French
   - GER: German
   - NED: Dutch
   - SPA: Spanish
   - SWE: Swedish
   - ITA: Italian

4. Output 1 (Logic)
   - XX: Not fitted

5. Output 2 (Relay)
   - RH: Heating
   - RC: Cooling
   - HT: High alarm 2
   - FL: Low alarm 2
   - DB: Dev. band alarm 2
   - DH: Dev. high alarm 2
   - AL: High alarm 2 & low alarm 3
   - NW: New alarm

6. Sensor Input
   - Standard Sensor Thermocouple Inputs
     - J
     - K
     - L
     - N
     - R
     - S
     - B
     - W5%
     - Pt20%
     - W/W26%
     - 5%
     - W5%
     - Pt10%
     - Exergen K80 I.R. pyrometer
   - Process I/P
     - M: -9.99 to 80.00mV linear
     - Y: 0 to 20mA linear
     - A: 4 to 20mA linear
     - V: 0 to 10Vdc linear

7. Setpoint Min
   - J: -210
   - K: -200
   - L: -200
   - N: -200
   - R: -50
   - S: -50
   - B: 0
   - W: 0
   - X: 0
   - Z: -200
   - RH: -50
   - RC: 0
   - DL: 0
   - AL: 0
   - NW: 0

8. Setpoint Max
   - J: 1200
   - K: 1372
   - L: 900
   - N: 1300
   - R: 1700
   - S: 1768
   - B: 1620
   - W: 1360
   - X: 850
   - RH: 0
   - RC: 0
   - DL: 0
   - AL: 0
   - NW: 0

9. Notes
   - 1. PDS heater break detect will transmit the power demand to a TE10S Solid State Relay and read back a heater break alarm.
   - 2. Setpoint min and max: Include the decimal position required in the displayed value. Up to one for temperature inputs, up to two for process inputs.
   - 3. An external 1% current sense resistor is supplied as standard. If greater accuracy is required specify 'A1' in the Input Adaptor field.
   - 4. Input Adaptor 'V1' required.

10. Rear terminal connections

11. Display Units
   - C: Celsius
   - F: Fahrenheit
   - K: Kelvin
   - X: Linear input

12. Ext Relay Module
   - XX: Not fitted
   - R7: Fitted (Operated by the logic output)

13. Input Adapter
   - XXX: Not fitted
   - V1: 0-10Vdc
   - A1: 0-20mA or 4-20mA 0.1% current sense resistor (2.49Ω)

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2. Setpoint min and max: Include the decimal position required in the displayed value. Up to one for temperature inputs, up to two for process inputs.
3. An external 1% current sense resistor is supplied as standard. If greater accuracy is required specify 'A1' in the Input Adaptor field.
4. Input Adaptor 'V1' required.
Eurotherm: International sales and service

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