





PID Temperature Controllers Specification Sheet

Available in compact 1/32 and 1/16 DIN panel sizes, the 2100 Series

Self tuning is included to optimise the control performance without

Other input linearisations may be factory downloaded. Linear inputs

uses advanced PID algorithms to give stable 'straight line'

A universal input allows selection of nine internally stored thermocouple types and the Pt100 resistance thermometer.

the need for specialist knowledge or training.

can be scaled to the desired display range.

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

Two outputs are configurable for heating, cooling or alarms.

Outputs

temperature control.

Universal Input

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



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General

Environmental pe	rformance		
Temperature limits	Operation: Storage:	0 to 55°C -30 to 75°C	
Humidity limits	Operation: Storage:	5 to 95% RH non condensing 5 to 95% RH non condensing	
Panel sealing: Altitude:	-	IP65 <2000 metres	
Atmospheres:		Not suitable for use in explosive or corrosive atmosphere	
Electromagnetic of Emissions and imm	compatibility unity:	/ (EMC) BS EN61326	
Suitable for indust	trial use, envi	ironmental immunity and emissions (Class A)	1
Under industrial in more than an add	mmunity con litional amou	ditions the instrument will not deviate by nt equal to the published tolerance.	
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Physical		
i liysicat	2422	4 (220)
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

Operator interf	ace ———	
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 requirem	ents ———	
Supply voltage	High voltage:	100Vac -15% to 240Vac + 10%, 48-62Hz. 5W maximum
	Low voltage:	240Vdc or ac -15%, +20% DC to 62Hz.
Annuavala		Sw maximum
Approvats —		CE, cUL listed (file E57766)
PV Input		
Calibration accur	acy:	±1°C or ±0.25% of reading whichever is
		greater
Cold Junction co	mpensation:	>30:1 rejection of ambient temperature change
T/C		I. K. T. L. N. R. S. B. P
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



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ORDER CODE

Racic Product

1 2	3 4	5 6	7 8	9 10	11	12 13
	XXXXXX	XXXXXXX		Note 2 Note 2		

Du	sie i roduce
2132	48 x 48mm unit
2116	48 x 96mm unit
1 Fu	nction
CC.	PID control
NF	On/off control
тс	PID control + Timer
TN	On/off controller + Timer
2 Su	pply Voltage
	FF 598
VH	85-264Vac
VL	20-29V dc or ac
3 Ma	anual Language
VVV	No manual
ENG	Fnglish
FRA	French
GFR	German
NED	Dutch
SPA	Spanish
SWE	Śwedish
ITA	Italian
6 Ou	tput 1 (Logic)
vv	Not fitted
LH	Heating
LC	Cooling
M1	PDS heater break detect
	(note 1)
FH	High alarm 1

FL

DB DL

DH

NW

ΤМ

Logic input AC KL

Low alarm 1

New alarm

Dev. band alarm 1

Dev. low alarm 1

Dev, high alarm 1

Alarm ack/reset Kevlock

Timer Off/On

7 Ou	tput 2 Relay	
XX	No function	
RH	Heating	
RC	Cooling	
FH	High alarm 2	
FL	Low alarm 2	
DB	Dev. band alarm 2	
DL	Dev. low alarm 2	
DH	Dev. high alarm 2	
AL	High alarm 2 & low alarm 3	
NW	New alarm	
8 Se	nsor Input	9 Setpoint Min
Standa	rd Sensor Thermocouple Inputs	Min [•] C
Standa J	rd Sensor Thermocouple Inputs	Min *C -210
Standa J K	rd Sensor Thermocouple Inputs J K	Min *C -210 -200
Standa J K T	rd Sensor Thermocouple Inputs J K T	Min *C -210 -200 -200
Standa J K T L	rd Sensor Thermocouple Inputs J K T L	Min *C -210 -200 -200 -200
Standa J K T L N	<mark>rd Sensor Thermocouple Inputs</mark> J K T L N - Nicrosil/Nisil	Min *C -210 -200 -200 -200 -200 -200
Standa J K T L N R	<mark>rd Sensor Thermocouple Inputs</mark> J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh	Min *C -210 -200 -200 -200 -200 -50
Standa J K T L N R S	rd Sensor Thermocouple Inputs J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh S - Pt /Pt10%Rh	Min *C -210 -200 -200 -200 -200 -50 -50
Standa J K T L N R S B	rd Sensor Thermocouple Inputs J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh S - Pt /Pt10%Rh B - Pt/Pt30%Rh -6%Rh	Min *C -210 -200 -200 -200 -200 -50 -50 0
Standa J K T L N R S B P	rd Sensor Thermocouple Inputs J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh S - Pt /Pt10%Rh B - Pt/Pt30%Rh -6%Rh Platinel II	Min *C -210 -200 -200 -200 -200 -50 -50 0 0
Standa J K T L N R S B P Z	rd Sensor Thermocouple Inputs J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh S - Pt /Pt10%Rh B - Pt/Pt30%Rh B - Pt/Pt30%Rh Platinel II RTD/PT100 DIN 43760	Min *C -210 -200 -200 -200 -50 -50 0 0 -200
Standa J K T L N R S B P Z Z Factory	rd Sensor Thermocouple Inputs J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh S - Pt /Pt10%Rh B - Pt/Pt10%Rh B - Pt/Pt10%Rh Platinel II RTD/PT100 DIN 43760 Downloaded Linearisation	Min *C -210 -200 -200 -200 -200 -50 -50 0 0 -200 Min *C
Standa J K T L N R S B P Z Factory C	rd Sensor Thermocouple Inputs J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh S - Pt /Pt10%Rh B - Pt/Pt30%Rh -6%Rh Platinel II RTD/PT100 DIN 43760 Downloaded Linearisation C - W5%Re/W26%Re (Hoskins)	Min *C -210 -200 -200 -200 -50 0 -200 Min *C 0
Standa J K T L N R S B P Z Factory C D	rd Sensor Thermocouple Inputs J K T L N - Nicrosil/Nisil R - Pt/Pt13%Rh S - Pt /Pt10%Rh B - Pt/Pt3%Rh - 6%Rh Platinel II RTD/PT100 DIN 43760 Downloaded Linearisation C - VS%Re/W26%Re (Hoskins) D - W3%Re/W25%Re	Min *C -210 -200 -200 -200 -200 -50 -50 0 0 -200 Min *C 0 0

11 Display Units

Celsius Fahrenheit K X Kelvin Linear input

Ext Relay Module 12

Not fitted Fitted (Operated by the logic output)

13 Input Adaptor

XX

R7

10 Setpoint Max

Max °C

1200

1372

400

Max [•]C 2319 2399 1000

1399

1870

2000

2010

2300

2000

1800

650

Max •

9999

9999

9999

9999

- XX Not fitted 0-10Vdc
 - 0-20mA or 4-20mA 0.1% current
- V1 A1 sense resistor (2.49 Ω)

Notes

M Y A V

1. PDS heater break detect will transmit the power demand to a TE10S Solid State Relay and read back a heater break alarm. 2.

0

0

0

0

10

0

200

-45

Min *C

-999

-999

-999

-999

- 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. An external 1% current sense resistor is supplied as standard. If greater accuracy is
- 3.
- required specify 'A1' in the Input Adaptor field.

4. Input Adaptor 'V1' required.

Ni/Ni18%Mo

Pt20%Rh/Pt40%Rh

Pt10%Rh/Pt40%Rh

W/W26%Re (Engelhard)

W5%Re/W26%Re (Engelhard) W5%Re/W26%Re (Bucose)

W/W26%Re (Hoskins)

8 Exergen K80 I.R. pyrometer Process I/P (Scaled to setpoint min & max)

-9.99 to 80.00mV linear

0 to 20mA linear (Note 3)

4 to 20mA linear (Note 3)

0 to 10Vdc linear (Note 4)

Rear terminal connections





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