

2132 2116

MODELS



PID Temperature Controllers Specification Sheet

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

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.

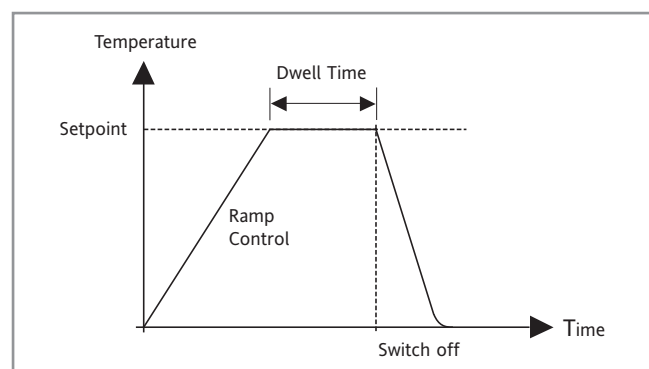
Heater Failure

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



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 cat. II; Pollution degree 2

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

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	J, 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

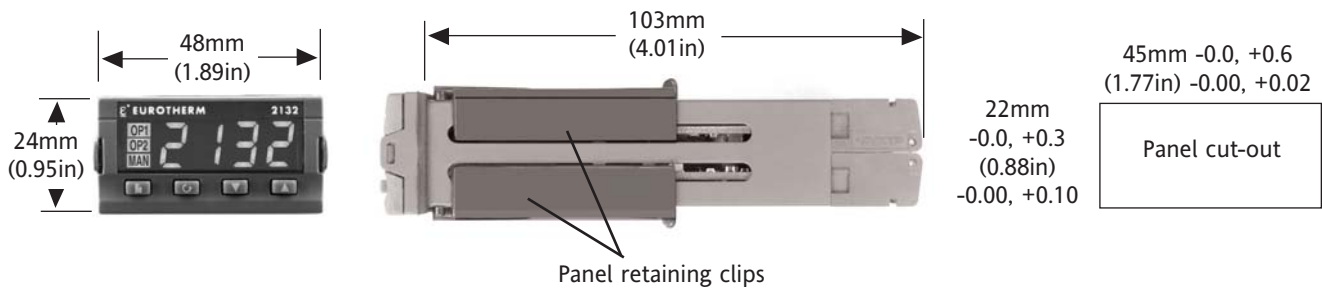
Relay (isolated) 264Vac, maximum 2A Resistive, minimum 12Vdc, 100A

Logic I/O

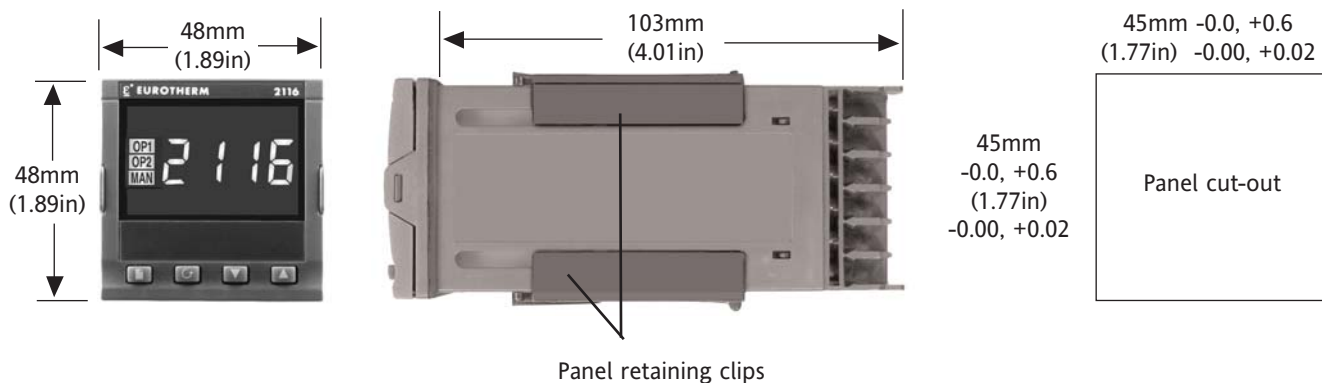
Rating: 9Vdc at 18mA (non-isolated from sensor input). Can be used as alarm output or alarm acknowledge input

Dimensional details

2132



2116



ORDER CODE

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

Basic Product

2132	48 x 48mm unit
2116	48 x 96mm unit

1 Function

CC	PID control
NF	On/off control
TC	PID control + 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

6 Output 1 (Logic)

XX	Not fitted
Logic output	
LH	Heating
LC	Cooling
M1	PDS heater break detect (note 1)
FH	High alarm 1
FL	Low alarm 1
DB	Dev. band alarm 1
DL	Dev. low alarm 1
DH	Dev. high alarm 1
NW	New alarm
Logic input	
AC	Alarm ack/reset
KL	Keylock
TM	Timer Off/On

7 Output 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 Sensor Input

Standard Sensor Thermocouple Inputs	
J	J
K	K
T	T
L	L
N	N - Nicrosil/Nisil
R	R - Pt/Pt13%Rh
S	S - Pt /Pt10%Rh
B	B - Pt/Pt30%Rh -6%Rh
P	Platinel II
Z	RTD/PT100 DIN 43760

Factory Downloaded Linearisation

	Min °C	Max °C
C	0	2319
D	0	2399
E	-250	1000
1	0	1399
2	0	1870
3	0	2000
4	0	2010
5	10	2300
6	0	2000
7	200	1800
8	-45	650

Process I/P (Scaled to setpoint min & max)

	Min °C	Max °C
M	-9.99 to 80.00mV linear	9999
Y	0 to 20mA linear (Note 3)	9999
A	4 to 20mA linear (Note 3)	9999
V	0 to 10Vdc linear (Note 4)	9999

9 Setpoint Min

Min °C
-210
-200
-200
-200
-200
-200
-50
-50
0
0
-200

10 Setpoint Max

Max °C
1200
1372
400
900
1300
1700
1768
1820
1369
850

Process I/P (Scaled to setpoint min & max)

	Min °C	Max °C
M	-999	9999
Y	-999	9999
A	-999	9999
V	-999	9999

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)

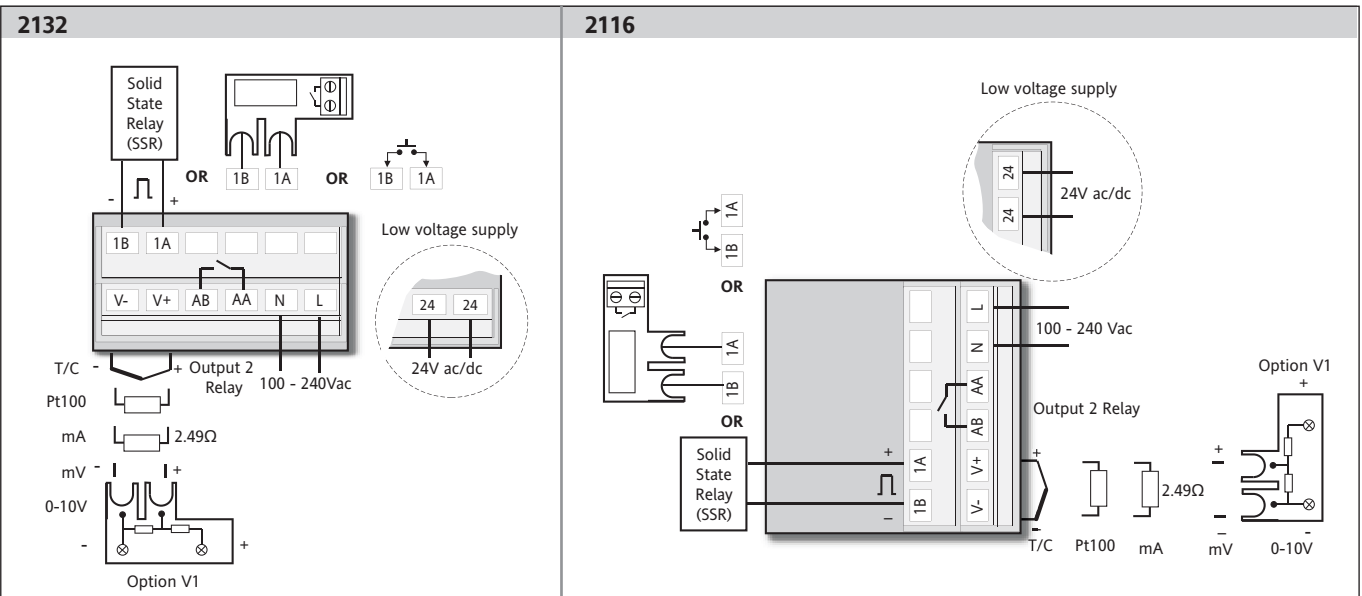
13 Input Adaptor

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

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 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.

Rear terminal connections



Eurotherm: International sales and service

Understanding and providing local support is a key part of Eurotherm business. Complementing worldwide Eurotherm offices are a whole range of partners and a comprehensive technical support team, to ensure you get a service you will want to go back to.

AUSTRALIA *Sydney*
Eurotherm Pty. Ltd.
T (+61 2) 9838 0099
F (+61 2) 9838 9288
E info.au@eurotherm.com

AUSTRIA *Vienna*
Eurotherm GmbH
T (+43 1) 7987601
F (+43 1) 7987605
E info.at@eurotherm.com

BELGIUM & LUXEMBOURG *Moha*
Eurotherm S.A/N.V.
T (+32) 85 274080
F (+32) 85 274081
E info.be@eurotherm.com

BRAZIL *Campinas-SP*
Eurotherm Ltda.
T (+5519) 3707 5333
F (+5519) 3707 5345
E info.br@eurotherm.com

CHINA
Eurotherm China
T (+86 21) 61451188
F (+86 21) 61452602
E info.cn@eurotherm.com

Beijing Office
T (+86 10) 63108914
F (+86 10) 63107291
E info.cn@eurotherm.com
Guangzhou Office
T (+86 20) 38106506
F (+86 20) 38106511
E info.cn@eurotherm.com

DENMARK *Copenhagen*
Eurotherm Danmark AS
T (+45 70) 234670
F (+45 70) 234660
E info.dk@eurotherm.com

FINLAND *Abo*
Eurotherm Finland
T (+358) 22506030
F (+358) 22503201
E info.fi@eurotherm.com

FRANCE *Lyon*
Eurotherm Automation SA
T (+33 478) 664500
F (+33 478) 352490
E info.fr@eurotherm.com

GERMANY *Limburg*
Eurotherm Deutschland GmbH
T (+49 6431) 2980
F (+49 6431) 298119
E info.de@eurotherm.com

HONG KONG
Eurotherm Hongkong
T (+85 2) 28733826
F (+85 2) 28700148
E info.hk@eurotherm.com

INDIA *Chennai*
Eurotherm India Limited
T (+91 44) 24961129
F (+91 44) 24961831
E info.in@eurotherm.com

IRELAND *Dublin*
Eurotherm Ireland Limited
T (+353 1) 4691800
F (+353 1) 4691300
E info.ie@eurotherm.com

ITALY *Como*
Eurotherm S.r.l.
T (+39 031) 975111
F (+39 031) 977512
E info.it@eurotherm.com

KOREA *Seoul*
Eurotherm Korea Limited
T (+82 31) 2738507
F (+82 31) 2738508
E info.kr@eurotherm.com

NETHERLANDS *Alphen a/d Rijn*
Eurotherm B.V.
T (+31 172) 411752
F (+31 172) 417260
E info.nl@eurotherm.com

NORWAY *Oslo*
Eurotherm A/S
T (+47 67) 592170
F (+47 67) 118301
E info.no@eurotherm.com

POLAND *Katowice*
Invensys Eurotherm Sp z o.o.
T (+48 32) 2185100
F (+48 32) 2177171
E info.pl@eurotherm.com

SPAIN *Madrid*
Eurotherm España SA
T (+34 91) 6616001
F (+34 91) 6619093
E info.es@eurotherm.com

SWEDEN *Malmö*
Eurotherm AB
T (+46 40) 384500
F (+46 40) 384545
E info.se@eurotherm.com

SWITZERLAND *Wollerau*
Eurotherm Produkte (Schweiz) AG
T (+41 44) 7871040
F (+41 44) 7871044
E info.ch@eurotherm.com

UNITED KINGDOM *Worthing*
Eurotherm Limited
T (+44 1903) 268500
F (+44 1903) 265982
E info.uk@eurotherm.com
www.eurotherm.co.uk

U.S.A. *Leesburg VA*
Eurotherm Inc.
T (+1 703) 443 0000
F (+1 703) 669 1300
E info.us@eurotherm.com
www.eurotherm.com

ED56

© Copyright Eurotherm Limited 2008

Invensys, Eurotherm, the Eurotherm logo, Chessell, EurothermSuite, Mini8, Eycon, Eyris, EPower and Wonderware are trademarks of Invensys plc, its subsidiaries and affiliates. All other brands may be trademarks of their respective owners.

All rights are strictly reserved. No part of this document may be reproduced, modified, or transmitted in any form by any means, nor may it be stored in a retrieval system other than for the purpose to act as an aid in operating the equipment to which the document relates, without the prior written permission of Eurotherm limited.

Eurotherm Limited pursues a policy of continuous development and product improvement. The specifications in this document may therefore be changed without notice. The information in this document is given in good faith, but is intended for guidance only.

Eurotherm Limited will accept no responsibility for any losses arising from errors in this document.

