2200e

MODELS

Ideal for

- extrusion with optimised fan, or water cooling algorithms
- ovens and furnaces
- cold stores

PID Temperature Controllers

Available in 1/16, 1/8 and 1/4 DIN panel sizes the 2200e series are configurable for PID, On/off or motorised valve control - satisfying both electrical and gas heating applications.
Self-tuning is included to optimise control performance.

Modular heating and cooling outputs are provided, as well as a choice of one or two alarm relay outputs. The 1/8 and 1/4 DIN units have two digital inputs to select auto/manual transfer, standby mode, second setpoint or alarm acknowledge. The 1/4 DIN model 2204e has an additional 10 amp high current output option.

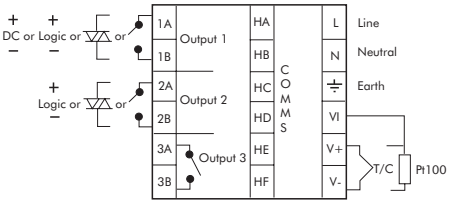
Digital communications with industry standard protocols including Modbus® and DeviceNet® are available for easy connection to supervisory control and data logging systems.

Simple heat treatment profiles can be programmed using the internal ramp generator and dwell timer.

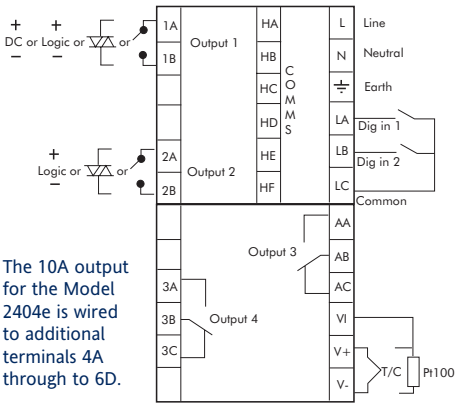
Abolish ammeters by using Eurotherm's advanced load current monitoring facility. Heater current may be displayed and also open or short circuit faults detected.

Rear terminal connections

Model 2216e



Model 2208e/2204e



The 10A output for the Model 2404e is wired to additional terminals 4A through to 6D.

Specifications

Dimensions:
Model 2216e:
48W x 48H x 103Dmm
Model 2208e:
48W x 96H x 103Dmm
Model 2204e:
96W x 96H x 103Dmm
Control modes:
PID or On/Off or motorised valve
Supply voltages:
85-264Vac, 10.0watts max.
Operating ambient:
0-55°C, 0-90%RH non-condensing
Inputs:
See sensor inputs in the configuration coding
Output ratings:
Relay: 2A, 264Vac resistive
Logic: 18Vdc, 20mA
Triac: 1A, 264Vac resistive
DC: Isolated 0-20mA, at 12Vdc
Panel sealing:
IP65, plug-in from front panel

Ordering codes

Hardware coding

Model Number	Function	Supply Voltage	Output 1	Output 2	Output 3	Output 4	10 Amp Output	Comms	Manual
		VH				Omit for 2216	Omit for 2216 & 2208		

Model Number

2216e	48x48mm unit
2208e	48x96mm unit
2204e	96x96mm unit

Function

CC	PID Control
NF	On/off control
VC	Motorised Valve control
AL	Alarm unit

Supply Voltage

VH	85-264Vac

Table A: DC retransmission

D6	Fitted unconfigured
First character	
V-	PV retrans
P-	Setpoint retrans
O-	Output retrans
Z-	Error retrans
Second character	
-1	0-20mA
-2	4-20mA
-3	0-5V
-4	1-5V
-5	0-10V

Output 1

XX	Not fitted
Relay: 2-pin	
R1	Fitted unconfigured
RH	Heating output
RU	Valve raise output
FH	High alarm 1
FL	Low alarm 1
DB	Dev. band alarm 1
DL	Dev. low alarm 1
DH	Dev. high alarm 1
Logic	
L1	Fitted unconfigured
LH	Heating output
M1	PDS Heater break detect (note 1)
M2	PDS Current monitoring (note 2)
Triac	
T1	Fitted unconfigured
TH	Heating output
TU	Valve raise output
DC control (Isolated)	
D3	Fitted unconfigured
H6	0-20mA heating
H7	4-20mA heating
C6	0-20mA cooling
C7	4-20mA cooling
DC retran. (Isolated)	
Select from Table A	

Output 2

XX	Not fitted
Relay: 2-pin	
R1	Fitted unconfigured
RC	Cooling output
RH	Heating output
RW	Valve lower output
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 & low alarms 1 & 2
Logic output	
L1	Fitted unconfigured
LC	Cooling output
LH	Heating output
Logic input	
AM	Auto manual select
S2	Setpoint 2 select
AC	Alarm ack/reset
EH	Integral hold
SB	Standby mode
SR	PDS Remote SP select
M5	CTX mode 5 current I/P
Triac	
T1	Fitted unconfigured
TC	Cooling output
TH	Heating output
TW	Valve lower output

Output 3

XX	Not fitted
Relay	
RF	Fitted unconfigured
RH	Heating output
RC	Cooling output
FH	High alarm 3
FL	Low alarm 3
DB	Dev. band alarm 3
DL	Dev. low alarm 3
DH	Dev. high alarm 3
AL	High & low alarms 3 & 4
PDS Alarms	
LF	Heater break detect
HF	Current monitoring heater break
SF	Current monitoring SSR failure

Output 4

XX	Not fitted
Relay	
RF	Fitted unconfigured
RH	Heating output
RC	Cooling output
FH	High alarm 4
FL	Low alarm 4
DB	Dev. band alarm 4
DL	Dev. low alarm 4
DH	Dev. high alarm 4
AL	High & low alarms 3 & 4
PDS Alarms	
LF	Heater break detect
HF	Current monitoring heater break
SF	Current monitoring SSR failure

10 Amp Output

XX	Not fitted
R5	Fitted unconfig'd
RH	Heating output

Comms

2XX	Not fitted
Modbus protocol	
2YM	2-wire RS485
2FM	4-wire RS422
2AM	RS232
DeviceNet®	
2DN	DeviceNet
EI-Bisynch protocol	
2YE	2-wire RS485
2FE	4-wire RS422
2AE	RS232
PDS input	
2RS	Setpoint input

Manual

XXX	No manual
ENG	English
FRA	French
GER	German
NED	Dutch
SPA	Spanish
SWE	Swedish
ITA	Italian

Configuration coding (optional)

Sensor input	Setpoint Min	Setpoint Max	Display Units	Digital Input 1	Digital Input 2	Options: Control	Options: Power	Options: Cooling
	note 3	note 3		Omit for 2216	Omit for 2216			

Sensor Input

		Min	°C	Max
Standard Sensor Inputs				
J	J Thermocouple	-210		1200
K	K Thermocouple	-200		1372
T	T Thermocouple	-200		400
L	L Thermocouple	-200		900
N	N Thermocouple-Nicrosil/Nisil	-200		1300
R	R Thermocouple-Pt/Pt13%Rh	-50		1700
S	S Thermocouple-Pt /Pt10%Rh	-50		1768
B	B Thermocouple-Pt/Pt30%Rh -6%Rh	0		1820
P	Platinel II Thermocouple	0		1369
Z	RTD/PT100 DIN 43760	-200		850
Factory Downloaded Input		**Min**	**°C**	**Max**
C	C Thermocouple - W5%Re/W26%Re (Hoskins)	0		2319
D	D Thermocouple - W3%Re/W25%Re	0		2399
E	E Thermocouple	-250		1000
1	Ni/Ni18%Mo Thermocouple	0		1399
2	Pt20%Rh/Pt40%Rh Thermocouple	0		1870
3	W/W26%Re (Engelhard) Thermocouple	0		2000
4	W/W26%Re (Hoskins) Thermocouple	0		2010
5	W5%Re/W26%Re (Engelhard) Thermocouple	10		2300
6	W5%Re/W26%Re (Bucose) Thermocouple	0		2000
7	Pt10%Rh/Pt40%Rh Thermocouple	200		1800
8	Exergen K80 I.R. pyrometer	-45		650
Process Inputs (Scaled to setpoint min and max)		**Min**	**°C**	**Max**
M	-9.99 to 80.00mV linear	-999		9999
Y	0 to 20mA linear (note 4)	-999		9999
A	4 to 20mA linear (note 4)	-999		9999
W	0 to 5Vdc linear	-999		9999
G	1 to 5Vdc linear	-999		9999
V	0 to 10Vdc linear	-999		9999

Display Units

C	Celsius
F	Fahrenheit
K	Kelvin
X	Linear input

Digital Input 1 & 2

XX	No function
AM	Manual select
SR	PDS Remote setpoint select
S2	Second setpoint
EH	Integral hold
AC	Alarm acknowledge
SB	Standby mode
M5	CTX mode 5 current input (input 1 only)

Options

Control action	
XX	Reverse acting (std)
DP	Direct acting
Power feedback	
XX	Enabled on logic, relay & triac heating outputs
PD	Feedback disabled
Cooling options	
XX	Linear cooling
CF	Fan cooling
CW	Water cooling

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

Note 2. PDS current monitoring will transmit the power demand signal to a TE10S Solid State Relay and read back load current and open and short circuit alarms.

Note 3. Setpoint limits: Include the decimal position required in the displayed value. Up to one for temperature inputs, up to two for process inputs.

Note 4. An external 1% current sense resistor is supplied as standard. If greater accuracy is required, a 0.1% 2.49Ω can be ordered as part no. SUB2K/249R.1.

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