

# 2200e Series Temperature and Process Controllers



## Ideal for

- extrusion with optimized fan, or oil cooling
- ovens and furnaces
- cold stores

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

The 2216e is also available as a DIN rail mounting unit.

**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.

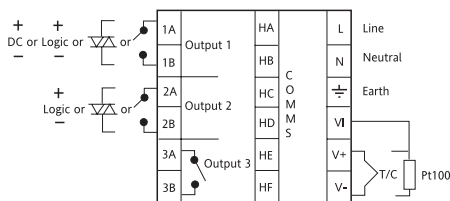
**Digital communications** with industry standard protocols including Modbus® and DeviceNet® are available for easy connection to supervisory control and data logging systems.

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

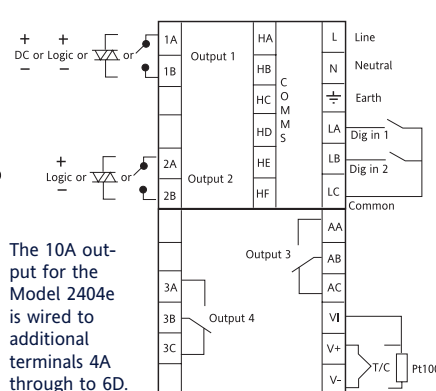
**Eliminate ammeters** by using Eurotherm's advanced load current monitoring facility. Heater current may be displayed and also open or short circuit faults detected. See page 3-50 for more information.

## 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 103D

Model 2208e: 48W x 96H x 103D

Model 2204e: 96W x 96H x 103D

### Control modes:

PID or On/Off or motorized valve

### Supply voltages:

85-264Vac, 10.0 watts maximum

### 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:

NEMA 4X

# 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	Output 1	Output 2	Output 3	Output 4	10 Amp Output
2216e 48x48mm unit 2208e 48x96mm unit 2204e 96x96mm unit	XX Not fitted <b>Relay: 2-pin</b> 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 <b>Logic</b> L1 Fitted unconfigured LH Heating output M1 PDS Heater break detect (note 1) M2 PDS Current monitoring (note 2) <b>Triac</b> T1 Fitted unconfigured TH Heating output TU Valve raise output <b>DC control (Isolated)</b> D3 Fitted unconfigured H6 0-20mA heating H7 4-20mA heating C6 0-20mA cooling C7 4-20mA cooling <b>DC retran. (Isolated)</b> Select from Table A	XX Not fitted <b>Relay: 2-pin</b> 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 <b>Logic output</b> L1 Fitted unconfigured LC Cooling output LH Heating output <b>Logic input</b> AM Auto manual select S2 Setpoint 2 select AC Alarm ack/reset EH Integral hold SB Standby mode SR PDS Remote SP select MS CTX mode 5 current I/P <b>Triac</b> T1 Fitted unconfigured TC Cooling output TH Heating output TW Valve lower output	XX Not fitted <b>Relay</b> 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 <b>PDS Alarms</b> LF Heater break detect HF Current monitoring heater break SF Current monitoring SSR failure	XX Not fitted <b>Relay</b> 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 <b>PDS Alarms</b> LF Heater break detect HF Current monitoring heater break SF Current monitoring SSR failure	XX Not fitted R5 Fitted unconfigured RH Heating output
Function					
CC PID Control NF On/off control VC Motorized Valve control AL Alarm unit					
Supply Voltage					
VH 85-264Vac					
Comms					
2XX Not fitted <b>Modbus protocol</b> 2YM 2-wire RS485 2FM 4-wire RS422 2AM RS232 <b>DeviceNet®</b> 2DN DeviceNet <b>EI-Bisynch protocol</b> 2YE 2-wire RS485 2FE 4-wire RS422 2AE RS232 <b>PDS input</b> 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	Control	Options Power	Cooling
		note 3	note 3		Omit for 2216	Omit for 2216			

Sensor Input	Setpoint Min	Setpoint Max
<b>Standard Sensor Inputs</b>	Min	Max
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
<b>Factory Downloaded Input</b>	Min	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
<b>Process Inputs (Scaled to setpoint min and max)</b>	Min	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
MS CTX mode 5 current input (input 1 only)

Options
<b>Control action</b>
XX Reverse acting (std)
DP Direct acting
<b>Power feedback</b>
XX Enabled on logic, relay & triac heating outputs
PD Feedback disabled
<b>Cooling options</b>
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.