

# 3200 Series

## Temperature/ Process Controllers

Improve process efficiency, product quality and minimise waste

The innovative range of 3200 controllers offer precision control of temperature and other process variables together with many advanced features not normally found in this class of controller.

The emphasis is on ease of use. A simple 'Quick Start' code is used to configure all the functions essential for controlling your process. This includes input sensor type, measurement range, control options, and alarms, making 'Out the Box' operation truly achievable. In operator mode every parameter has a scrolling text message describing its function and is available in English, German, French, Spanish or Italian. More advanced features are configured using Eurotherm iTools, a PC based configuration wizard which is an easy to use and instructive guide to all the functions in the controller.

### Heater current monitoring

A current transformer input provides display of the heater current and a health check on the load. Partial load failure, heater open circuit and SSR faults are detected and displayed as scrolling alarm messages as well as providing an alarm output. On the 3208 and 3204 a front panel ammeter displays the heater current.



- 8 Segment programmer
- Heater failure detection
- Current monitoring
- Internal timer
- Scrolling text messages
- Recipes
- Modbus comms
- Modbus SP retransmission
- Analogue retransmission
- Remote setpoint
- Help text
- Type approved to EN14597 TR
- Multi-language support (English, French, German, Spanish and Italian)

### Setpoint programmer

Heat treatment profiles can be programmed using the 8-segment programmer. Holdback, at the beginning of each segment can be used to guarantee the soak periods. A digital event output can be triggered in any segment to initiate actions within the process.

### Custom text messaging

Custom messages can be created with Eurotherm iTools and downloaded to the 3200 to display when an event, alarm or process condition occurs. This provides the operator with good visibility of the status of the process.

Control Optimise Simplify

**Eurotherm®**  
by **Schneider Electric**

Remote setpoint

An option exists for the 3200 to have a Remote Analogue Input. This can be either volts or mA and is used to allow the setpoint to be generated by a master controller or PLC.

Recipes

Using Eurotherm iTools, recipes can be created that may be used to change the operating parameters of the 3200 simply by selecting a new recipe using the 3200 HMI or digital input. This is very useful where multiple products are processed using the same controller but require different parameters to be set.

Timer

An internal timer is configurable as an interval timer, delay timer or to provide a soft start for hot runner control.

Setpoint retransmission

Sending the setpoint or other parameters from the 3200 to slave devices can be achieved either using conventional analogue communications or using Master Modbus communications. Master Modbus in the 3200 allows a broadcast of a single parameter to the network.

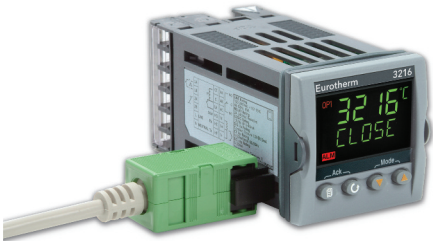
A typical application is a setpoint being retransmitted to a number of slave controllers in a multi-zone furnace.

Modbus communications

All units support both EIA232 and 2-wire EIA485 communications using the Modbus protocol. The 3216 supports 4-wire EIA485.

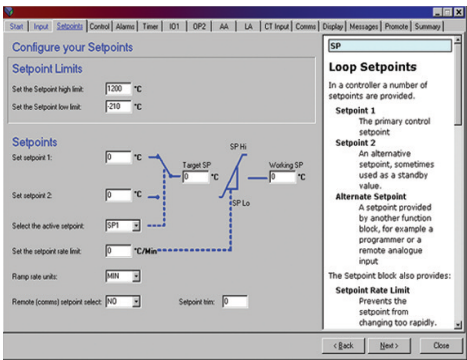
Configuration adaptor

Eurotherm iTools configuration to all 3200 controllers can be achieved by using a USB configuration adaptor. It provides Eurotherm iTools with the ability to communicate with and configure devices without the need for any power being connected.



Eurotherm iTools wizard

Used to simplify the set up of 3200 series controllers. The wizard guides the user through the configuration process with interactive help and graphical demonstrations of features.



Specification

General

Environmental performance

|                     |            |  |
|---------------------|------------|--|
| Temperature limits: | Operation: | 0 to 55°C  |
|                     | Storage:   | -10 to 70°C  |
| Humidity limits:    | Operation: | 5 to 90% RH non condensing                                 |
|                     | Storage:   | 5 to 90% RH non condensing                                 |
| Panel sealing:      |            | IP65, Nema 12  |
| Shock:              |            | BS EN61010   |
| Vibration:          |            | 2g peak, 10 to 150Hz                                       |
| Altitude:           |            | <2000 metres   |
| Atmospheres:        |            | Not suitable for use in explosive or corrosive atmosphere* |

Electromagnetic compatibility (EMC)

|                         |            |
|-------------------------|------------|
| Emissions and immunity: | BS EN61326 |
|-------------------------|------------|

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.  
EN14597 TR APPROVAL  
Registration Number TR1229.

Physical

|              |                    |                                       |
|--------------|--------------------|---------------------------------------|
| Dimensions:  | 3216:              | 48W X 48H X 90Dmm                     |
|              | 3208:              | 48W X 96H X 90Dmm                     |
|              | 3204:              | 96W X 96H X 90Dmm                     |
|              | 32h8 (horizontal): | 96W X 48H X 90Dmm                     |
| Weight:      | 3216:              | 250g                                  |
|              | 3208:              | 350g                                  |
|              | 3204:              | 420g                                  |
|              | 32h8 (horizontal): | 350g                                  |
| Panel:       | 3216:              | 1/16 DIN mounting 45W x 45Hmm cut out |
|              | 3208:              | 1/8 DIN mounting 45W x 92Hmm cut out  |
|              | 3204:              | 1/4 DIN mounting 92W x 92Hmm cut out  |
|              | 32h8 (horizontal): | 1/8 DIN mounting 92W x 45Hmm cut out  |
| Panel depth: | All:               | 101mm                                 |

Operator interface

|                   |   |
|-------------------|---|
| Type:             | LCD TN with backlight                   |
| Main PV display:  | 4 digits, green                         |
| Lower display     |   |
| 3216, 3208, 3204: | 5 character starburst, green            |
| 32h8:             | 9 character starburst, green            |
| Status beacons:   | Units, outputs, alarms, active setpoint |

Power requirements

|                   |   |
|-------------------|---|
| 3216:             | 100 to 240V ac, -15%, +10%,<br>48 to 62 Hz, max 6W<br>24V ac, -15%, +10%.<br>24V dc, -15% +20%<br>±5% ripple voltage max 6W |
| 3208, 32h8, 3204: | 100 to 240V ac, -15%, +10%,<br>48 to 62 Hz, max 8W<br>24V ac, -15%, +10%.<br>24V dc, -15% +20%<br>±5% ripple voltage max 8W |

Approvals

|  |   |
|--|---|
|  | CE, cUL listed (file E57766), Gost-R<br>May be field calibrated to control instrument accuracy required in AMS2750E<br>EN14597 TR<br>CCC Exempt |
|--|---|

Transmitter PSU (not 3216)

|            |                          |
|------------|--------------------------|
| Rating:    | 24V dc, >28mA, <33mA     |
| Isolation: | 264V ac double insulated |

Communications

Serial communications option

|                        |   |
|------------------------|---|
| Protocol:              | Modbus RTU slave<br>Modbus RTU Master broadcast (1 parameter) |
| Isolation:             | 264V ac, double insulated                                     |
| Transmission standard: | EIA232 or EIA485 (2-wire)<br>EIA485 (4-wire) on 3216 only     |

## Process variable input

|                               |   |
|-------------------------------|---|
| Calibration accuracy:         | <±0.25% of reading ±1LSD (Note 1)                             |
| Sample rate:                  | 4Hz (250ms)   |
| Isolation:                    | 264V ac double insulation from the PSU and communication      |
| Resolution (µV):              | <0.5µV with 1.6 sec filter                                    |
| Resolution (effective bits):  | >17 bits  |
| Linearisation accuracy:       | < 0.1% of reading   |
| Drift with temperature:       | <50ppm (typical) <100ppm (worst case)                         |
| Common mode rejection:        | 48-62Hz, >-120db  |
| Series mode rejection:        | 48-62Hz, >-93dB   |
| Input impedance:              | 100MΩ   |
| Cold junction compensation:   | >30:1 rejection of ambient change                             |
| External cold junction:       | Reference of 0°C  |
| Cold junction accuracy:       | <±1°C at 25°C ambient   |
| Linear(process) input range:  | -10 to 80mV, 0 to 10V with 100KΩ/806Ω external divider module |
| Thermocouple types:           | K, J, N, R, S, B, L, T, C, custom download (Note 2)           |
| Resistance thermometer types: | 3-wire Pt100 DIN 43760  |
| Bulb current:                 | 0.2mA   |
| Lead compensation:            | No error for 22Ω in all leads                                 |
| Input filter:                 | Off to 59.9s  |
| Zero offset:                  | User adjustable over full range                               |
| User calibration:             | 2-point gain & offset   |

## AA relay

|            |  |
|------------|--|
| Type:      | Form C (changeover)                        |
| Rating:    | Min 100mA@12V dc, max 2A@264V ac resistive |
| Functions: | Control outputs, alarms, events            |

## Current transformer input

|                       |   |
|-----------------------|---|
| Input range:          | 0-50mA rms, 48/62Hz<br>10Ω burden resistor fitted inside module |
| Calibration accuracy: | <1% of reading (Typical),<br><4% of reading (Worst case)        |
| Isolation:            | By using external CT  |
| Input impedance:      | <20Ω  |
| Measurement scaling:  | 10, 25, 50 or 100 Amps  |
| Functions:            | Partial load failure, SSR fault                                 |

## Digital input (DigIn A/B, B not on 3216)

|                  |  |
|------------------|--|
| Contact closure: | Open >600Ω, closed <300Ω   |
| Input current:   | <13mA  |
| Isolation:       | None from PV or system<br>264V ac double insulated from PSU and communications                     |
| Functions:       | Includes alarm acknowledge, SP2 select, manual keylock, timer functions standby select, RSP select |

## Logic I/O module

|               |   |
|---------------|---|
| <b>Output</b> |   |
| Rating:       | ON 12V dc@<44mA,<br>OFF <300mV@100µA  |
| Isolation:    | None from PV or system.<br>264V ac double insulated from PSU and communications |
| Functions:    | Control outputs, alarms, events   |

|                      |  |
|----------------------|--|
| <b>Digital input</b> |  |
| Contact closure:     | Open >500Ω, closed <150Ω   |
| Isolation:           | None from PV or system<br>264V ac double insulated from PSU and communications                     |
| Functions:           | Includes alarm acknowledge, SP2 select, manual keylock, timer functions standby select, RSP select |

## Relay output channels

|            |  |
|------------|--|
| Type:      | Form A (normally open)                     |
| Rating:    | Min 100mA@12V dc, max 2A@264V ac resistive |
| Functions: | Control outputs, alarms, events            |

## Triac output

|            |   |
|------------|---|
| Rating:    | 0.75A (rms) 30 to 264V (rms) resistive load |
| Isolation: | 264V ac double insulated                    |
| Functions: | Control outputs, alarms, events             |

## Analogue output (Note 3)

|                 |                             |
|-----------------|-----------------------------|
| <b>OP1, OP2</b> |                             |
| Rating:         | 0-20mA into <500Ω           |
| Accuracy:       | ± (<1% of Reading + <100µA) |

|             |  |
|-------------|--|
| Resolution: | 13.5 bits  |
| Isolation:  | 264V ac double insulated from PSU and comms<br>Module code C provides full 264V ac double isolated |
| Functions:  | Control outputs, retransmission  |

## OP 3 (not on 3216)

|             |                                 |
|-------------|---------------------------------|
| Rating:     | 0-20mA into <500Ω               |
| Accuracy:   | ±(<0.25% of Reading + <50µA)    |
| Resolution: | 13.6 bits                       |
| Isolation:  | 264V ac double insulated        |
| Functions:  | Control outputs, retransmission |

## Remote setpoint input

|                              |   |
|------------------------------|---|
| Calibration accuracy:        | <±0.25% or reading ±1LSD                  |
| Sample rate:                 | 4Hz (250ms)                               |
| Isolation:                   | 264V ac double insulation from instrument |
| Resolution:                  | <0.5mV (for 0-10V) or <2µA (for 4-20mA)   |
| Resolution (effective bits): | >14bits                                   |
| Drift with temperature:      | <50ppm (typical) <150ppm (worst case)     |
| Common mode refection:       | 48-62Hz, >-120dB                          |
| Series mode rejection:       | 48-62Hz, >-90dB                           |
| Input impedance:             | Voltage: 223KΩ and Current: 2R49          |
| Normal input range:          | 0 to 10V and 4 to 20mA                    |
| Max input range:             | -1V to 11V and 3.36mA to 20.96mA          |

## Software features

|                       |                                      |
|-----------------------|--------------------------------------|
| <b>Control</b>        |                                      |
| Number of loops:      | 1                                    |
| Loop update:          | 250ms                                |
| Control types:        | PID, ON/OFF, VP                      |
| Cooling types:        | Linear, fan, oil, water              |
| Modes:                | Auto, manual, standby, forced manual |
| Overshoot inhibition: | High, low                            |

|                    |  |
|--------------------|--|
| <b>Alarms</b>      |  |
| Number:            | 4  |
| Type:              | Absolute high & low, deviation high, low or band, rate of change |
| Latching:          | Auto or manual latching, non-latching, event only                |
| Output assignment: | Up to 4 conditions can be assigned to one O/P                    |

|                             |  |
|-----------------------------|--|
| <b>Other status outputs</b> |  |
| Functions:                  | Including sensor break, manual mode, timer status, loop break, heater diagnostics, program event |
| Output assignment:          | Up to 4 conditions can be assigned to one O/P  |

|                            |   |
|----------------------------|---|
| <b>Setpoint programmer</b> |   |
| Program function:          | 1 program x 8 segments with 1 event output (Note 4) |
| Start mode:                | Servo from PV or SP                                 |
| Power fail recovery:       | Continue at SP or Ramp back from PV                 |
| Guaranteed soak:           | Inhibits dwell timing until PV within limits        |

|              |   |
|--------------|---|
| <b>Timer</b> |   |
| Modes:       | Dwell when setpoint reached<br>Delayed control action<br>Soft start limits power below PV threshold |

|                        |   |
|------------------------|---|
| <b>Current monitor</b> |   |
| Alarm types:           | Partial load failure, over current, SSR short circuit, SSR open circuit |
| Indication type:       | Numerical or ammeter  |

|                        |  |
|------------------------|--|
| <b>Custom messages</b> |  |
| Number:                | 15 scrolling text messages                               |
| No of characters:      | 127 characters per message max                           |
| Languages:             | English, German, French, Spanish, Italian                |
| Selection:             | Active on any parameter status using conditional command |

|                |   |
|----------------|---|
| <b>Recipes</b> |   |
| Number:        | 5 recipes with 38 parameters                |
| Selection:     | HMI interface, communications or digital IO |

|              |  |
|--------------|--|
| <b>Notes</b> |  |
| 1.           | Calibration accuracy quoted over full ambient operating range and for all input linearisation types. |
| 2.           | Contact Eurotherm for details of availability of custom downloads for alternative sensors.           |
| 3.           | Voltage output can be achieved by external adaptor.  |
| 4.           | By using recipes five SP programs can be stored.   |

Order Code Hardware/options coding

1

2

3

4

5

6

7

8

9

10

11

12

| Basic Product |                           |
|---------------|---------------------------|
| 3216          | 48 x 48mm unit            |
| 3208          | 48 x 96mm unit            |
| 32h8          | 96 x 48mm horizontal unit |
| 3204          | 96 x 96mm unit            |

| 1 Function |                            |
|------------|----------------------------|
| CC         | Standard controller        |
| CP         | Standard programmer        |
| VC         | Motorised valve controller |
| VP         | Motorised valve programmer |

| 2 Supply Voltage |            |
|------------------|------------|
| VH               | 85-264V ac |
| VL               | 24V ac/dc  |

| 3 Outputs                          |             |                 |        |
|------------------------------------|-------------|-----------------|--------|
| 3216                               |             |                 |        |
|                                    | OP1         | OP2             |        |
| XXXX                               | None fitted | None fitted     |        |
| LXXX                               | Logic       | None fitted     |        |
| LRXX                               | Logic       | Relay           |        |
| RRXX                               | Relay       | Relay           |        |
| LLXX                               | Logic       | Logic           |        |
| LDXX                               | Logic       | 0-20mA          |        |
| DDXX                               | 0-20mA      | 0-20mA          |        |
| DRXX                               | 0-20mA      | Relay           |        |
| RCXX                               | Relay       | Isolated 0-20mA |        |
| LCXX                               | Logic       | Isolated 0-20mA |        |
| DCXX                               | 0-20mA      | Isolated 0-20mA |        |
| LTXX                               | Logic       | Triac           |        |
| TTXX                               | Triac       | Triac           |        |
| 3208/32h8/3204                     |             |                 |        |
|                                    | OP1         | OP2             | OP3    |
| LRRX                               | Logic       | Relay           | Relay  |
| RRRX                               | Relay       | Relay           | Relay  |
| LLRX                               | Logic       | Logic           | Relay  |
| LRDX                               | Logic       | Relay           | 0-20mA |
| RRDX                               | Relay       | Relay           | 0-20mA |
| DDDX                               | 0-20mA      | 0-20mA          | 0-20mA |
| LLDX                               | Logic       | Logic           | 0-20mA |
| LDDX                               | Logic       | 0-20mA          | 0-20mA |
| DRDX                               | 0-20mA      | Relay           | 0-20mA |
| Not available with Low Voltage PSU |             |                 |        |
| LTRX                               | Logic       | Triac           | Relay  |
| TTRX                               | Triac       | Triac           | Relay  |
| LTDX                               | Logic       | Triac           | 0-20mA |
| TDDX                               | Triac       | 0-20mA          | 0-20mA |
| TTDX                               | Triac       | Triac           | 0-20mA |

| 4 AA Relay (OP4) |            |
|------------------|------------|
| X                | Not fitted |
| R                | Relay      |

| 5 Options Board |                                  |
|-----------------|----------------------------------|
| XXX             | None fitted                      |
| XXL             | Logic input                      |
| XCL             | CT + Logic IP                    |
| 2XL             | RS232 Comms + Logic IP           |
| 4XL             | 2-wire RS485 comms + Logic IP    |
| 2CL             | RS232 Comms CT + Logic IP        |
| 4CL             | 2-wire RS485 Comms CT + Logic IP |
| RCL             | Remote SP CT + Logic IP          |

| 6 Fascia Colour |                        |
|-----------------|------------------------|
| G               | Green                  |
| S               | Silver                 |
| W               | Washdown (not 32h8/04) |

| 7 Product Language |         |
|--------------------|---------|
| ENG                | English |
| FRA                | French  |
| GER                | German  |
| SPA                | Spanish |
| ITA                | Italian |

| 8 Manual Language |         |
|-------------------|---------|
| ENG               | English |
| FRA               | French  |
| GER               | German  |
| SPA               | Spanish |
| ITA               | Italian |

| 9 Warranty |          |
|------------|----------|
| XXXXX      | Standard |
| WL005      | Extended |

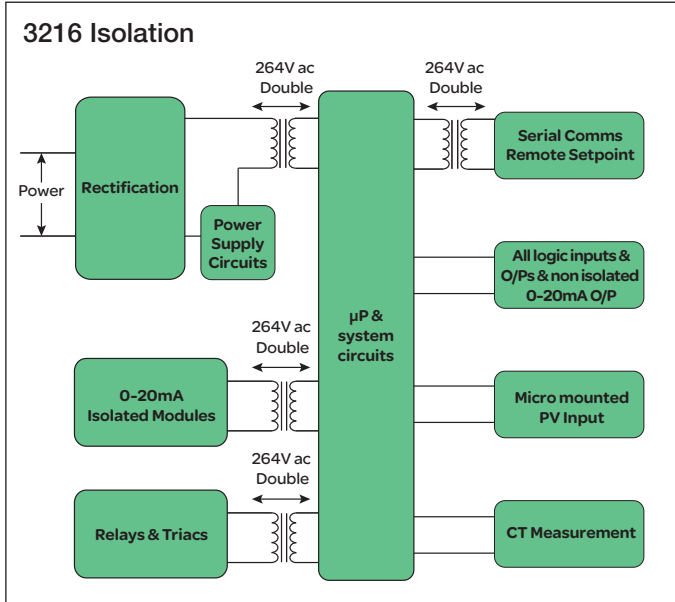
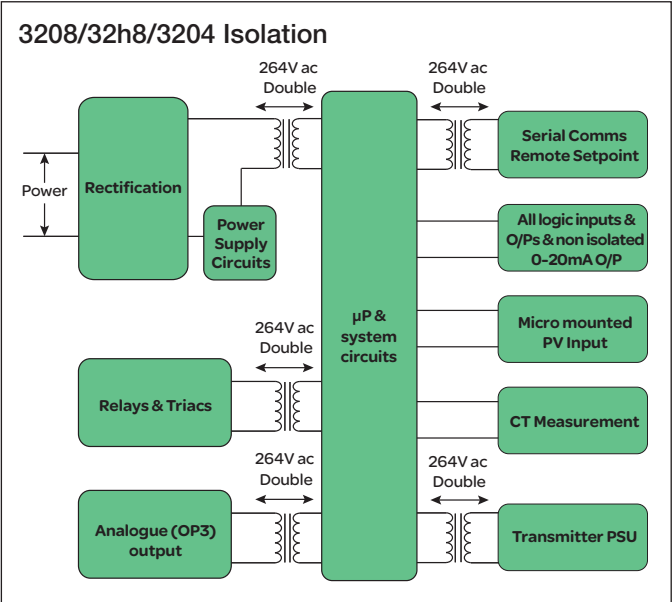
| 10 Certificates |                                 |
|-----------------|---------------------------------|
| XXXXX           | None                            |
| CERT1           | Certificate of Conformity       |
| CERT2           | Factory Calibration certificate |

| 11 Custom Label |      |
|-----------------|------|
| XXXXX           | None |

| 12 Specials and Accessories |                               |
|-----------------------------|-------------------------------|
| XXXXX                       | None                          |
| RES250                      | 250R resistor for 0-5V dc OP  |
| RES500                      | 500R resistor for 0-10V dc OP |

3200 Accessories

|                     |                          |
|---------------------|--------------------------|
| HA029714            | Installation guide       |
| HA027986            | Engineering manual       |
| SUB35/ACCESS/249R.1 | 2.49R Precision resistor |
| CTR100000/000       | 10A Current transformer  |
| CTR200000/000       | 25A Current transformer  |
| CTR400000/000       | 50A Current transformer  |
| CTR500000/000       | 100A Current transformer |
| ITTOOLS/NONE/USB    | USB configuration kit    |
| SUB21/IV10          | 0-10V input adaptor      |





## Optional quick start code (Optional)

|   |   |   |   |   |   |   |                     |                     |    |
|---|---|---|---|---|---|---|---------------------|---------------------|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8                   | 9                   | 10 |
|   |   |   |   |   |   |   | 3208/h8<br>/O4 only | 3208/h8<br>/O4 only |    |

### 1 Input Type

| Thermocouple |               |
|--------------|---------------|
| B            | Type B        |
| J            | Type J        |
| K            | Type K        |
| L            | Type L        |
| N            | Type N        |
| R            | Type R        |
| S            | Type S        |
| T            | Type T        |
| C            | Custom/Type C |
| RTD          |               |
| P            | Pt100         |
| Linear       |               |
| M            | 0-80mV        |
| 2            | 0-20mA        |
| 4            | 4-20mA        |
| X            | Unconfigured  |

### 2 Setpoint Limits

| Full PV Range |                  |
|---------------|------------------|
| C             | Deg C full range |
| F             | Deg F full range |
| Centigrade    |                  |
| 0             | 0 to 100 deg C   |
| 1             | 0 to 200 deg C   |
| 2             | 0 to 400 deg C   |
| 3             | 0 to 600 deg C   |
| 4             | 0 to 800 deg C   |
| 5             | 0 to 1000 deg C  |
| 6             | 0 to 1200 deg C  |
| 7             | 0 to 1400 deg C  |
| 8             | 0 to 1600 deg C  |
| 9             | 0 to 1800 deg C  |
| Fahrenheit    |                  |
| G             | 2 to 212 deg F   |
| H             | 32 to 392 deg F  |
| J             | 32 to 752 deg F  |
| K             | 32 to 1112 deg F |
| L             | 32 to 1472 deg F |
| M             | 32 to 1832 deg F |
| N             | 32 to 2192 deg F |
| P             | 32 to 2552 deg F |
| R             | 32 to 2912 deg F |
| T             | 32 to 3272 deg F |
| X             | Unconfigured     |

### 3 Output 1 (OP1)

| XX                                | Unconfigured         |
|-----------------------------------|----------------------|
| Relay, DC, Triac or Logic outputs |                      |
| Control                           |                      |
| H                                 | Heat (PID)           |
| C                                 | Cool (PID)           |
| J                                 | Heat (On/off)        |
| K                                 | Cool (On/off)        |
| Alarm output                      |                      |
| Energised in alarm                |                      |
| 0                                 | High alarm           |
| 1                                 | Low alarm            |
| 2                                 | Deviation high       |
| 3                                 | Deviation low        |
| 4                                 | Deviation band       |
| Alarm output                      |                      |
| De-energised in alarm             |                      |
| 5                                 | High alarm           |
| 6                                 | Low alarm            |
| 7                                 | Deviation high       |
| 8                                 | Deviation low        |
| 9                                 | Deviation band       |
| DC outputs                        |                      |
| Control                           |                      |
| H                                 | 4-20mA heating       |
| C                                 | 4-20mA cooling       |
| J                                 | 0-20mA heating       |
| K                                 | 0-20mA cooling       |
| Retransmission                    |                      |
| D                                 | 4-20mA setpoint      |
| E                                 | 4-20mA Process value |
| F                                 | 4-20mA output        |
| N                                 | 0-20mA setpoint      |
| Y                                 | 0-20mA Process value |
| Z                                 | 0-20mA output        |
| Logic input                       |                      |
| W                                 | Alarm acknowledge    |
| M                                 | Manual select        |
| R                                 | Timer/Prog Run       |
| L                                 | Keylock              |
| P                                 | Setpoint 2 select    |
| T                                 | Timer/prog Reset     |
| U                                 | Remote SP select     |
| V                                 | Recipe 2/1 select    |
| A                                 | Remote up button     |
| B                                 | Remote down button   |
| G                                 | Time/prog Run/reset  |
| I                                 | Timer/prog Hold      |
| Q                                 | Standby select       |

### 4 Output 2 (OP2)

| XX                                | Unconfigured         |
|-----------------------------------|----------------------|
| Relay, DC, Triac or Logic outputs |                      |
| Control                           |                      |
| H                                 | Heat (PID)           |
| C                                 | Cool (PID)           |
| J                                 | Heat (On/off)        |
| K                                 | Cool (On/off)        |
| Alarm output                      |                      |
| Energised in alarm                |                      |
| 0                                 | High alarm           |
| 1                                 | Low alarm            |
| 2                                 | Deviation high       |
| 3                                 | Deviation low        |
| 4                                 | Deviation band       |
| Alarm output                      |                      |
| De-energised in alarm             |                      |
| 5                                 | High alarm           |
| 6                                 | Low alarm            |
| 7                                 | Deviation high       |
| 8                                 | Deviation low        |
| 9                                 | Deviation band       |
| DC outputs                        |                      |
| Control                           |                      |
| H                                 | 4-20mA heating       |
| C                                 | 4-20mA cooling       |
| J                                 | 0-20mA heating       |
| K                                 | 0-20mA cooling       |
| Retransmission                    |                      |
| D                                 | 4-20mA setpoint      |
| E                                 | 4-20mA Process value |
| F                                 | 4-20mA output        |
| N                                 | 0-20mA setpoint      |
| Y                                 | 0-20mA Process value |
| Z                                 | 0-20mA output        |

### 5 AA Relay (OP4)

| XX                                | Unconfigured   |
|-----------------------------------|----------------|
| Relay, DC, Triac or Logic outputs |                |
| Control                           |                |
| H                                 | Heat (PID)     |
| C                                 | Cool (PID)     |
| J                                 | Heat (On/off)  |
| K                                 | Cool (On/off)  |
| Alarm output                      |                |
| Energised in alarm                |                |
| 0                                 | High alarm     |
| 1                                 | Low alarm      |
| 2                                 | Deviation high |
| 3                                 | Deviation low  |
| 4                                 | Deviation band |
| Alarm output                      |                |
| De-energised in alarm             |                |
| 5                                 | High alarm     |
| 6                                 | Low alarm      |
| 7                                 | Deviation high |
| 8                                 | Deviation low  |
| 9                                 | Deviation band |

### 6 CT Input Scaling

|    |            |
|----|------------|
| XX | Not fitted |
| 1  | 10 Amps    |
| 2  | 25 Amps    |
| 5  | 50 Amps    |
| 6  | 100 Amps   |

### 7-8 Dig Input A, Dig Input B

|   |                     |
|---|---------------------|
| X | Unconfigured        |
| W | Alarm acknowledge   |
| M | Manual select       |
| R | Timer/Prog Run      |
| L | Keylock             |
| P | Setpoint 2 select   |
| T | Timer/prog Reset    |
| U | Remote SP select    |
| V | Recipe 2/1 select   |
| A | Remote up button    |
| B | Remote down button  |
| G | Time/prog Run/reset |
| I | Timer/prog Hold     |
| Q | Standby select      |

### 9 Output 3 (OP3)

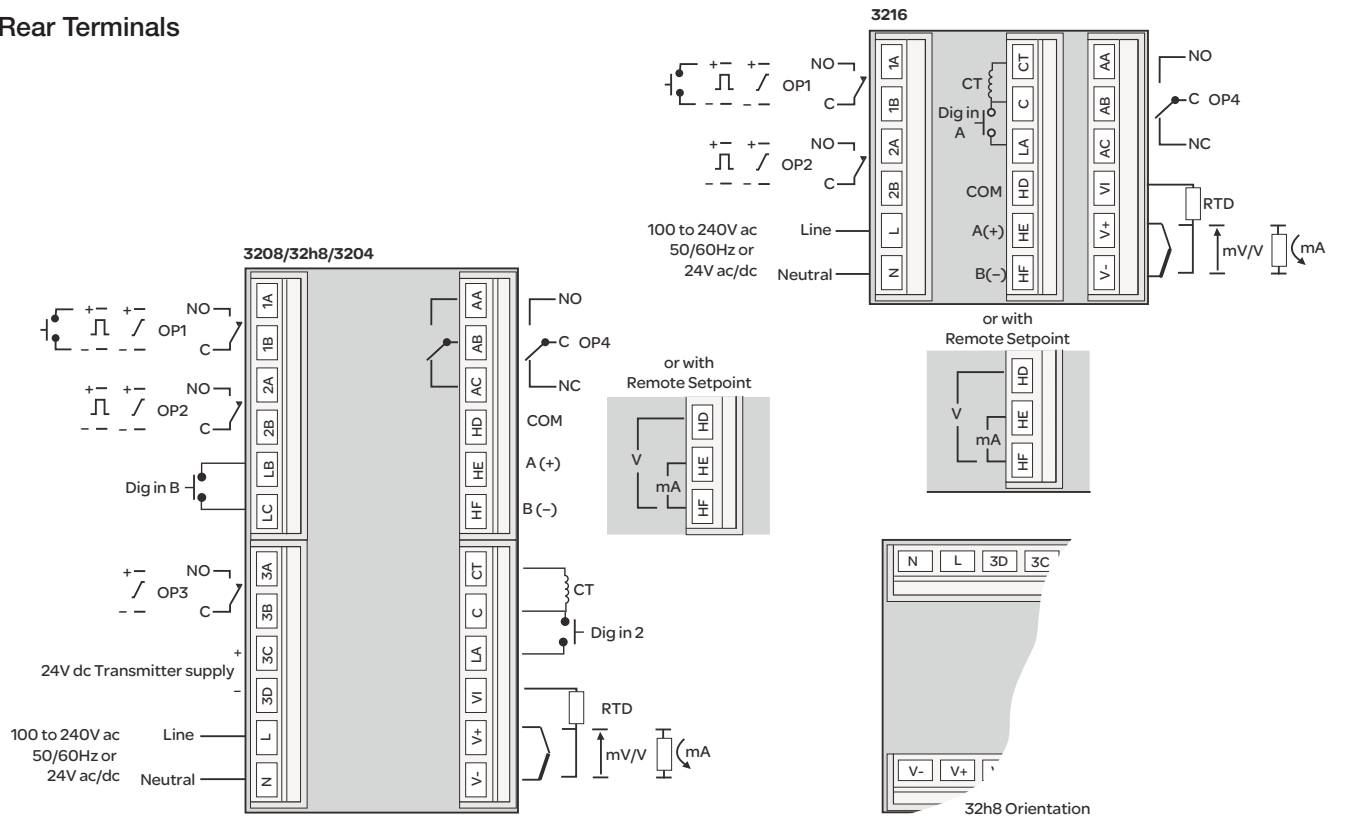
| XX                                | Unconfigured         |
|-----------------------------------|----------------------|
| Relay, DC, Triac or Logic outputs |                      |
| Control                           |                      |
| H                                 | Heat (PID)           |
| C                                 | Cool (PID)           |
| J                                 | Heat (On/off)        |
| K                                 | Cool (On/off)        |
| Alarm output                      |                      |
| Energised in alarm                |                      |
| 0                                 | High alarm           |
| 1                                 | Low alarm            |
| 2                                 | Deviation high       |
| 3                                 | Deviation low        |
| 4                                 | Deviation band       |
| Alarm output                      |                      |
| De-energised in alarm             |                      |
| 5                                 | High alarm           |
| 6                                 | Low alarm            |
| 7                                 | Deviation high       |
| 8                                 | Deviation low        |
| 9                                 | Deviation band       |
| DC outputs                        |                      |
| Control                           |                      |
| H                                 | 4-20mA heating       |
| C                                 | 4-20mA cooling       |
| J                                 | 0-20mA heating       |
| K                                 | 0-20mA cooling       |
| Retransmission                    |                      |
| D                                 | 4-20mA setpoint      |
| E                                 | 4-20mA Process value |
| F                                 | 4-20mA output        |
| N                                 | 0-20mA setpoint      |
| Y                                 | 0-20mA Process value |
| Z                                 | 0-20mA output        |

### 10 Lower Display

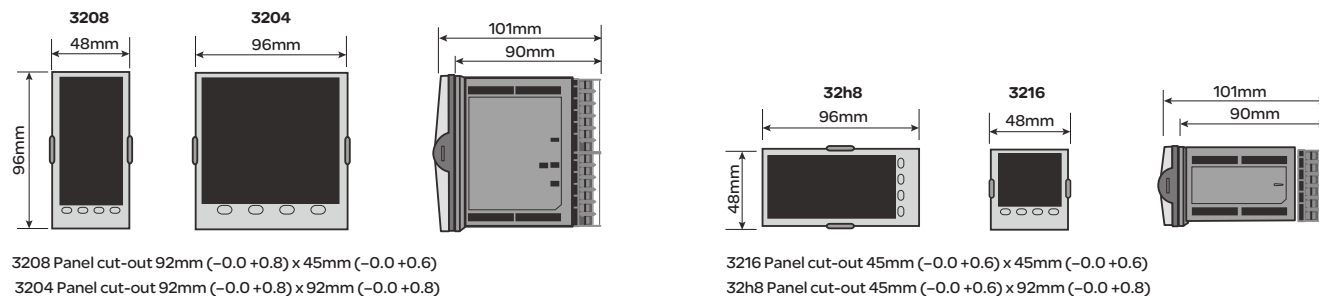
|   |                          |
|---|--------------------------|
| X | Unconfigured             |
| T | Setpoint                 |
| S | Target setpoint          |
| P | Output power %           |
| R | Time remaining           |
| E | Elapsed time             |
| 1 | 1st alarm setpoint       |
| D | Dwell/ramp - Time/target |
| C | SP with output meter     |
| M | SP with ammeter          |
| A | Load amps                |
| N | None                     |



## Rear Terminals



## Mechanical Details



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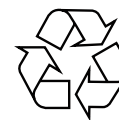
Scan for local  
contacts

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