

# 3200i

MODEL



## Indicators and Alarm Units Specification Sheet

- **Universal input**
- **Strain gauge input**
- **Changeover relay**
- **PV Retransmission**
- **FM/DIN 3440 Approval**
- **Scrolling text messages**
- **Parameter help text**
- **Recipes**
- **Modbus comms**

Eurotherm's range of 3200i indicators offer accurate indication of temperature and process measurements. Process interlocks, including overtemperature furnace limits, are implemented using relay output channels.

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

### Universal input

A wide range of temperature and process inputs can be selected using the front panel push buttons without the need for any hardware change. This provides easy on-site set up.

### Strain gauge input

Melt pressure and weigh scale inputs can be energised from an internal 10Vdc transducer supply. An automatic shunt calibration routine is provided to remove zero and span offsets. The display on the 32h8i can show a full 5 digit value.

### Process alarms

Four internal alarm setpoints are provided. They can be used to energise up to three relay outputs, which can be latched if required. A special mode, known as 'Alarm Blocking', is available which ensures that when the unit is powered up an alarm must first enter a good state before the alarm becomes active. This is particularly useful for low alarms which can be blocked while the process is warming up.

### Custom text messaging

Custom messages can be created with iTools and downloaded to the 3200i to display when an event, alarm or process condition occurs. This provides the operator with good visibility of what is happening in the process and provides messages that they can understand and act upon.

## Recipes

iTools recipes can be created that can be used to change the operating parameters of the 3200i simply by selecting a recipe using the 3200i push buttons. This is very useful where multiple products are processed but require different parameters to be set. It can also be used to change the set-up of an indicator therefore allowing one unit to be used as a spare for multiple applications.

## Analogue retransmission

The measured process value can be retransmitted as either a mA or voltage signal with a selection of outputs including 4-20mA and 0-10Vdc. In the 32h8i this signal is isolated from all other electronics within the unit.

## Digital communication

All units support both EIA232 and EIA485 communication using the Modbus protocol as a slave device. It is also possible to digitally retransmit one parameter using a Modbus broadcast to all other Modbus devices on the network.

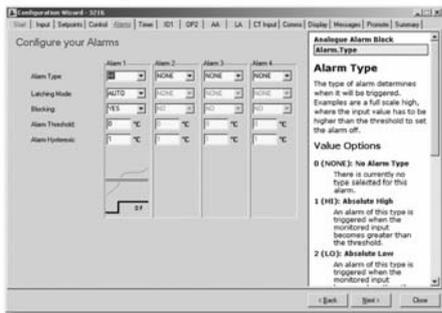
## Configuration adaptor

PC configuration to all 3200i indicators can be achieved by using a configuration adaptor. It provides iTools with the ability to communicate with and configure devices without any power being connected.



## iTools wizard

Used to simplify the set up of 3200i series indicators, 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 4X   |
| 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 rate 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            | 3216i: | 1/16 DIN                 |
|                           | 3204i: | 1/4 DIN                  |
|                           | 32h8i: | 1/8 DIN, horizontal      |
| Dimensions and weight     | 3216i: | 48W x 48H x 90D mm, 250g |
|                           | 3204i: | 96W x 96H x 90D mm, 420g |
|                           | 32h8i: | 96W x 48H x 90D mm, 350g |
| Panel cut-out dimensions: | 3216i: | 45W x 45H mm             |
|                           | 3204i: | 92W x 92H mm             |
|                           | 32h8i: | 92W x 45H mm             |

### Operator interface

|                 |  |
|-----------------|--|
| Type:           | LCD TN with backlight                      |
| Main PV display | 3216i, 3204i: 4 digits, green              |
|                 | 32h8i: 5 digits, green or red              |
| Lower display   | 3216i, 3204i: 5 character starburst, green |
|                 | 32h8i: 9 character starburst, green        |
| Status beacons: | Units, outputs, alarms                     |

### Power requirements

|               |   |
|---------------|---|
| 3216i:        | 85 to 264Vac, -15%, +10%, 48 to 62 Hz, max 6W 24Vac, -15%, +10%, 24Vdc, -15% +20% ±5% ripple voltage max 6W |
| 32h8i, 3204i: | 85 to 264Vac, -15%, +10%, 48 to 62 Hz, max 8W 24Vac, -15%, +10%, 24Vdc -15% +20% ±5% ripple voltage max 8W  |

### Approvals

CE, cUL listed (file E57766), Gost, FM, DIN 3440

### Transmitter PSU (not 3216i)

|            |                         |
|------------|-------------------------|
| Rating:    | 24Vdc, 20mA             |
| Isolation: | 264Vac double insulated |

### Communications

|                              |   |
|------------------------------|---|
| Serial communications option |   |
| Protocol:                    | Modbus RTU slave<br>Modbus RTU Master broadcast (1 parameter) |
| Isolation:                   | 264Vac, double insulated                                      |
| Transmission standard:       | EIA232 or EIA485 (2 wire)                                     |

## Process variable input

|                               |   |
|-------------------------------|---|
| Calibration accuracy:         | <±0.25% of reading ±1LSD <sup>(1)</sup>                                       |
| Sample rate:                  | 9Hz(110ms)  |
| Isolation:                    | 264Vac double insulation from the PSU and communication                       |
| Resolution (µV):              | <0.5µV with 1.6s filter (mV range)<br><0.25mV with 1.6s filter (Volts range)  |
| 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 (200KΩ on volts range C)  |
| 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 requires 100KΩ/806Ω external divider module (not 32h8i) |
| Thermocouple types:           | K, J, N, R, S, B, L, T, C, custom download <sup>(2)</sup>                     |
| Resistance thermometer types: | 3-wire Pt100 DIN 43760  |
| Bulb current:                 | 0.2mA   |
| Lead compensation:            | No error for 22 ohms in all leads   |
| Input filter:                 | Off to 100s   |
| Zero offset:                  | User adjustable over full range   |
| User calibration:             | 2-point gain & offset   |

### Notes

- (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

## Strain gauge input (32h8i)

|                              |   |
|------------------------------|---|
| Input type:                  | 350Ω Bridge   |
| Connection:                  | 4 or 6 wire (6 uses internal shunt)                     |
| Calibration accuracy:        | <0.1% of full scale                                     |
| Sample time:                 | 9hz (110ms)   |
| Isolation:                   | 264Vac double isolation from the PSU and communications |
| Excitation:                  | 10Vdc +7%   |
| Sensitivity:                 | 1.4 to 4mV/V  |
| Input span:                  | -27% to +127% of full scale (approx.                    |
| -10mV to +5mV):              |   |
| Zero balance:                | + 25% of full scale                                     |
| Tare:                        | + 25% of full scale                                     |
| Resolution (mV):             | 0.3mV/V(typical) with 1.6s filter                       |
| Resolution (effective bits): | 14.3 bits   |
| Drift with temperature:      | <100ppm/°C of full scale                                |
| Common mode rejection:       | 48-62Hz, >-120db  |
| Series mode rejection:       | 48-62Hz, >-60db   |
| Input filter:                | Off to 100s   |

## AA relay

|            |  |
|------------|--|
| Type:      | Form C (changeover)                      |
| Rating:    | Min 100mA@12Vdc, max 2A@264Vac resistive |
| Functions: | Alarms, events                           |

## Digital input A/B (B not on 3216i, A not on 32h8i with SG or SD)

|                  |   |
|------------------|---|
| Contact closure: | Open >600Ω, closed <300Ω  |
| Input current:   | <13mA   |
| Isolation:       | None from PV or system<br>264Vac double insulated from PSU and communications                   |
| Functions:       | Includes alarm acknowledge, keylock, alarm inhibit, freeze display, tare, auto zero, peak reset |

## Logic I/O module (3216i only)

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

## Digital input

|                  |   |
|------------------|---|
| Contact closure: | Open >500Ω, closed <150Ω  |
| Isolation:       | None from PV or system<br>264Vac double insulated from PSU and communications                   |
| Functions:       | Includes alarm acknowledge, keylock, alarm inhibit, freeze display, tare, auto zero, peak reset |

## Relay output channels

|            |  |
|------------|--|
| Type       | 3216i: Form A (normally open)<br>32h8i, 3204i: Form C (changeover) |
| Rating:    | Min 100mA@12vdc, max 2A@264Vac resistive                           |
| Functions: | Alarms, events   |

## Analogue output

|                               |  |
|-------------------------------|--|
| <b>OP1, OP2 (3216i only)</b>  |  |
| Rating:                       | 0-20mA into <500Ω  |
| Accuracy:                     | ± (<0.5% of Reading + <100µA)  |
| Resolution:                   | 11.5 bits  |
| Isolation:                    | None from PV or system.<br>264Vac double insulated from PSU and communications |
| Functions:                    | Retransmission   |
| <b>OP 3 (not on 3216i)</b>    |  |
| Isolation:                    | 264Vac double insulated  |
| Functions:                    | Retransmission   |
| Current Output                |  |
| Rating:                       | 0-20mA into <500Ω  |
| Accuracy:                     | ±(<0.25% of Reading + <50µA)   |
| Resolution:                   | 13.6 bits  |
| Voltage Output (not on 3204i) |  |
| Rating:                       | 0-10V into >500Ω   |
| Accuracy:                     | ±(<0.25% of Reading + <25mV)   |
| Resolution:                   | 13.6 bits  |

## Software features

### Alarms

|                    |   |
|--------------------|---|
| Number:            | 4   |
| Type:              | Absolute high & low, Rate of change (rising or falling) |
| Latching:          | Auto or manual latching, non-latching, event only       |
| Output assignment: | Up to four conditions can be assigned to one output     |

### Other status outputs

|                    |  |
|--------------------|--|
| Functions:         | Including sensor break, power fail, new alarm, pre-alarm |
| Output assignment: | Up to four conditions can be assigned to one output      |

### Custom messages

|                   |  |
|-------------------|--|
| 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 |

### Recipes

|            |   |
|------------|---|
| Number:    | 5 recipes with 19 parameters                |
| Selection: | HMI interface, communications or digital IO |

### Transducer calibration

|                    |                              |
|--------------------|------------------------------|
| Calibration types: | Shunt, load cell, comparison |
| Other features:    | Auto-zero, tare              |

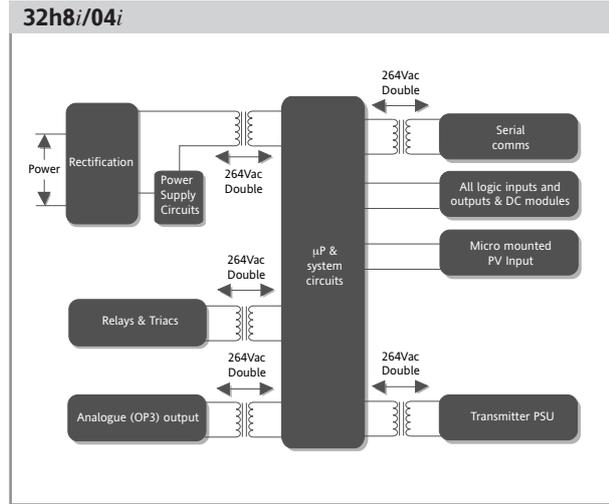
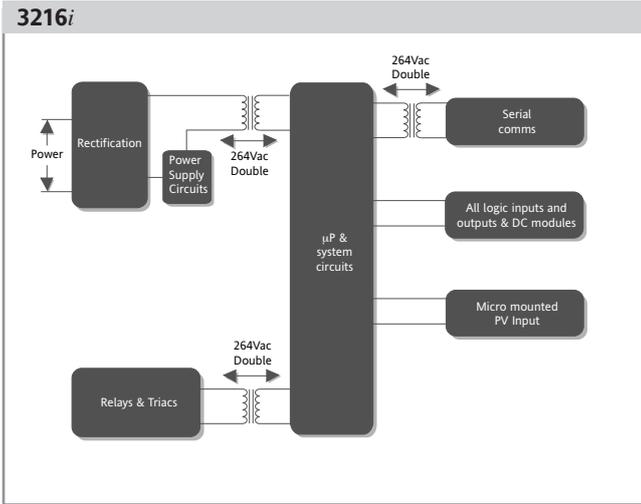
### Other features

|                         |  |
|-------------------------|--|
| Display colour (32h8i): | Upper display selectable green or red or change on alarm |
| Scrolling text:         | Parameter help, custom messages                          |
| Display filter:         | Off to zero last 2 digits                                |
| Peak monitor:           | Stores high and low values                               |

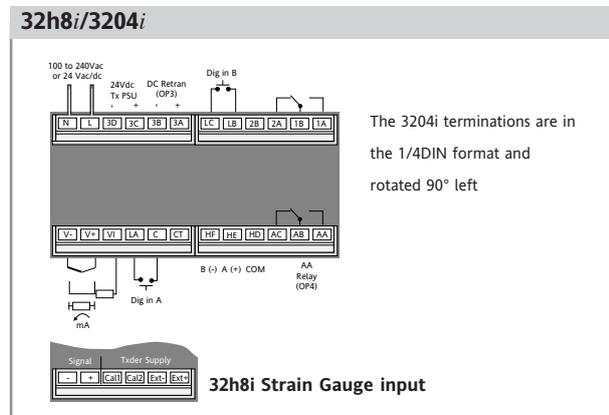
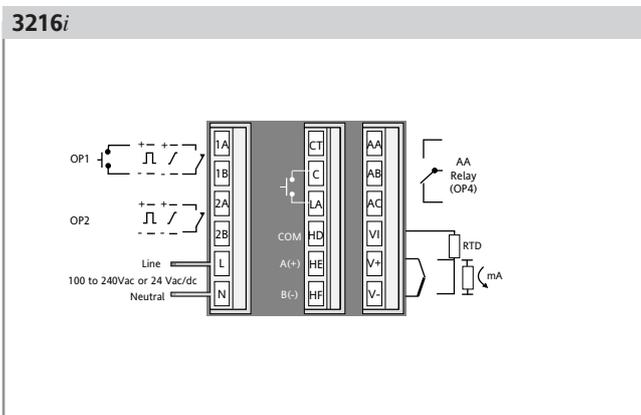
### FM/DIN 3440

|                         |  |
|-------------------------|--|
| Alarm 1 configuration:  | Absolute hi or lo, de-energised in alarm<br>Latching output on Form C (AA) Relay<br>All alarms active on sensor break and power fail |
| Alarm setpoint:         | Adjustment protection via password   |
| Configuration security: | FM/DIN 3440 option prevents reconfiguration of alarm config  |

## Isolation diagrams



## Rear terminals



## Ordering code

### Hardware coding only

| Model Number | Function | Power Supply | Outputs OP1 OP2 OP3 | AA Relay | Options | Fascia Colour | Product Language | Manual Language | Input Adaptor | Warranty | Calibration Certification | Custom Label | Specials & Accessories |
|--------------|----------|--------------|---------------------|----------|---------|---------------|------------------|-----------------|---------------|----------|---------------------------|--------------|------------------------|
|--------------|----------|--------------|---------------------|----------|---------|---------------|------------------|-----------------|---------------|----------|---------------------------|--------------|------------------------|

| Model Number  | 3216i/ OP1, OP2, OP3   | Options          | Manual Language  | Custom Label                       |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
|---|--|------------------|--|------------------------------------|--|--|-------------|------------|------------|---------------|-------------|--|---|---------------------|--------------------------------|--|---|---|-----------|---|--|-------------|-----------------------------|-----------------------------|-------------|------------------------------|--|-------|------|
| 3216i 1/16 DIN unit<br>32h8i 1/8 DIN horizontal unit<br>3204i 1/4 DIN unit  | <table border="1"> <thead> <tr> <th>OP1</th> <th>OP2</th> </tr> </thead> <tbody> <tr> <td>LRXX Logic</td> <td>Relay</td> </tr> <tr> <td>RRXX Relay</td> <td>Relay</td> </tr> <tr> <td>LDXX Logic</td> <td>Analogue</td> </tr> <tr> <td>DRXX Analogue</td> <td>Relay</td> </tr> </tbody> </table> | OP1              | OP2  | LRXX Logic                         | Relay                                      | RRXX Relay   | Relay       | LDXX Logic | Analogue   | DRXX Analogue | Relay       | <table border="1"> <tbody> <tr> <td>XXX Not fitted</td> </tr> <tr> <td>XXL Digital input A</td> </tr> <tr> <td>2XL RS232 plus digital input A</td> </tr> <tr> <td>4XL RS485 plus digital Dig in A</td> </tr> <tr> <td>32h8i /SG or /SD</td> </tr> <tr> <td>XXX Not fitted</td> </tr> <tr> <td>2XX RS232</td> </tr> <tr> <td>4XX RS485</td> </tr> </tbody> </table> | XXX Not fitted  | XXL Digital input A | 2XL RS232 plus digital input A | 4XL RS485 plus digital Dig in A  | 32h8i /SG or /SD  | XXX Not fitted                                | 2XX RS232 | 4XX RS485   | <table border="1"> <tbody> <tr> <td>ENG English</td> </tr> <tr> <td>FRA French</td> </tr> <tr> <td>GER German</td> </tr> <tr> <td>SPA Spanish</td> </tr> <tr> <td>ITA Italian</td> </tr> </tbody> </table> | ENG English | FRA French                  | GER German                  | SPA Spanish | ITA Italian                  | <table border="1"> <tbody> <tr> <td>XXXXX</td> <td>None</td> </tr> </tbody> </table> | XXXXX | None |
| OP1   | OP2  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| LRXX Logic  | Relay  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| RRXX Relay  | Relay  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| LDXX Logic  | Analogue   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| DRXX Analogue   | Relay  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XXX Not fitted  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XXL Digital input A   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| 2XL RS232 plus digital input A  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| 4XL RS485 plus digital Dig in A   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| 32h8i /SG or /SD  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XXX Not fitted  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| 2XX RS232   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| 4XX RS485   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| ENG English   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| FRA French  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| GER German  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| SPA Spanish   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| ITA Italian   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XXXXX   | None   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| Function  | 32h8i/3204i/ OP1, OP3  | Fascia Colour    | Input Adaptor  | Specials and Accessories           |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| <table border="1"> <tbody> <tr> <td>AL Standard Unit</td> </tr> <tr> <td>FM FM Alarm Unit</td> </tr> <tr> <td>DN DIN 3440 Alarm Unit</td> </tr> <tr> <td>SG Strain Gauge Input (32h8i only)</td> </tr> <tr> <td>SD Strain Gauge with DIN 3440 (32h8i only)</td> </tr> </tbody> </table> | AL Standard Unit   | FM FM Alarm Unit | DN DIN 3440 Alarm Unit   | SG Strain Gauge Input (32h8i only) | SD Strain Gauge with DIN 3440 (32h8i only) | <table border="1"> <thead> <tr> <th>OP1</th> <th>OP3</th> </tr> </thead> <tbody> <tr> <td>RXXX Relay</td> <td>None</td> </tr> <tr> <td>RXDX Relay</td> <td>Analogue</td> </tr> </tbody> </table>           | OP1         | OP3        | RXXX Relay | None          | RXDX Relay  | Analogue   | <table border="1"> <tbody> <tr> <td>G Green</td> </tr> <tr> <td>S Silver</td> </tr> </tbody> </table> | G Green             | S Silver                       | <table border="1"> <tbody> <tr> <td>XX None</td> </tr> <tr> <td>V1 0-10Vdc * mA burden resistor (2.49R, 0.1%)</td> </tr> <tr> <td>A1</td> </tr> </tbody> </table> <p>* Not required for 32h8i.</p> | XX None   | V1 0-10Vdc * mA burden resistor (2.49R, 0.1%) | A1        | <table border="1"> <tbody> <tr> <td>XXXXX</td> <td>None</td> </tr> <tr> <td>RES250</td> <td>250R resistor for 0-5Vdc OP</td> </tr> <tr> <td>RES500</td> <td>500R resistor for 0-10Vdc OP</td> </tr> </tbody> </table> | XXXXX  | None        | RES250                      | 250R resistor for 0-5Vdc OP | RES500      | 500R resistor for 0-10Vdc OP |  |       |      |
| AL Standard Unit  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| FM FM Alarm Unit  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| DN DIN 3440 Alarm Unit  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| SG Strain Gauge Input (32h8i only)  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| SD Strain Gauge with DIN 3440 (32h8i only)  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| OP1   | OP3  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| RXXX Relay  | None   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| RXDX Relay  | Analogue   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| G Green   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| S Silver  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XX None   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| V1 0-10Vdc * mA burden resistor (2.49R, 0.1%)   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| A1  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XXXXX   | None   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| RES250  | 250R resistor for 0-5Vdc OP  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| RES500  | 500R resistor for 0-10Vdc OP   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| Power Supply  | AA Relay   | Product Language | Warranty   | Calibration Certificates           |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| <table border="1"> <tbody> <tr> <td>VH 85-264Vac</td> </tr> <tr> <td>VL 20-29Vac/dc</td> </tr> </tbody> </table>  | VH 85-264Vac   | VL 20-29Vac/dc   | <table border="1"> <tbody> <tr> <td>X Disabled</td> </tr> <tr> <td>R Changeover Relay</td> </tr> </tbody> </table> | X Disabled                         | R Changeover Relay                         | <table border="1"> <tbody> <tr> <td>ENG English</td> </tr> <tr> <td>FRA French</td> </tr> <tr> <td>GER German</td> </tr> <tr> <td>SPA Spanish</td> </tr> <tr> <td>ITA Italian</td> </tr> </tbody> </table> | ENG English | FRA French | GER German | SPA Spanish   | ITA Italian | <table border="1"> <tbody> <tr> <td>XXXXX</td> <td>Standard</td> </tr> <tr> <td>WL005</td> <td>Extended</td> </tr> </tbody> </table>   | XXXXX   | Standard            | WL005                          | Extended   | <table border="1"> <tbody> <tr> <td>XXXXXX</td> <td>None</td> </tr> <tr> <td>CERT1</td> <td>Certificate of Conformity</td> </tr> <tr> <td>CERT2</td> <td>5 Point Factory Calibration</td> </tr> </tbody> </table> | XXXXXX  | None      | CERT1   | Certificate of Conformity  | CERT2       | 5 Point Factory Calibration |                             |             |                              |  |       |      |
| VH 85-264Vac  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| VL 20-29Vac/dc  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| X Disabled  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| R Changeover Relay  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| ENG English   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| FRA French  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| GER German  |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| SPA Spanish   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| ITA Italian   |  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XXXXX   | Standard   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| WL005   | Extended   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| XXXXXX  | None   |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| CERT1   | Certificate of Conformity  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |
| CERT2   | 5 Point Factory Calibration  |                  |  |                                    |  |  |             |            |            |               |             |  |   |                     |                                |  |   |   |           |   |  |             |                             |                             |             |                              |  |       |      |

### Example ordering code

32h8i - SG - VH - RXDX - R - 4XL - S - ENG - ENG - XX - XXXXX - XXXXX - XXXXX - XXXXX

This code describes a Silver fascia 1/8 DIN strain gauge indicator with two relays and one analogue output. 85-264Vac supply. RS485 communications. English language product and manuals.

## Optional quick start code

| Input Type | Display Limits | Decimal Point | PV Colour  | Home Display | Range Low | Range High |
|------------|----------------|---------------|------------|--------------|-----------|------------|
|            |                |               | 32h8i only |              |           |            |

| Input Type   | Display Limits   | PV Colour (32h8i only)  | OP1  |
|--|--|---|--|
| <b>Thermocouple</b><br><b>B</b> Type B<br><b>J</b> Type J<br><b>K</b> Type K<br><b>L</b> Type L<br><b>N</b> Type N<br><b>R</b> Type R<br><b>S</b> Type S<br><b>T</b> Type T<br><b>C</b> Custom/Type C<br><b>RTD</b><br><b>P</b> Pt100<br>Linear<br><b>M</b> 0-80mV<br><b>2</b> 0-20mA<br><b>4</b> 4-20mA<br>32h8i only<br><b>0</b> 0-10Vdc<br><b>1</b> 1-5Vdc<br><b>3</b> 2-10V<br><b>6</b> 0-5V<br>Strain Gauge<br><b>G</b> | <b>X</b> None<br><b>C</b> Deg C full range<br><b>F</b> Deg F full range<br><b>K</b> Kelvin<br><b>P</b> Percentage<br>32h8i only<br>Pressure<br><b>0</b> Pa<br><b>1</b> mPa<br><b>2</b> Kpa<br><b>3</b> Bar<br><b>4</b> mBar<br><b>5</b> PSI<br><b>6</b> Kg/cm <sup>2</sup><br><b>7</b> mmWG<br><b>8</b> inWG<br><b>9</b> mmHG<br><b>A</b> Torr<br>Flow rate<br><b>B</b> L-H<br><b>D</b> L-m<br>General<br><b>E</b> %RH<br><b>G</b> %O <sub>2</sub><br><b>H</b> %CO <sub>2</sub><br><b>J</b> %CP<br><b>L</b> V<br><b>M</b> Amps<br><b>R</b> mA<br><b>T</b> MV<br><b>U</b> Ohm<br><b>W</b> ppm<br><b>Y</b> RPM<br><b>Z</b> m-s | <b>X</b> Not applicable<br><b>G</b> Green<br><b>R</b> Red<br><b>C</b> Change on any alarm. Green to Red<br><b>Home Display</b><br><b>N</b> PV only<br><b>A</b> First Alarm SP only<br><b>1</b> PV + Alarm SP<br><b>2</b> PV + Alarm SP (read only)<br><b>Range Low</b><br>Enter value<br><b>Range High</b><br>Enter value | 3216i only<br><b>Analogue Output</b><br><b>PV Retransmission</b><br><b>1</b> 4-20mA<br><b>2</b> 0-20mA<br><b>Digital Input</b><br><b>W</b> Alarm<br><b>K</b> Keylock<br><b>U</b> Remote UP Button<br><b>D</b> Remote DOWN button<br><b>J</b> Alarm Inhibit<br><b>M</b> Peak Reset<br><b>Y</b> Freeze<br><b>V</b> Displayed PV Recipe 1/2 Select<br><b>Combined with Sensor Break</b><br><b>7</b> High Alarm<br><b>8</b> Low Alarm<br><b>9</b> Rising Rate of Change<br><b>Combined with Power Fail</b><br><b>A</b> High Alarm<br><b>B</b> Low Alarm<br><b>C</b> Rising Rate of Change<br><b>Combined with Sensor Break and Power Fail</b><br><b>E</b> High Alarm<br><b>F</b> Low Alarm<br><b>G</b> Rising Rate of Change |
|  | <b>Decimal Point</b><br><b>0</b> nnnnn<br><b>1</b> nnnn.n<br><b>2</b> nnn.nn<br><b>3</b> nn.nnn } Only on 32h8i<br><b>4</b> n.nnnn   |   |  |

| OP1 | OP2, OP3 | OP4 (AA Relay) | Dig in A           | Dig in B |
|-----|----------|----------------|--------------------|----------|
|     |          |                | Not 32h8i/SG or SD |          |

| OP2 (3216i), OP3 (32h8i, 3204i)   | OP4 (AA Relay)  | Digital Input A (Not 32h8i/SG or SD)  | Digital Input B   |
|---|---|---|---|
| <b>X</b> Unconfigured<br><b>Analogue Output</b><br><b>PV Retransmission</b><br><b>1</b> 4-20mA<br><b>2</b> 0-20mA<br>32h8i/04i only<br><b>3</b> 0-5Vdc<br><b>4</b> 1-5Vdc<br><b>5</b> 0-10Vdc<br><b>6</b> 2-10Vdc<br>3216i only<br><b>Relay or Logic</b><br><b>Output (Alarm 2)</b><br><b>Alarm 2</b><br><b>H</b> High Alarm<br><b>L</b> Low Alarm<br><b>R</b> Rising Rate of Change<br><b>N</b> New Alarm<br><b>O</b> Sensor Break<br><b>P</b> Power Fail<br><b>Combined with Sensor Break</b><br><b>7</b> High Alarm<br><b>8</b> Low Alarm<br><b>9</b> Rising Rate of Change<br><b>Combined with Power Fail</b><br><b>A</b> High Alarm<br><b>B</b> Low Alarm<br><b>C</b> Rising Rate of Change<br><b>Combined with Sensor Break and Power Fail</b><br><b>E</b> High Alarm<br><b>F</b> Low Alarm<br><b>G</b> Rising Rate of Change | <b>X</b> Unconfigured<br><b>H</b> High Alarm<br><b>L</b> Low Alarm<br><b>R</b> Rising Rate of Change<br><b>N</b> New Alarm<br><b>O</b> Sensor Break<br><b>P</b> Power Fail<br><b>Combined with Sensor Break</b><br><b>7</b> High Alarm<br><b>8</b> Low Alarm<br><b>9</b> Rising Rate of Change<br><b>Combined with Power Fail</b><br><b>A</b> High Alarm<br><b>B</b> Low Alarm<br><b>C</b> Rising Rate of Change<br><b>Combined with Sensor Break and Power Fail</b><br><b>E</b> High Alarm<br><b>F</b> Low Alarm<br><b>G</b> Rising Rate of Change | <b>X</b> Unconfigured<br><b>W</b> Alarm<br><b>U</b> Acknowledge<br><b>K</b> Keylock<br><b>U</b> Remote UP Button<br><b>D</b> Remote DOWN button<br><b>J</b> Alarm Inhibit<br><b>M</b> Peak Reset<br><b>Y</b> Freeze<br><b>V</b> Displayed PV Recipe 1/2 Select<br>32h8i Strain Gauge<br><b>T</b> Tare correction<br><b>Z</b> Auto shunt (melt pressure) Calibration | <b>X</b> Unconfigured<br><b>W</b> Alarm<br><b>A</b> Acknowledge<br><b>K</b> Keylock<br><b>U</b> Remote UP Button<br><b>D</b> Remote DOWN button<br><b>J</b> Alarm Inhibit<br><b>M</b> Peak Reset<br><b>Y</b> Freeze<br><b>V</b> Displayed PV Recipe 1/2 Select<br>32h8i Strain Gauge<br><b>T</b> Tare correction<br><b>Z</b> Auto shunt (melt pressure) Calibration |

### 3200i ACCESSORIES

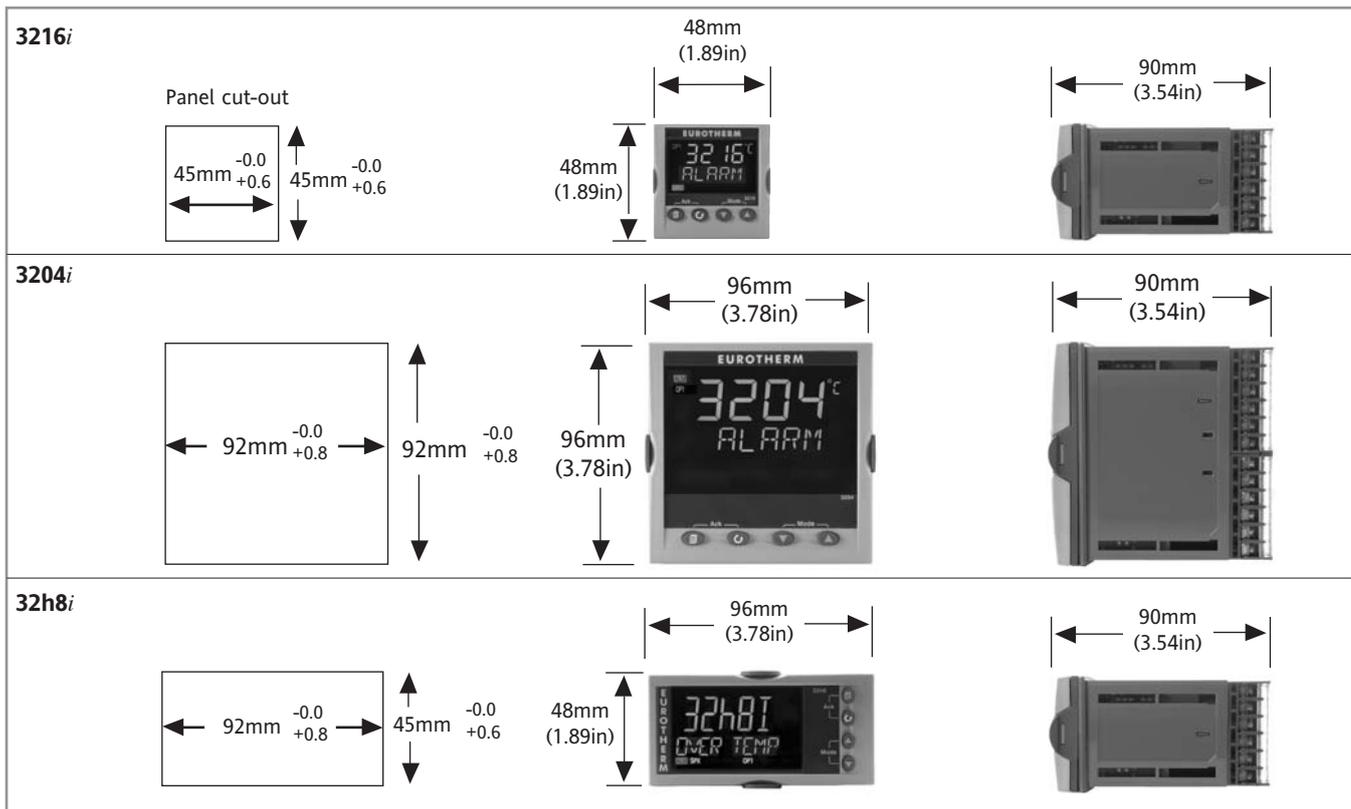
|                          |                     |
|--------------------------|---------------------|
| User guide               | HA029005            |
| Engineering manual       | HA029006            |
| 2.49R Precision resistor | SUB35/ACCESS/249R.1 |
| Configuration clip       | iTools/None/3000CK  |
| 0-10V input adaptor      | SUB21/IV10          |

### Example ordering code (Quick Start)

G - 5 - 0 - R - N - 0 - 5000 - H - 5 - H - X - Z

This code configures the hardware example as a strain gauge input ranged 0-5000 PSI with two high alarm relay outputs. 0-10Vdc retransmission of PV. Digital input for auto-shunt calibration

## Dimensional details



## Eurotherm: International sales and service

Understanding and providing local support is a key part of Eurotherm's 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](mailto:info.au@eurotherm.com)

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

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

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

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

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

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

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

**HONG KONG & CHINA**  
Eurotherm Limited North Point  
T (+85 2) 28733826  
F (+85 2) 28700148  
E [info.hk@eurotherm.com](mailto:info.hk@eurotherm.com)

**Guangzhou Office**  
T (+86 20) 8755 5099  
F (+86 20) 8755 5831  
E [info.cn@eurotherm.com](mailto:info.cn@eurotherm.com)

**Beijing Office**  
T (+86 10) 6567 8506  
F (+86 10) 6567 8509  
E [info.cn@eurotherm.com](mailto:info.cn@eurotherm.com)

**Shanghai Office**  
T (+86 21) 6145 1188  
F (+86 21) 6145 1187  
E [info.cn@eurotherm.com](mailto:info.cn@eurotherm.com)

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

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

**ITALY** Como  
Eurotherm S.r.l.  
T (+39 31) 975111  
F (+39 31) 977512  
E [info.it@eurotherm.com](mailto:info.it@eurotherm.com)

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

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

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

**SWEDEN** Malmo  
Eurotherm AB  
T (+46 40) 384500  
F (+46 40) 384545  
E [info.se@eurotherm.com](mailto:info.se@eurotherm.com)

**SWITZERLAND** Wollerau  
Eurotherm Produkte (Schweiz) AG  
T (+41 44) 7871040  
F (+41 44) 7871044  
E [info.ch@eurotherm.com](mailto:info.ch@eurotherm.com)  
**UNITED KINGDOM** Worthing  
Eurotherm Limited  
T (+44 1903) 268500  
F (+44 1903) 265982  
E [info.uk@eurotherm.com](mailto:info.uk@eurotherm.com)  
[www.eurotherm.co.uk](http://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](mailto:info.us@eurotherm.com)  
[www.eurotherm.com](http://www.eurotherm.com)

ED52

© Copyright Eurotherm Limited 2006

Invensys, Eurotherm, the Eurotherm logo, Chessell, EurothermSuite, Mini8, Eycon 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.