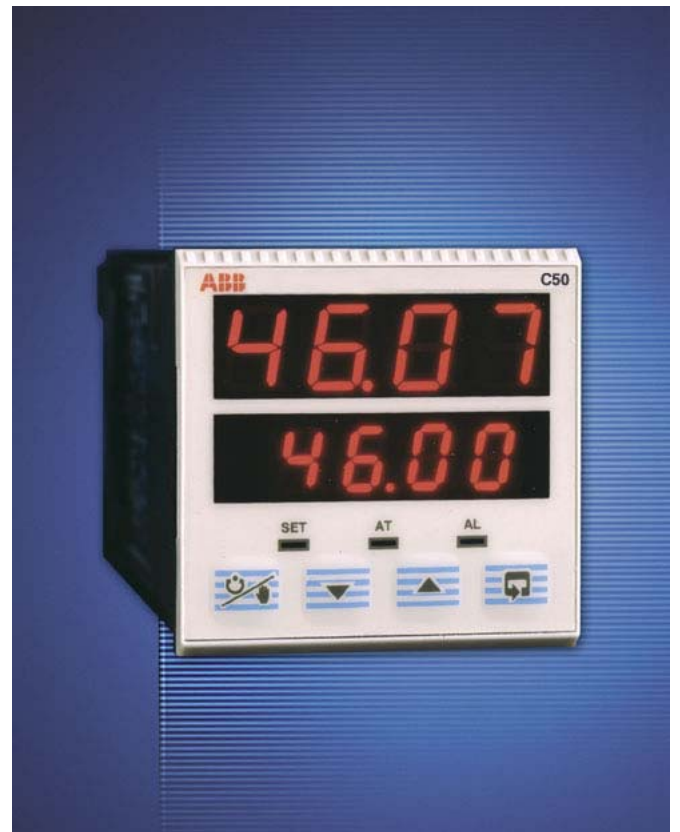


- **High visibility dual 4-digit display**
 - shows set point and process variable
- **Standard relay or logic control output**
 - simple time proportioning or on/off control
- **Optional alarm relay**
 - additional relay to give hi/lo process alarm
- **Universal process input**
 - direct connection for any process signal
- **IP65 (NEMA3) protection and full noise immunity**
 - reliability in the harshest environments
- **NEMA 4X / IP66 construction**
 - hose-down protection
- **One-shot autotune**
 - automatic setting of optimum PID values



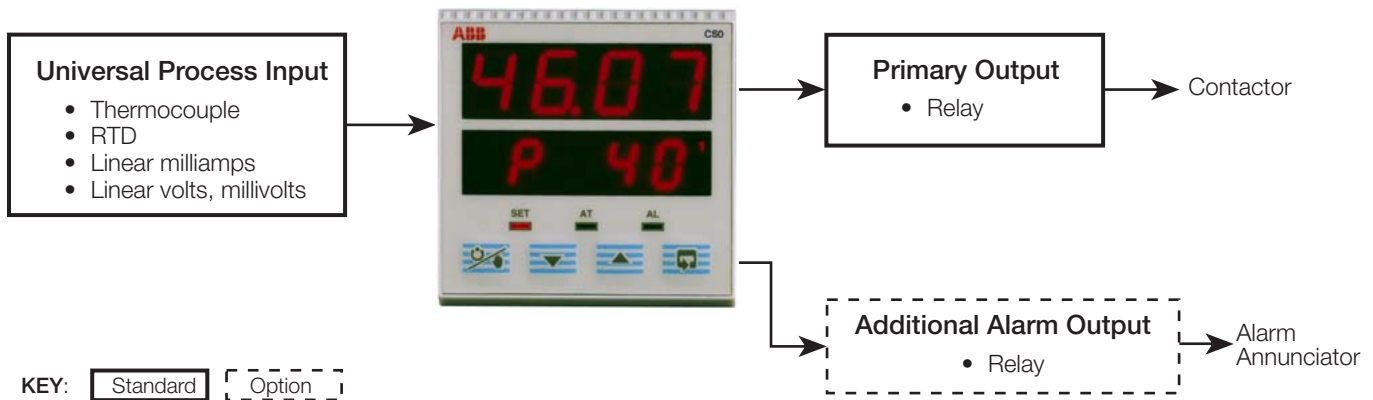
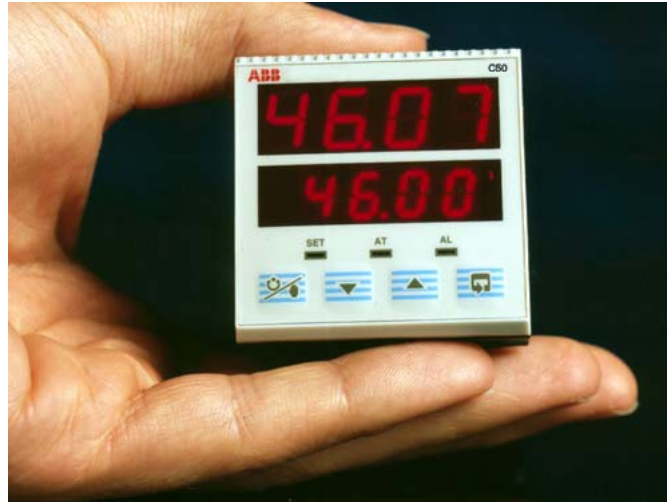
**C50 – the 1/16 DIN controller to suit
your simplest applications**

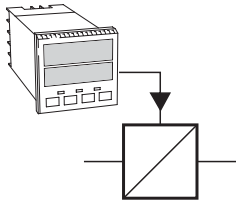
C50

The C50 Controller/Alarm unit is a compact single loop controller, with the capability to measure, indicate and control a variety of process variables.

The unit is ideal for simple PID control, offering On/Off or Time proportioning control with a one shot self-tune facility. The C50 can also act as an independent alarm unit, for example, as an over-temperature safety cutout unit for furnaces or ovens.

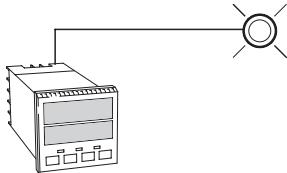
The unit is quickly set up for most process signal inputs and, with IP65 (NEMA3) front panel protection, is suitable for a wide range of applications.





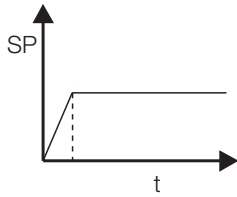
PID Control

The unit's primary relay or logic output can provide a time proportioning PID output, for control of contactors.



Override Alarm

By configuring the relay output as an overrange alarm, the C50 can act as an independent alarm unit, providing protection for your process.



Ramping Set Point

To reduce shock to the process when changing set point, the C50 can be configured to ramp up to the new set point over a preset period of time.

Specification

Summary

PID single loop controller/alarm unit
Autotune Facility
Fully User Configurable
IP65 (NEMA3) Front Face

Operation

Display

High intensity, 7-segment, 2 x 4 red LED display

Size upper 10mm (0.39 in.)
lower 8mm (0.31 in.)

Configuration

User defined via front panel and internal links.

Outputs

Primary output (fitted as standard)

Relay SPDT 2A 120/240V AC

Output functions

User configurable as either:

On/Off control output

Time proportioning PID control output

Physical

Size

48mm (1.89 in.) x 48mm (1.89 in.)
x 110mm (4.33 in.) (depth behind panel)

Weight

<200g (0.44lbs.) approx.

Option

Second relay output, configurable for alarms, meets the specification of the standard relay output.

Electrical

Voltage:

90 to 264 V AC 50/60 Hz

Power consumption:

<4VA

EMC

Emissions and Immunity

Meets requirements of IEC 61326 for an Industrial Environment

Analog Inputs

Single universal process input

Type

Universally Configurable for:
 Thermocouple (THC)
 Resistance Thermometer (RTD)
 Linear Millivolt
 Linear Current
 Linear DC voltage

Input Sampling Rate

1 sample/250ms

Input impedance:

Millivolts/THC/RTD >100MΩ
 Volts >47KΩ
 Current <4.7Ω

Linearizer functions

Automatic linearisation of THC types B, J, K, R, S, T, L, N and RTD Pt100

Broken Sensor protection

For the following options, break detected within two seconds and control outputs DOWN scale to OFF (0% power):

THC, RTD, DC mV, DC Volts (1 to 5V and 2 to 10V), DC mA (4 to 20mA).

Cold junction compensation:

Automatic CJC incorporated as standard.

Input noise rejection

Common mode rejection >120dB at 50/60Hz with balanced lead
 Series mode rejection >500% of span at 50/60Hz

Accuracy

Measurement error <± 0.25% of span ± 1LSD
 Linearizer Typically ±0.2°C
 Display range -1999 to +9999
 CJC accuracy <± 0.05°C /°C change in ambient temperature

Electrical Input Ranges

| Input Type | Min. Value | Max. Value | Min. Value | Max. Value |
|------------|------------|------------|------------|------------|
| mV | 0 | 50 | 10 | 50 |
| V | 0 | 5 | 1 | 5 |
| V | 0 | 10 | 2 | 10 |
| mA | 0 | 20 | 4 | 20 |

Temperature Limits

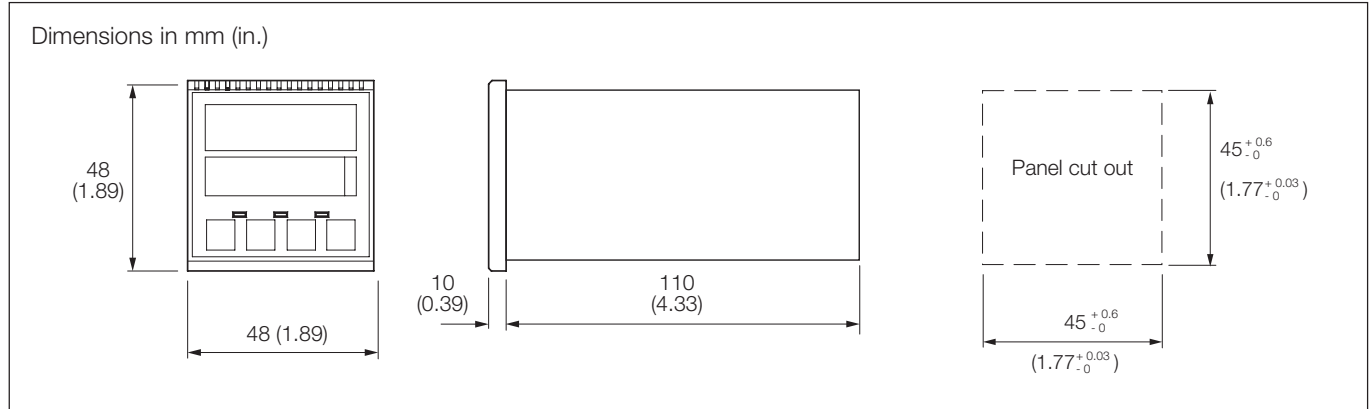
| THC Type Per NBS125 & IEC584 | °C | | °F | |
|------------------------------------|--------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| Type R | 0 | 1650 | 32 | 3002 |
| Type S | 0 | 1649 | 32 | 3000 |
| Type J | 0 | 205.4 | 32 | 401.7 |
| | 0 | 450 | 32 | 842 |
| | 0 | 761 | 32 | 1401 |
| Type T | -200 | 262 | -328 | 503 |
| | 0 | 260.6 | 32 | 501 |
| Type K | -200 | 760 | -328 | 1399 |
| | -200 | 1373 | -328 | 2503 |
| Type L | 0 | 205.7 | 32 | 402.2 |
| | 0 | 450 | 32 | 841 |
| | 0 | 762 | 32 | 1403 |
| Type B | 100 | 1842 | 211 | 3315 |
| Type N | 0 | 1399 | 32 | 2550 |
| | 0 | 800 | 32.0 | 1471 |
| Type RTD per DIN 43760 & IEC751 | -100.9 | 100 | -149.7 | 211.9 |
| | -200 | 206 | -328 | 402 |
| | -100.9 | 537.3 | -149.7 | 999 |
| | 0 | 100.9 | 32 | 213.6 |
| | 0 | 300 | 32 | 571 |
| | 0 | 800 | 32.0 | 1471 |

Note.

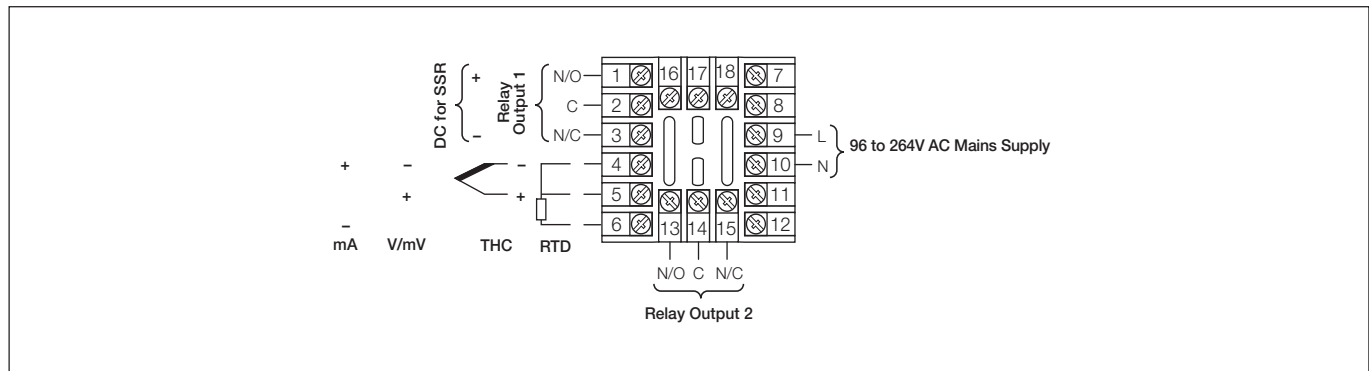
Performance accuracy is not guaranteed below 600°C (112°F) for types B, R and S thermocouples.

RTD, 3-wire platinum, 100Ω with range of 0 to 400Ω.

Overall Dimensions



Electrical Connections



Ordering Information

| C50 1/16 DIN Controller/Alarm Unit | C50 | / | X | X | X | X | X | X | X |
|-------------------------------------|-----|---|---|---|---|---|---|---|-------|
| Language (for manuals only) | | | | | | | | | |
| English | | | | | | | | | |
| French | | | | | | | | | |
| German | | | | | | | | | |
| | | | K | F | D | | | | |
| Input Types | | | | | | | | | |
| Universal | | | | | | | | | 2 |
| Output 1 | | | | | | | | | |
| Relay | | | | | | | | | 1 |
| Output 2 | | | | | | | | | |
| None | | | | | | | | | 0 |
| 1 Relay | | | | | | | | | 1 |
| Programming/Special Features | | | | | | | | | |
| None | | | | | | | | | 0 0 0 |

ABB has Sales & Customer Support
expertise in over 100 countries worldwide

www.abb.com

The Company's policy is one of continuous product
improvement and the right is reserved to modify the
information contained herein without notice.

Printed in UK (01.06)

© ABB 2006



ABB Limited

Howard Road, St Neots
Cambridgeshire
PE19 8EU
UK
Tel: +44 (0)1480 475321
Fax: +44 (0)1480 217948

ABB Inc.

125 E. County Line Road
Warminster
PA 18974
USA
Tel: +1 215 674 6000
Fax: +1 215 674 7183