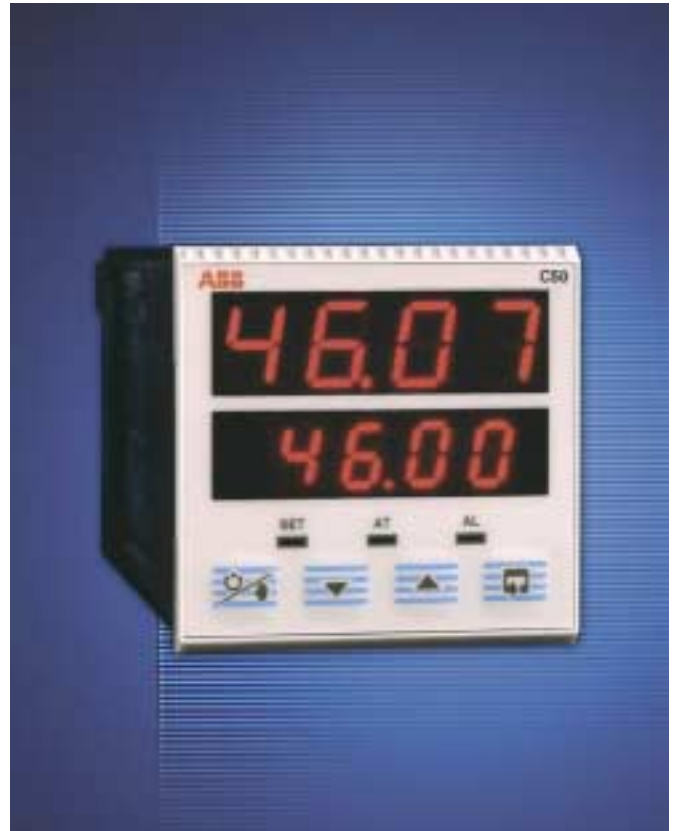




- **High visibility dual 4-digit display**
  - shows set point and process variable
- **Standard relay or logic control output**
  - simple time proportioning or on/off control
- **Optional alarm relay**
  - additional relay to give hi/lo process alarm
- **Universal process input**
  - direct connection 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**

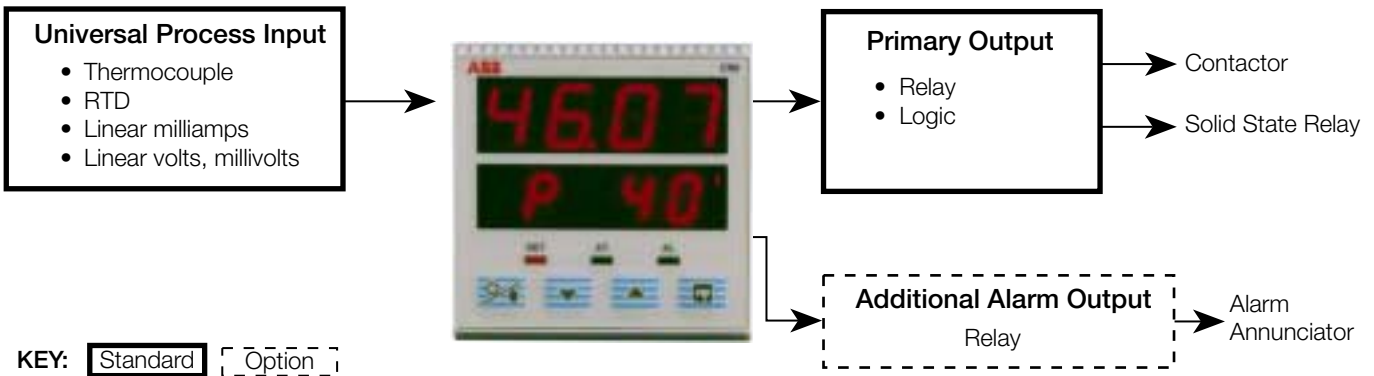


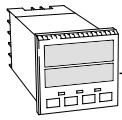
**C50**

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.

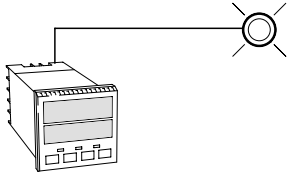
The unit is quickly set up for most process signal inputs and, with IP65 (NEMA3) front panel protection, is suitable for a wide range of applications.





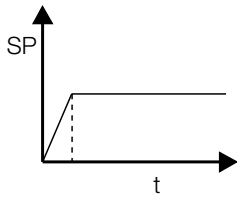
### PID Control

The unit's primary relay or logic output can provide a time proportioning PID output, for control of contactors and solid state relays (SSR).



### 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)

User configurable as either:

Relay:

SPDT 2A 120/240V AC

or

TTL Logic (SSR Drive):

Digital >4.2V DC for

Min load 1k $\Omega$

Not isolated from input

#### 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

## 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 – 5V and 2 – 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.



**Ordering Information**

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

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