



- **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
- **One-shot autotune**
–automatic setting of optimum PID values



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

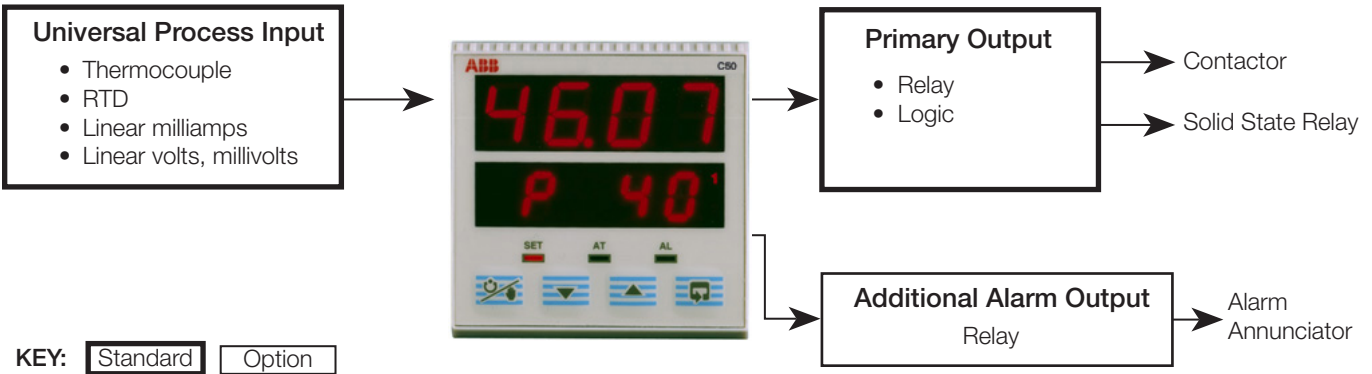
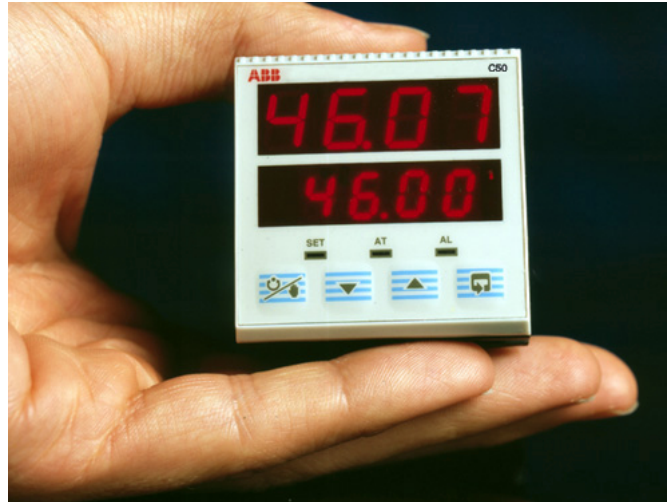


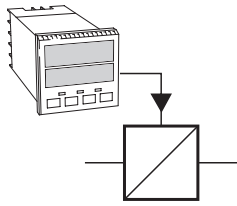
C50

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.

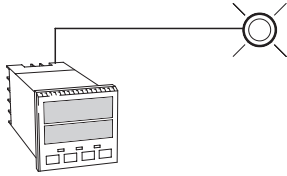
The unit is quickly set up for most process signal inputs and, with IP65 (NEMA3) front panel protection, is suitable for a wide range of applications.





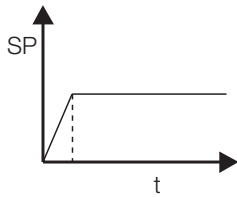
PID Control

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 Ω

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

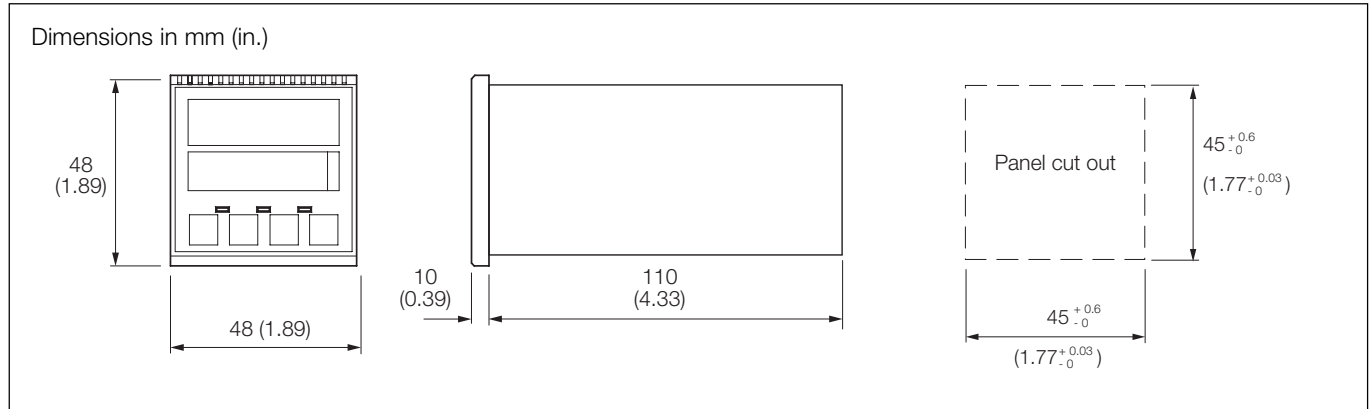
THC Type Per NBS125 & IEC584	°C		°F	
	Min.	Max.	Min.	Max.
Type R	0	1650	32	3002
Type S	0	1649	32	3000
Type J	0	205.4	32	401.7
	0	450	32	842
	0	761	32	1401
Type T	–200	262	–328	503
	0	260.6	32	501
Type K	–200	760	–328	1399
	–200	1373	–328	2503
Type L	0	205.7	32	402.2
	0	450	32	841
	0	762	32	1403
Type 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.

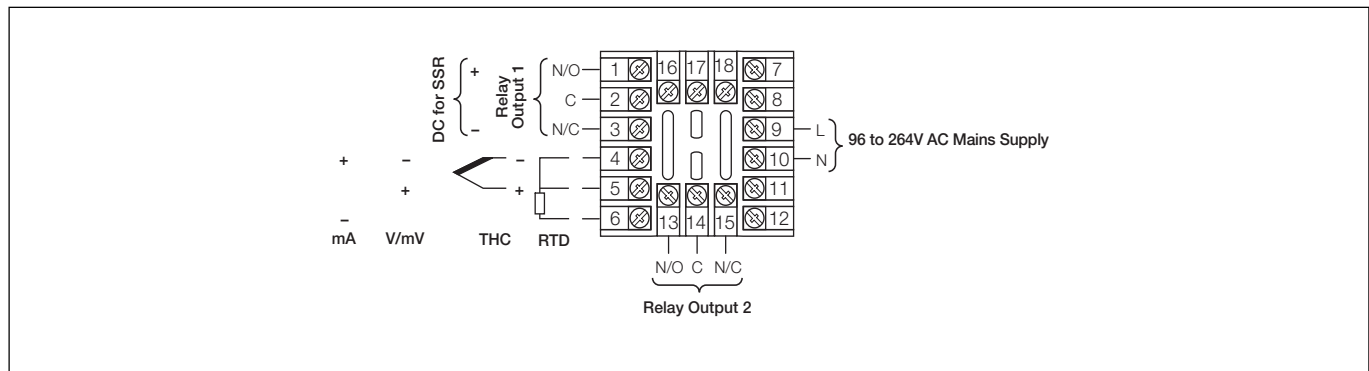
Performance accuracy is not guaranteed below 600°C (112°F) for types B, R and S thermocouples.

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

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		K						
French		F						
German		D						
Input Types								
Universal			2					
Output 1								
Relay/Logic				1				
Output 2								
None						0		
1 Relay						1		
Programming/Special Features								
None							0	0 0

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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