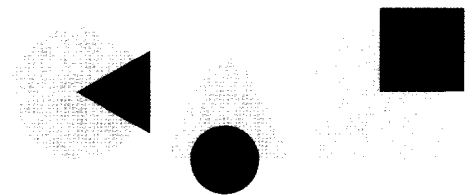
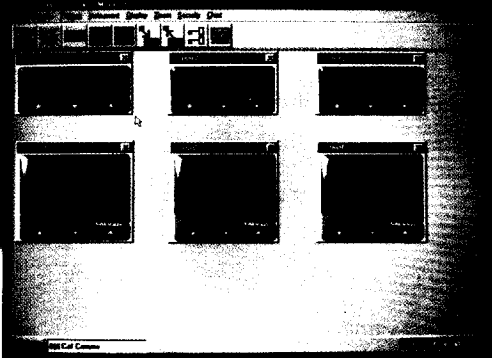
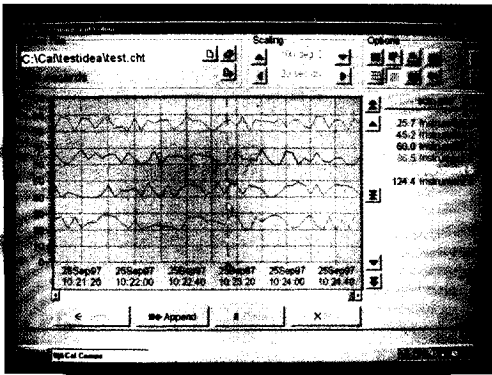


The NEW CAL 3300 and 9300 Autotune Temperature Controllers



CAL Controls
Temperature Controllers

Another step ahead

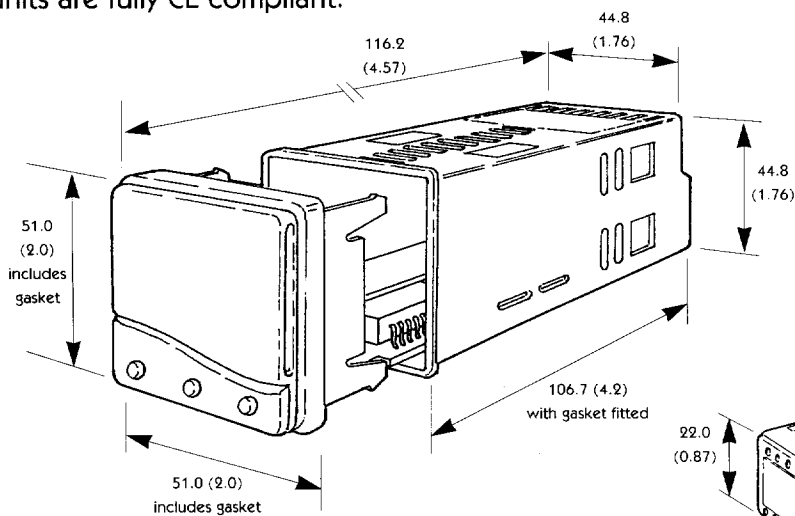
Mechanical

Sleeve Mounting

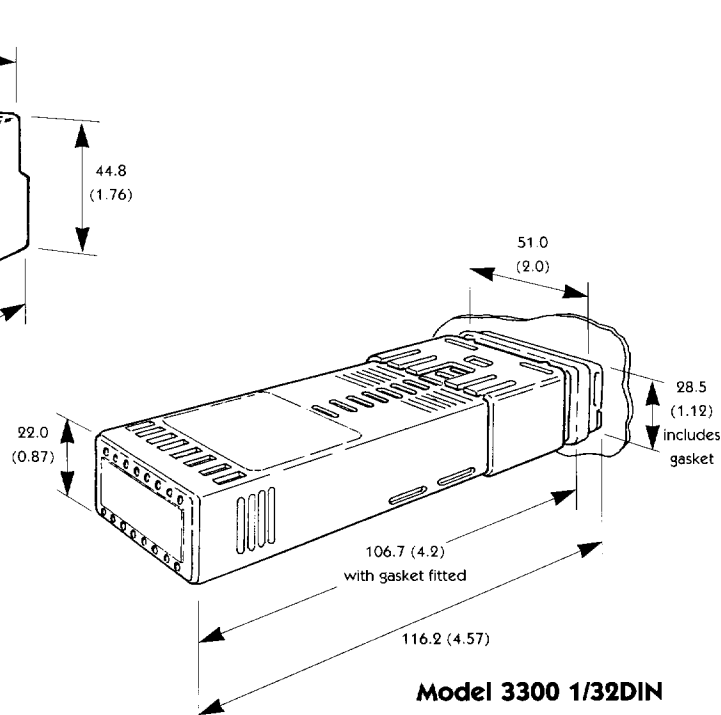
Both models are sleeve mounted for ease and speed of maintenance. To unplug from the sleeve, grip the bezel firmly by the recesses on each side and pull.

Safety and Environmental

Front bezels are sealed to IP66/NEMA4X and can be washed down. Manufacture is to ISO9002 and the units are fully CE compliant.



Model 9300 1/16DIN



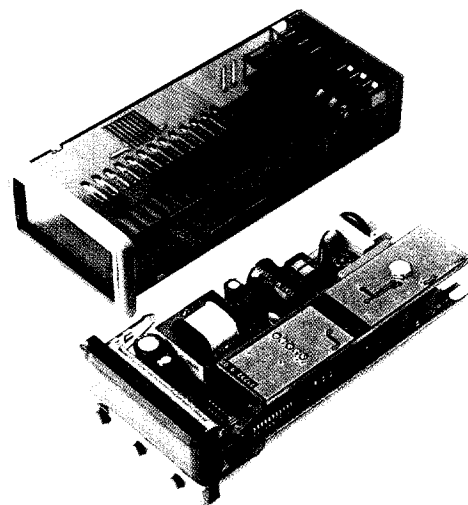
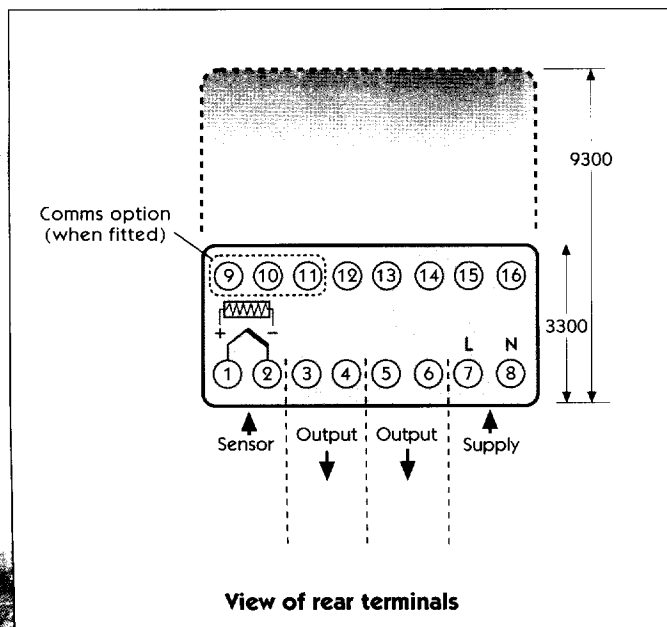
Model 3300 1/32DIN

Electrical

Choice of Outputs

Two output devices are fitted as standard, which must be allocated to the main output SP1 and the second output SP2 during initial configuration. There are three output options;

1. 2A electromechanical relay + solid state relay drive.
2. 2A electromechanical relay + 1A electromechanical relay.
3. Solid state relay drive + solid state relay drive.



Communications option

Model 3300 with the comms board fitted, secured with a single nylon fitting and connected to the instrument mother board via a five way connector.

Sensor Selection

Option/Sensor type	Sensor range				Linearity
Thermocouples					
tc b	B	0 to 1800 °C	32 to 3272 F	Pt-30%Rh/Pt-6%Rh	2.0*
tc E	E	0 to 600 °C	32 to 1112 F	Chromel/Con	0.5
tc J	J	0 to 800 °C	32 to 1472 F	Iron/Constantan	0.5
tc K	K	-50 to 1200 °C	-58 to 2192 F	Chromel/Alumel	0.25*
tc L	L	0 to 800 °C	32 to 1472 F	Fe/Konst	0.5
tc n	N	-50 to 1200 °C	-58 to 2192 F	NiCrosil/NiSil	0.25*
tc r	R	0 to 1600 °C	32 to 2912 F	Pt-13%Rh/Pt	2.0*
tc s	S	0 to 1600 °C	32 to 2912 F	Pt-10%Rh/Pt	2.0*
tc t	T	-200 / 250 °C	-273 / 482 F	Copper/Con	0.25*

Resistance temperature detector

rtd	-200 / 400 C	-273 / 752 F	Pt100/RTD-2	0.25*
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Linear process inputs (Input mV range: 0 to 50mV)

Displays	0 - 20mV	4 - 20mV	setpoint limits	
Lin1	0 - 100		0 - 400	± 0.5%
Lin2		0 - 100	-25 - 400	± 0.5%
Lin3	0 - 1000		0 - 3000	± 0.5%
Lin4		0 - 1000	-250 - 3000	± 0.5%
Lin5	0 - 2000		0 - 3000	± 0.5%

Notes: 1 Linearity: 5-95% sensor range

2* Linearity B:5° (70° - 500°C) K/N:1° >350°C exceptions: R/S: 5° <300°C T:1° <- -25° >150°C RTD/Pt100: 0.5° <-100°C

Specification

Thermocouple

9 types
Standards: IPTS68/DIN 43710
CJC rejection: 20:1 (0.05°/°C) typical
External resistance: 100Ω maximum

Resistance temperature detector

RTD-2/Pt100 2 wire
Standards: DIN 43760
(100Ω 0°C/138.5Ω 100°C Pt)
Bulb current: 0.2mA maximum

Linear process inputs

mV range: 0 to 50mV

Applicable to all inputs SM = sensor maximum

Calibration accuracy: ±0.25% SM ±1°C
Sampling frequency: input 10Hz, CJC 2 sec.
Common mode rejection: Negligible effect up to 140dB,
240V, 50-60Hz
Series mode rejection: 60dB, 50-60Hz
Temperature coefficient: 150ppm/°C SM
Reference conditions: 22°C ±2°C, rated voltage after 15 minutes settling time.

Output devices

SSd: solid state relay driver: To switch a remote SSR 5Vdc +0/-15% 15mA non-isolated

Miniature power relay: form A/SPST contacts (AgCdO) 2A/250~ resistive load

General

Displays: Main, 4 Digits high brightness green LED. 10mm (0.4") high. Digital range -199 to 9999 Hi-res mode -199.9 to 999.9
LED output indicators - flashing SP1 square, green; SP2 round, red 3 elastomeric buttons

Environmental

Safety: (Approvals pending) UL 873, EN 61010, CSA 22.2 No.1010.1-92
Humidity: Max 80%
Altitude: up to 2000M
Installation: Categories II and III
Pollution: Degree II
Protection: NEMA 4X, IP66
EMC emission: EN50081-1 FCC Rules 15 subpart J Class A
EMC immunity: EN50082-2
Ambient: 0-50°C (32-130°F)
Mouldings: flame retardant polycarbonate
Weight: 3300: 110g (3.9 oz) 9300: 120g (4.2 oz)