WEST Control Solutions

eCAL Temperature/Process Controller

Compact, Cost-effective, Extended capabilities

PMA WEST CAL Partlow

ISE, Inc. Å 10100 Royalton Rd., Cleveland, OH 44133 Å Tel: (440) 237-3200 Å Fax: (440) 237-1744 Å http://iseinc.com

eCAL is a general-purpose temperature and process controller ideal for industrial and scientific processing equipment

Adding value within a cost frame

The CAL Controls product line of West Control Solutions is recognised globally in the market as an offering of cost-effective controllers with unrivalled sales and customer support and adding specific value in the area of design, usability and serviceability. The addition of the eCAL controller reinforces this unique positioning of the CAL Controls product family.

The markets for industrial temperature and process controllers demand not only a cost-effective and compact solution, but also added value to the overall competitiveness of the machine or equipment. On top of this the eCAL controller delivers an improved aesthetic design and enhanced functionality.

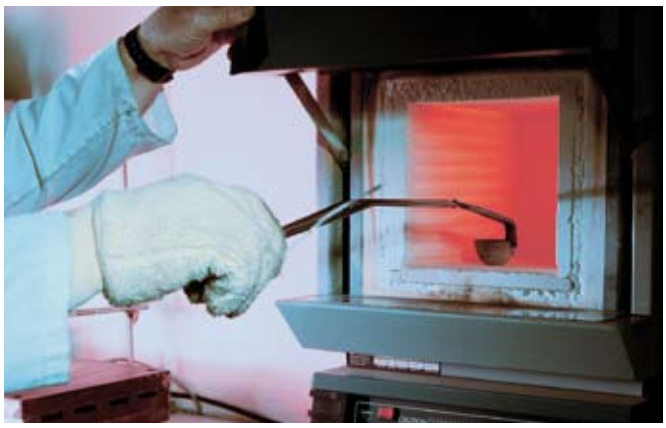
Applications

- Small lab and industrial ovens
- Incubators
- Chillers
- Bag Sealers
- Sterilisers
- Fluid Baths
- Small Packaging Machines
- Dryers
- Food and beverage processing
- Plastics extrusion

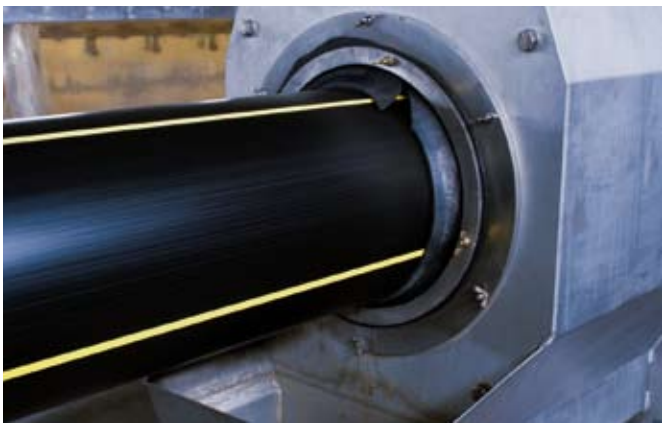
And many more ...

Food and beverage

Life sciences



Ovens and furnaces



Plastics and packaging

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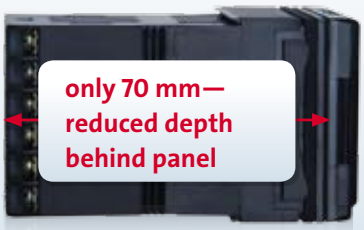
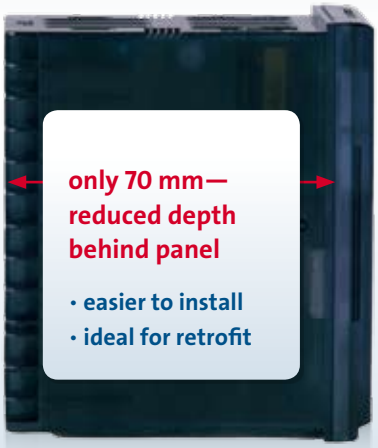
eCAL—Features meeting requirements





Cost-effective control—high functionality

- **Universal input—one input for all sensor types**
- **Alarms and diagnostics—prevent problems before they happen**
- **Temperature profile control with programmer function**

Available in 1/16 DIN (48mm x 48mm) and 1/8 DIN (96mm x 48mm) formats.

Input

- Universal input for Thermocouple, PT100 or linear DC sensors

Alarms and Diagnostics

- Two absolute or deviation alarms– high, low or band
- Loop alarm
- Clear on-screen status messages 'alm'
- Relay life monitor
- High ambient temperature warning

Communications or networking

- RS485 Modbus RTU communications option

User interface

- Clear LED display with 4 digits upper and lower
- 4 button membrane keypad including function button for auto/manual or profiler control
- 3 output status LEDs

Outputs

- Output types: relay, SSR drive or linear DC
- 2 or 3 fixed outputs

Programmer function

- 2 programs of up to 16 segments
- Delay timer
- Auto holdback function – guaranteed soak
- Ramp. dwell, step, events, loop
- Function button for profiler control (run, hold, stop, reset)

Control

- PID or ON/OFF control
- 'Heat' or 'Heat/Cool' operation
- Manual or auto pre-tune

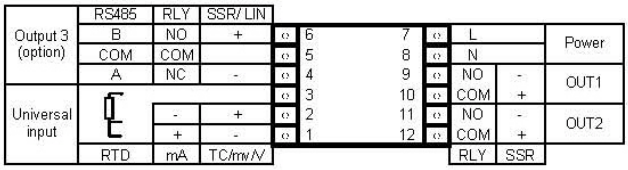
Specifications

(for detail specs see Datasheet Ref – DS-EC01-1-EN-1209)

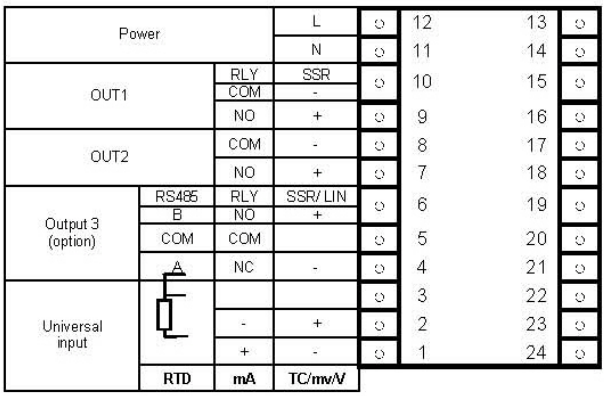
HMI	
Interface	4 button operation, dual 4 digit 10mm & 8mm high visibility LED displays, plus 3 LED indicators for output status Function button: Profiler control (run, hold, stop, reset) or auto / manual control (user defined)
Input	
Thermocouple	J, K, B, C, D, L, N, R, S, T, PtRh 20%:40%
RTD	3 wire PT100,
DC Linear	0 to 20mA, 4 to 20mA, 0 to 50mV, 10 to 50mV, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V
Measurement Accuracy	±0.1% of full range, ±1LSD (for additional accuracy details see specification)
Sensor Break Detection	Thermocouple , RTD & linear DC (4-20mA, 1-5V and 2-10V only)
Control	
Control Types	Full PID or on-off control, heat only, cool only or heat & cool
Tuning Types:	Automatic pre-tune and manual tuning.
Profiler	
Number of programs	2, each with 16 free-form segments (ramp /dwell / step / end) maximum segment length: 99Hrs 59 Mins
Delay timer start	Max 99 hours 59mins delay from initiation to program start
Guaranteed soak / Auto hold	Holds program if PV out of specified hold band during dwell segments
Program cycles	1 to 9999 or infinite (continuously restarts program at end)
Power loss recovery	Continue profile from point of power fail or end profile and return to controller mode
Alarms	
Alarm types	Process High, process low, band and deviation (high or low) alarm
Outputs	
Output Configuration	Output 1 & 2; relay or SSR Drive, output 3; relay, SSR Drive, linear DC (mA/V), RS485 comms
Control & Alarm Relays	Contacts SPST 2 amp resistive at 120/240V AC
SSR Driver Outputs	Drive capability >10V DC
DC Linear Outputs	0 to 20mA, 4 to 20mA, 0 to 10V, 2 to 10V, 0 to 5V
Operating and Environmental	
Temperature	0 to 55°C operating
Power Supply	100 to 240V 50/60Hz ±10% or optional 20 to 48VAC 50/60Hz, 22 to 55VDC low voltage version
Front Panel Protection	IP66 (IP20 behind panel)
Conformance	
Standards	CE
EMI: & Safety	Complies with EN61326 & EN61010-1, pollution degree 2, installation category II
Weights & Dimensions	
Dimensions	1/16 DIN, 48 x 48mm; 1/8 DIN, 96 x 48mm; 70mm depth behind panel
Weight	156 g, 210 g

Wiring Connections

1/16 DIN



1/8 DIN



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Ordering Code

Model Code	E	-	x	-	C	-	0	-	x	-	x	-	x	-	x	-	x

Model Type	
1/16 DIN	6
1/8 DIN	8

Options 1 and 2		
Relay / Relay	R	R
DC Drive Output for SSR / Relay	S	R
DC Drive Output for SSR / DC Drive Output for SSR	S	S

Option 3	
Not fitted	0
Relay Output	R
DC Drive Output for SSR	S
Linear mA/VDC Output	L
RS485	C

Supply Voltage	
100-240V AC	0
20 to 48VAC 50/60Hz or 22 to 65VDC low volts	2

Display Colour	
Red/Red	0
Red/Green	2

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