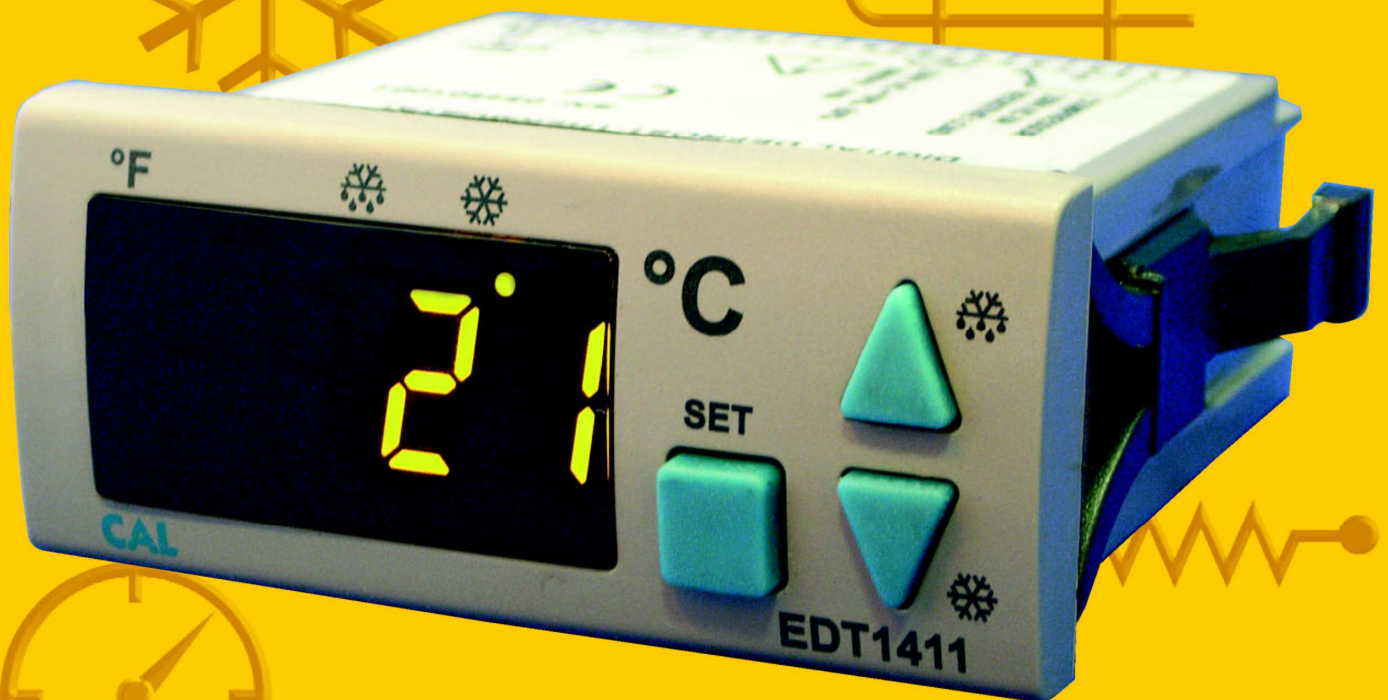


THERMOSTATS

DIGITAL THERMOSTATS ♦ DEFROST ♦ INDICATORS ♦ TIMERS



Thermostats and indicators from a market leader in temperature control

CAL Controls are a major supplier of temperature and process control products to manufacturing, scientific and process industries. Since CAL was established over 40 years ago, the company has grown into a market leader by providing affordable products that incorporate the latest technology.

CAL's range of easy-to-use digital thermostats are ideal for heating and refrigeration applications where ON/OFF control is required.

Digital Thermostats

- 34 x 77mm Fascia (29 x 71mm cut-out)
- J-type thermocouple, PT100 or PTC/NTC inputs
- On-off control
- Single or dual outputs



	ETC1311	ET1311	ET1312
Number of digits	3	3	3
LED colour	Red	Yellow	Yellow
Input type	J thermocouple or 2-wire PT100	PTC or NTC	PTC or NTC
Temperature range	0 to 600°C J-Type -100 to 600°C PT100	-50 to 150°C (100°C max. NTC)	-50 to 150°C (100°C max. NTC)
Number of outputs (relay, 8A)	1	1	2
High / low setpoint limits	✓	✓	✓
Heating control only	✓		
Heating or cooling control		✓	✓
Probe offset adjustment	✓	✓	✓
Alarm output (full scale, deviation or band)			✓
230V supply voltage option	AC	AC	Tx required
12V supply voltage option	AC*	AC/DC	AC/DC
24V supply voltage option	AC*	AC/DC	AC/DC

*9-30V DC is available as an extra cost option

Specification			
Dimensions	H34 x W77 x D70mm	Control output	Relay: 250Vac, 8A(resistive) SPDT (16A SPST option, ETC1311)
Display	3 Digits, 14mm	Alarm output	Relay: 250Vac, 8A(resistive) SPST
Scale range	0 to 600°C J-Type thermocouple -100 to 600°C PT100 -50 to 150°C PTC / 100°C NTC	Supply voltage	230Vac, +10%-20%, 50-60Hz 12Vac/dc or 24Vac/dc, ±10%, 50/60Hz, 9-30VDC (ETC1311,option) (select option)
Resolution	1°	Operating temperature	0 - 50°C
Accuracy	0.5% full scale ±1 digit (ETC1311 only) ±1°C (ET1311 & ET1312)	Wiring	2.5mm ² screw terminals
Control type	On-off	Protection	IP65
Hysteresis	0 - 20°C (ETC1311, 1-20°C)		

Ordering (part number)

MODEL NUMBER	SENSOR TYPE	VOLTAGE	16A relay
ETC1311	FE (J-Thermocouple,ETC1311 only)	230**	P (ETC1311)
ET1311	R (2-wire PT100, ETC1311 only)	12	option
ET1312	NTC (ET1311 & ET1312 only) PTC (ET1311 & ET1312 only)	24	

**ET1312 requires a transformer

Example

ETC1311	-	FE	-	230
---------	---	----	---	-----

Chiller & Defrost Thermostats

- 34 x 77mm fascia (29 x 71mm cut-out)
- Single or dual PTC/NTC inputs
- On-off control
- Various defrost options depending on model



	ET1211	EDT1411	EDT1323
Number of digits	2	4	3
Input type	PTC or NTC	NTC	PTC or NTC x 2
Temperature range	-40 to 99°C	-50 to 110°C	-50 to 150°C (100°C max NTC)
Number of outputs (8A/16A relay)	1 (8A)	1 (8A/16A)	3 (8A)
Defrost Function (see user manual for details)	Power-off	Man/auto timed	timed/evaporator temp.
Separate outputs for compressor, defrost & fan			✓
Additional defrost sensor input			✓
Buzzer on probe failure or alarm		✓	✓
230V supply voltage option	AC	AC	Tx required
12V supply voltage option	AC/DC	AC/DC	AC/DC
24V supply voltage option	AC/DC	AC/DC	AC/DC

Specification

Dimensions	H34 x W77 x D70mm	Fan/compressor output	Relay: 250Vac, 8A(resistive) SPST (EDT1323 only)
Display	2/3 digits, 14mm ; 4 digits, 12mm	Supply voltage	230Vac, +10%-20%, 50-60Hz 12Vac/dc or 24Vac/dc, ±10, 50/60Hz (select option)
Scale range	-40 to +99°C PTC or NTC (ET1211) -50 to 150°C PTC, 100/110°C max NTC (EDT1411 & EDT1323)	Sensor break protection	Control output relay de-energises
Resolution	1°C - ET1211 & EDT1323, 0.1°C - EDT1411	Operating temperature	0 - 50°C
Accuracy	±1°C	Wiring	2.5mm ² screw terminals
Control type	On-off	Protection	IP65
Hysteresis	Up to 20°C		
Control output	Relay: 250Vac, 8A(resistive) SPDT (16A SPST option, EDT1411)		

Ordering (part number)

MODEL NUMBER	SENSOR TYPE	VOLTAGE	16A relay
ET1211	NTC	230**	P (EDT1411)
EDT1411	PTC	12	option
EDT1323		24	

**EDT1323 requires a transformer

Example

EDT1323	-	NTC	-	230
---------	---	-----	---	-----

Timer

- 34 x 77mm fascia (29 x 71mm cut-out)
- Delay & pulse control modes
- HH:MM or MM:SS time setting
- Start/stop pushbutton or external control input
- Upper & lower setting limits
- Audible warning tones - 16 different tones
- Single output for control.



Specification

Dimensions	H34 x W77 x D70mm	Control output	Relay: 250Vac, 8A(resistive) SPDT
Display	4 Digits, 12mm, yellow	Supply voltage	230Vac, +10%-20%, 50-60Hz 12Vac/dc or 24Vac/dc ±10, 50/60Hz (select option)
Scale range	0 - 99.59 mins or 0-99.59 hrs	Operating temperature	0 - 50°C
Sensitivity	1s	Protection	IP65
Accuracy	±1 sec or min (dependant on units set)		

Ordering (part number)

ETM1411	VOLTAGE
	230
	12
	24

Example

ETM1411	-	12
---------	---	----

Indicators

- 34 x 77mm fascia (29x71mm cut-out)
- NTC temperature or analogue process inputs
- 4-digit yellow LED display
- Maximum & minimum registered values
- Parameter access protection
- Range can be calibrated to suit process signals (EI141)



	EI1410	EI141
Number of digits	4	4
Input type	NTC	0-20mA, 4-20mA, 0-1V, 0-10V
Scale range	-50.0 to 110.0 °C	-1999 to 4000
Adjustable decimal point	1	Up to 3
Adjustable sampling time		✓
Minimum and maximum alarm (display)	✓	
Configurable units display units e.g. Bar		✓
230V supply voltage option	AC	AC
12V supply voltage option	AC/DC	AC*
24V supply voltage option	AC/DC	AC*

*9-30VDC is available as an extra cost option

Specification			
Dimensions	H34 x W77 x D70mm	Supply voltage	230Vac, +10%-20%, 50-60Hz 12 Vac or 24Vac, ±10%, 50/60Hz 9-30Vdc (optional)
Display	4 Digits, 12mm yellow LED	Operating temperature	0 - 50°C
Scale range	-50.0 to +110.0 °C (EI1410) -1999 to 4000 (EI141)	Wiring	2.5mm ² screw terminals
Decimal point	EI141 : 3max, EI1410 : 1max.	Protection	IP65
Accuracy	±0.5% full scale (EI141 only) ±1°C (EI1410 only)		

Ordering (part number)

MODEL NUMBER	INPUT TYPE	VOLTAGE
EI141	blank (0-20mA, 4-20mA)	230
EI1410	0-1V, 0-10V, EI141 only	12
	NTC (EI1410 only)	24

Example

EI1410	-	NTC	-	230
--------	---	-----	---	-----

Accessories

Sensors

	PART NUMBER
PTC probe (air) - stainless steel, 1.5m silicon cable	E-PTC-APS-1.5S
PTC probe (liquid) - stainless steel, 1.5m silicon cable	E-PTC-LPS-1.5S
NTC probe (air) - stainless steel, 1.5m PVC cable	E-NTC-APS-1.5P
NTC probe (liquid) - stainless steel, 1.5m PVC cable	E-NTC-LPS-1.5P
NTC probe (air) - plastic, 1.5m PVC cable	E-NTC-APP-1.5P
NTC probe (air) - thermoplastic, 1.5m thermoplastic cable	E-NTC-APT-1.5T

Transformer (for use with ET1312 and EDT1323)

	PART NUMBER
230V-12V transformer	E-TRANSFORMER-12

Specifications are subject to change without notice, as a result of continual development and improvement, E&OE.

SL000287/1/0306



CAL Controls Ltd
Bury Mead Road, Hitchin, Herts, SG5 1RT. UK
Tel: + 44 1462-436161 Fax: + 44 (0) 1462-451801
email: sales@cal-controls.co.uk

CAL Controls Inc
1117 S. Milwaukee Avenue, Libertyville, IL 60048. USA
Tel: (847) 680-7080 Fax: (847) 816-6852
email: sales@cal-controls.com

www.cal-controls.com

a **VIDA GROUP** company