

1400 Series 1/16 DIN Temperature Controls

The 1400 Series provides cost effective temperature control or alarm for a wide variety of heating applications. The front panel is splashproof and may be cleaned for sanitary applications. An LED deviation indicator shows the process temperature below, at, or above the set value. Scales are calibrated in both °F and °C. The set pointer is located close to the scale so that parallax error is held to a minimum.



STANDARD FEATURES

- Splashproof front panel, NEMA 2 & 12
- Thermocouple or RTD Inputs
- Deviation indication
- Dual scale dial shows °F and °C
- Relay, 5 VDC, SSR or 4 to 20 mA outputs
- Optional alarm with manual reset feature

Inputs

INPUT TYPE	RANGE °F	RANGE °C
Type J Thermocouple	0 to +400	0 to +210
Type J Thermocouple	0 to +800	0 to +420
Type J Thermocouple	0 to +1600	0 to +860
Type K Thermocouple	0 to +1600	0 to +860
Type K Thermocouple	0 to 2000	0 to +1100
Type K Thermocouple	0 to 2500	0 to +1360
100 Ω Plt. 0.00385 DIN ¹ RTD	0 to +200	0 to +90
100 Ω Plt. 0.00385 DIN ¹ RTD	0 to +400	0 to +200
100 Ω Plt. 0.00385 DIN ¹ RTD	0 to +600	0 to +310
100 Ω Plt. 0.00385 DIN ¹ RTD	0 to +800	0 to +430
100 Ω Plt. 0.00385 DIN ¹ RTD	-100 to +300	-70 to +150

Note: Range is set at Factory. Select Order Code for desired range.

FRONT PANEL FEATURES

Status LED indicates that the output is on

Set point knob

Auxiliary alarm set point (Position of optional set point lock)

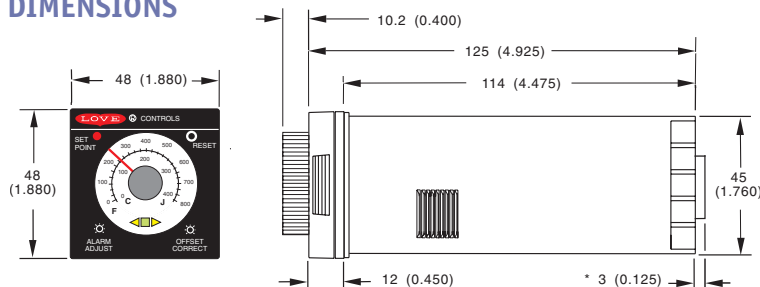


Alarm reset push button

Deviation indicator

Manual offset adjustment

DIMENSIONS



Panel cutout for all models is 45mm x 45mm (1.775in x 1.775in).
Allow for 13mm (0.5in) clearance at the rear.

* Present for SSR and Current outputs.

All Dimensions in millimeters with inches in parenthesis.

HOW TO ORDER

To order, specify part number by filling the boxes with the appropriate numbers. If no options are desired, leave those boxes blank.

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Aux. Alarm*

0 = No
1 = Yes

Output

A = Time Proportioning Relay
B = On-Off Relay
C = Time Proportioning SSR
D = On-Off SSR
E = Time Proportioning 5 VDC
F = On-Off 5 VDC
G = Proportional 4-20 mA
J* = Alarm Relay
K* = Alarm SSR
L* = Alarm 5 VDC

Input

A = J, 0 to 400°F/210°C
C = J, 0 to 800°F/420°C
E = J, 0 to 1600°F/860°C
H = K, 0 to 1600°F/860°C
J = K, 0 to 2000°F/1100°C
K = K, 0 to 2500°F/1360°C
L = RTD, 0 to 200°F/90°C
M = RTD, 0 to 400°F/200°C
N = RTD, 0 to 600°F/310°C
P = RTD, 0 to 800°F/430°C
R = RTD, -100 to +300°F/
-70 to +150°C

* Aux Alarm may not be ordered with outputs J, K, or L.

Options:

Recorder Output: Option 218 0 to 1 VDC @ 1 mA.

Knob Lock: Option 210

FM Approved Limit*: Option 2102, available on outputs J, K and L only.

Low Voltage Operation: Option 2502 operation on 24 VDC/VAC.
Option 2503 operation on 12 VDC/VAC.

Limit Power Interrupt: Option 215, available with Aux. Alarm or outputs J, K, or L.

SPECIFICATIONS

Inputs: Thermocouple or RTD.

Input Characteristics:

Thermocouple = 3 megohms minimum.

RTD current = 500 μ A max.

Sensor Break or Short Protection:

Upscale break only.

Set Point Range: Fixed by scale range.

Displays:

Deviation indication using 3 LEDs, above or below set point red, at set point green.

Control Action:

Reverse acting only except alarm units selectable reverse or direct by jumper selection.

Accuracy: $\pm 2\%$ of full scale.

Line Voltage Stability:

$\pm 0.05\%$ over supply voltage range

Temperature Stability:

100 ppm/°C nominal, 200 ppm/°C maximum.

Common Mode Rejection:

140 db minimum at 60 Hz.

Normal Mode Rejection:

65 db typical, 60 db at 60 Hz.

Isolation:

Relay and SSR outputs are isolated.

Current, voltage and logic outputs must not share common grounds with the input.

Power Consumption: 5 VA maximum.

Supply Voltage:

100 to 240 VAC, nominal, +10% -15%,
50 to 400 Hz. single phase; 132 to 240 VDC,
nominal, +10% - 20%.

Operating Temperature Range:

-10°C to 55°C (14 °F to 131°F).

Storage Temperature Range:

25°C to 65°C (-13°F to 149°F).

Humidity Range:

0 to 90% up to 40°C non-condensing.

10 to 50% at 55°C non-condensing.

Control Output Ratings:

SSR: 3.5 A @ 25°C typical.

Derates to 1.25 A @ 55°C. Minimum of 40
VAC and 100 mA required.

Relay, Form A contact (SPST):

3 A @ 250 VAC resistive.

1.5 A @ 250 VAC inductive.

Pilot Duty Rating: 250 VA.

Current (non-isolated):

4 to 20 mA into 600 ohms maximum.

Switched Voltage (non-isolated):

5 VDC @ 25 mA.

Panel Cutout:

45 mm x 45 mm (1.775" x 1.775").

Depth Behind Mounting Surface:

117 mm (4.6").

Weight: 227 g (8 oz.).

Agency Approvals:

UL E83725. Optional FM approved temperature
limit switch, Option 2102 (Alarm outputs J, K or
L only).

Front Panel Ratings:

Meets NEMA 2 and 12 ratings for non-hazardous
indoor locations.