

1/16 DIN, Temperature Limit Controller Designed to Meet a Wide Range of Safety Standards

The Watlow Series 145 is a 1/16 DIN temperature limit controller with a thermocouple or RTD sensor input. The 1/16 DIN case features a front panel that provides the Series 145 with water and corrosion resistance.

The Series 145 is designed to meet the needs of a wide range of safety applications. It is available with a wide variety of thermocouple and RTD ranges.

The compact size of the limit allows more flexibility in applications where space is a problem. The Series 145 has a standard integral setpot and a front panel LED output status indicator.



Features and Benefits

High or Low safety limit

- Provides machinery and personal safety

Sealed front panel

- Provides water and corrosion resistance

Compact 1/16 DIN size

- Readily fits in confined areas

Sensor break protection

- De-energizes system for safety

Three-year warranty

- Assures Watlow Control Confidence®

Custom temperature ranges available

- Designed to your application's specific criteria

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Specifications—1927

Control Mode

- High or low limit, factory selectable
- Manual or automatic reset on power loss, factory selectable
- Latching alarm with manual reset on over or under temperature

Operator Interface

- Sealed membrane front panel
- Integral set point
 - Dual temperature scale (°C and °F)
- LED indication of output status
- Dial scale calibrated to compensate for sensor non-linearities
- Integral reset switch

Input

- Thermocouple or RTD available
- Thermocouple with automatic cold junction compensation
- Thermocouple may be isolated or grounded
- 2- or 3-wire RTD input, platinum 100 , 500 , or 1000 @ 0°C calibrated for DIN 0.003850 / °C curve
- Sensor break protection de-energizes output

Output

- Electromechanical relay, 3A, Form C, SPDT: 3A @ 240V~, 3A @ 28V= (dc), resistive, 275VA pilot duty rated

Accuracy

Adjustable Set Point

- Calibration accuracy: $\pm 1\%$ of span, at 25°C $\pm 3^\circ\text{C}$ (77°F $\pm 5^\circ\text{F}$) ambient and rated line voltage $\pm 1\%$
- Set point accuracy: $\pm 3\%$ of dial scale
- Accuracy span: 540°C (1000°F) minimum

Fixed Set Point

- Calibration accuracy: $\pm 6^\circ\text{C}/\pm 10^\circ\text{F}$ of setting, at 25°C $\pm 3^\circ\text{C}$ (77°F $\pm 5^\circ\text{F}$) ambient and rated line voltage $\pm 1\%$



Temperature Stability

- Thermocouple: Typically 9 $\mu\text{V}/^\circ\text{C}$ ambient (5 $\mu\text{V}/^\circ\text{F}$ ambient) input referenced
- RTD: Typically 0.2°C/°C ambient (0.2°F/°F ambient)

Voltage Stability

- $\pm 0.01\%$ of span (min span of 540°C or 1000°F) per % of rated line voltage

Agency Approvals

- CE: EN61010 - Safety
EN61326 - Industrial Immunity, Class B Emissions
Installation Category 2, Pollution Degree 2
-  873, File #E43684
-  to C22.2 No. 24, File #E43684
- Approved for use in commercial cooking applications
- FM Class 3545, File #J.I.3008516

Terminals

- Screw clamp terminal: 12-26 gauge wire

Power

- 120V~, +10%/-15%, 50/60Hz
- 230V~ to 240V~, +10%/-15%, 50/60Hz
- 10VA maximum power

Operating Environment

- 0 to 55°C (32 to 131°F)
- 0 to 90% RH, non-condensing
- Storage temperature: -20 to 85°C (-4 to 185°F)

Dimensions

- Height: 55 mm (2.1 in)
- Width: 55 mm (2.1 in)
- Depth: 102 mm (4.0 in)
- Behind panel: 89 mm (3.5 in)
- Front panel: 13 mm (0.5 in)

Weight

- 0.7 lb (0.3 kg)

Ordering Information—1928

Output Type 1 4 5 - - 0 0 0
D = Electromechanical relay,
3A, Form C

Line Voltage
1 = 120V~
2 = 230V~ to 240V~

Input and Range
Type J
601 = 0 to 315°C (32 to 600°F)
602 = 0 to 750°C (32 to 1382°F)
609 = 10 to 66°C (50 to 150°F)

Type K
603 = 0 to 1250°C (32 to 2282°F)
611 = 0 to 600°C (32 to 1112°F)
612 = 0 to 250°C (32 to 482°F)

Type R
608 = 0 to 1500°C (32 to 2732°F)

Type S
607 = 0 to 1500°C (32 to 2732°F)

Type T
604 = 66 to 350°C (150 to 662°F)
605 = -200 to 66°C (-328 to 150°F)
610 = -87 to 218°C (-125 to 425°F)

RTD (100)
101 = -73 to 600°C (-100 to 1112°F)
103 = 0 to 250°C (32 to 482°F)

Limit Mode
1 = High limit with manual reset on power loss
2 = Low limit with manual reset on power loss
3 = High limit with automatic reset on power loss
4 = Low limit with automatic reset on power loss

Note: Electromechanical relays are warranted for 100,000 closures only. Solid state switching devices are recommended for applications requiring extended service life.

Note: Conformal coated product is available; consult factory.

Note: This output should be used with inductive loads.

Note: Specifications subject to change without notice.

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