

# L480B,G Temperature Controllers

PRODUCT DATA



## FEATURES

- Typical applications include freezer cabinets, display cases, beverage coolers, milk cooling tanks and air conditioners.
- The L480B can act as a frost alarm operator in storehouses, orchards, or other locations where frost could damage crops or equipment.
- The L480B automatically recycles. It has a single-pole, double-throw (spdt) switch that can be wired to make an alarm circuit at the setpoint.
- The L480G is a manual reset model. Its single-pole, single-throw (spst) switch locks out the control circuit on temperature fall to the setpoint.
- A dual temperature scaleplate is provided for both Fahrenheit and Celsius readings.
- The temperature range is 20°F to 60°F (-5°C to +15°C).
- The L480B,G has a 20 foot (6 meter) sensing element with no sensing bulb.
- The enclosed snap switch is dustproof and moistureproof for trouble-free operation.
- The controller can be mounted horizontally or vertically on a wall or panel, or directly on the compressor case.

## APPLICATION

The L480B,G Temperature Controllers operate electric dampers, valves, and compressor or fan motors to provide temperature or limit control of air conditioning systems and refrigeration units.

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## SPECIFICATIONS

### Models:

L480B Temperature Controller with spdt snap switch, automatic recycling.

L480G Temperature Controller with spst snap switch, manual reset.

### Switching Action:

L480B: Breaks control circuit and makes another circuit (makes R-B and breaks R-W) on temperature fall.

Automatically recycles.

L480G: Breaks control circuit on temperature fall. Manual reset.

### Electrical Ratings (Amperes):

See Table 1.

DC Rating: 0.2A at 120 Vdc, 0.1A at 240 Vdc.

Pilot Duty Rating: 125 VA

**Table 1. Full Load and Locked Rotor Ampere ratings.**

L480B,G	120 Vac	240 Vac
Full Load	10.2	6.5
Locked Rotor	61.2	39.0

### Ambient Temperature Range:

-20°F to +125°F (-11°C to +52°C).

### Maximum Sensor Temperature:

225°F (107°C).

### Operating Temperature Range:

20°F to 60°F (-5°C to +15°C); Dual Fahrenheit/Celsius scaleplate.

### Temperature Sensing Means:

20 ft (6m) element, no sensing bulb.

### Temperature Setting Means:

A slotted screw at the top of the controller. The setpoint is indicated through a scale opening in the cover.

### Differential:

Nonadjustable, additive, and fixed, 10°F (6°C) maximum.

### Finish:

Gray.

### Mounting Means:

Mounting lugs located on back of case.

### Dimensions:

See Fig. 1.

### Approvals:

Underwriters Laboratories Inc., Listed: File Number

SA481, Vol. No. 2, dated 02-09-66; Guide No. SDFY2.

Canadian Standards Association Certified: Listing G, File

No. LR1620; Guide No. 400-E-0.

### Accessories:

314439 Clips for mounting element inside duct. Specify quantity needed when ordering.

7640HX Assembly Kit for installing tubing when access into duct is not possible.

For Immersion well assemblies, see Honeywell

TRADELINER® Catalog.

113665 Grommet.

## INSTALLATION

### When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation, check out the product as provided in these instructions.



### CAUTION

**Disconnect the power supply before installation to prevent electrical shock or possible equipment damage.**

## ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number. If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Environmental and Combustion Controls Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care  
1885 Douglas Drive North  
Minneapolis, Minnesota 55422-4386
3. <http://customer.honeywell.com> or <http://customer.honeywell.ca>

International Sales and Service Offices in all principal cities of the world. Manufacturing in Belgium, Canada, China, Czech Republic, Germany, Hungary, Italy, Mexico, Netherlands, United Kingdom, and United States.

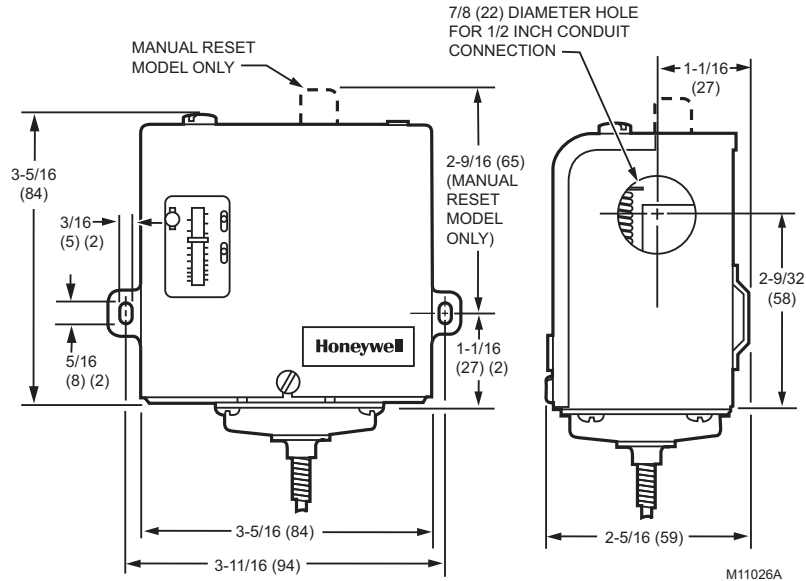


Fig. 1. L480 Temperature Controller dimensions in in. (mm).

## Location

Locate the sensing element where it can sense the average temperature of the space or liquid to be controlled. The L480B,G case must be located where the ambient temperature is at least 20°F (11°C) above the scale range setpoint. Do not locate the element near a hot or cold inlet.

**NOTE:** The L480B,G case and excess element must be located where ambient temperature is always at least 20°F (11°C) above the setpoint of the controlled medium. For settings above the midpoint of the temperature range, it may be necessary to locate the controller case close to a steam pipe or other warm surface and to be sure the element does not extend across a cold surface.

## Mounting

Fasten the controller to a rigid vertical or horizontal surface through the holes in the two mounting lugs projecting from either side of the controller case.



## CAUTION

Do not uncoil more element or capillary than is required for the application. Do not sharply bend the element or capillary or more than necessary—bending hardens the element and makes it brittle. Bends must have at least a one in. (25 mm) radius. Do not make bends close to the control or pull on the element or capillary. If the element or capillary can be subjected to vibration, protect any surface that makes contact.

## Mounting the Element

Strap the element on a coil; for example, in an area where freezing can occur, or mounted in a duct. Use as much of the element as necessary for maximum protection.

Use metal straps to fasten the element to the coil to be controlled.

Use clips (available as listed in Accessories section) for mounting the element in a duct. See Fig. 2.

## WIRING



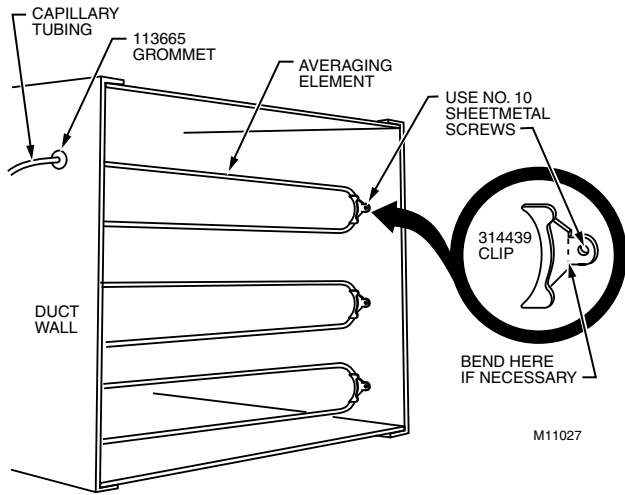
## CAUTION

To prevent possible electrical shock or equipment damage, disconnect power supply before wiring the L480B,G Temperature Controller.

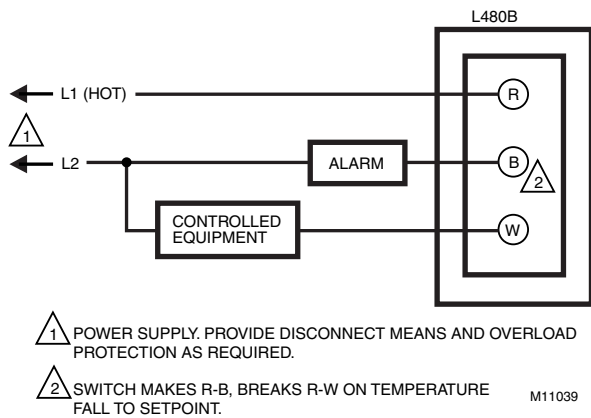
All wiring must be in compliance with local codes and ordinances. Refer to installation and wiring information supplied with the equipment to be controlled and to Fig. 3 and 4.

## IMPORTANT

L480B,G Temperature Controllers are approved for use with copper wire only



**Fig. 2. Use 314439 Clips to mount L480B,G Temperature Controller element in duct.**

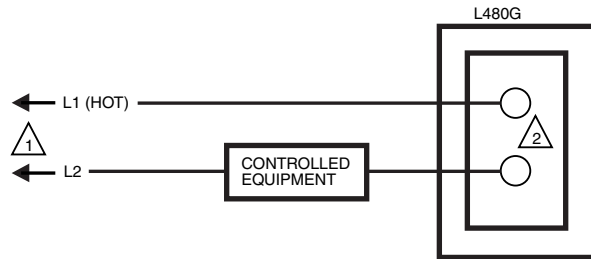


**Fig. 3. Typical hookup for L480B Temperature Controller with alarm circuit.**

## OPERATION AND CHECKOUT

### Operation

The L480B Temperature Controller has an spdt switch and automatically recycles. It breaks the control circuit and makes another circuit (makes R-B and breaks R-W) on temperature fall.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 SWITCH BREAKS ON TEMPERATURE FALL TO SETPOINT. MUST BE MANUALLY RESET.

M11040

**Fig. 4. Typical hookup for L480G Temperature Controller.**

The L480G Temperature Controller has an spst. It breaks the control circuit on temperature fall and must be manually reset to resume operation.

### Temperature Setting

Turn the temperature adjustment screw (located on the top of the L480 case) to move the indicator on the front of the case to the desired cutoff point. The L480 has a fixed, additive differential of 10°F (6°C) above the control setpoint.

**NOTE:** Slight changes in temperature setting can be required to correct for altitude changes. The operating point drops approximately 1°F (0.6°C) per 1000 ft (305m) above sea level.

### Checkout

With the system operating, increase the temperature setting until the switch operates. Cooling equipment should turn off and the alarm circuit (if used) should be energized.

Decrease the temperature setting. The alarm should deenergize, and the equipment should return to normal operation.

On manual reset models, reset the red plunger to resume normal operation.

### Automation and Control Solutions

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