

L482A Low Limit Controller

INSTALLATION INSTRUCTIONS

BEFORE INSTALLATION

No special tools are required to install the L482A Low Limit Controller. Refer to the job drawings for specific wiring and installation information.

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 ratings given in instructions and on the product to ensure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

Mounting

IMPORTANT

1. The controller operates from the lowest temperature along the entire 20 feet of the sensing element.
2. Locate controller case and bellows where ambient temperature is always warmer than the set point.
3. For settings above the scale range midpoint it can be necessary to locate the controller case close to a steam pipe or other warm surface and make sure the element does not extend across a cold surface.

Controller

Surface mount the controller (Fig. 1) vertically on any convenient location (including the duct itself). Orient the case with the bellows positioned on the bottom.

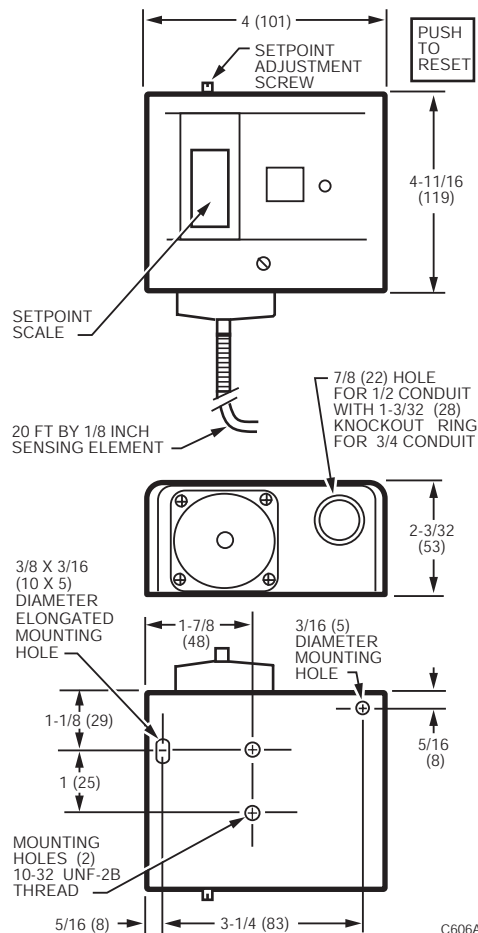


Fig. 1. L482A Low Limit Controller dimensions in in. (mm).



Sensing Element

IMPORTANT

- The maximum allowable sensing element temperature is 250°F (121°C).
- Uncoil only the amount of element required for the application.
- Bend element carefully and only as much as necessary. Bends require a minimum radius of one inch (25 mm).
- Bend only some distance from the controller.
- Pulling on the element damages it.
- For elements subject to vibration, provide protection from any surface which the element contacts.
- Mount element horizontally as shown in Fig. 2 and 3.

1. Locate the sensing element where it can sense the temperature of the air to be controlled.

NOTE: Locate the element away from hot or cold air inlets.

2. Punch or drill a 1/4 in. hole in the duct and install CCT1802 Grommet (Fig. 2) to protect the capillary.
3. Carefully insert the element through the grommet into the duct. Use as much element as possible to provide maximum protection.
4. Mount the element inside the duct or fasten to the coil if freezing can occur.
 - a. Duct mounting: Use CCT2600 Clip (Fig. 2).
 - b. Coil fastening: Use perforated metal straps (Fig. 3).

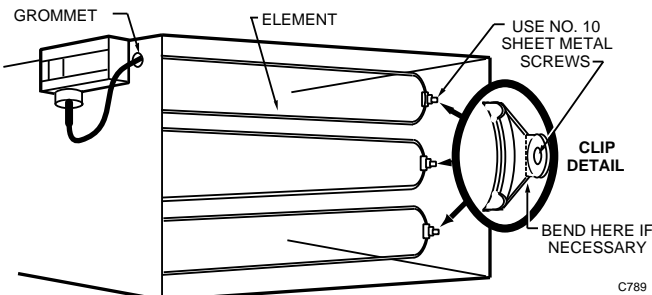


Fig. 2. Element mounted to duct with CCT2600 Clips.

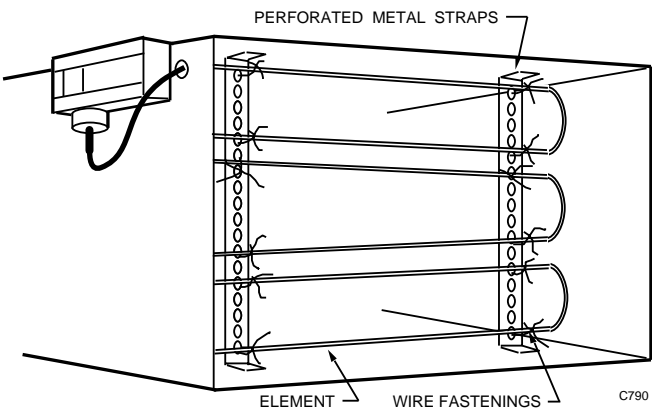


Fig. 3. Element mounted in duct with perforated metal straps.

OPERATION

On a temperature drop to setpoint, LINE 1 to M1 contacts close and LINE 2 to M2 contacts open. Reset to the normal state is manual.

WIRING

⚠ WARNING

Electrical Shock Hazard.

Can cause severe injury, death or equipment damage.

Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.

IMPORTANT

- All wiring must agree with applicable codes, ordinances and regulations.
- When switching both ac line voltage and an automation input (Fig. 4), the input wires must run no more than three feet in the same conduit. See Fig. 6.

For typical L482A wiring, see Fig. 4 and 5.

NOTES:

- Screw terminals are provided for wiring connections.
- Maximum wire size is 12 AWG.
- Use 8-32 x 1/4-inch screws for replacement if necessary. Longer screws can interfere with the switch mechanism and damage the switch.

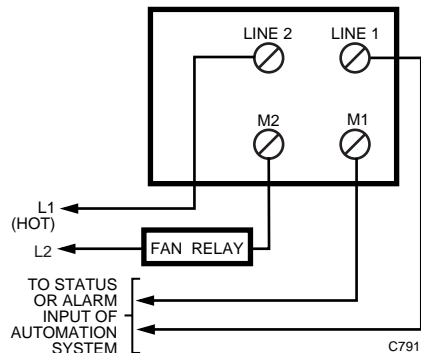


Fig. 4. Typical wiring diagram with automation input.

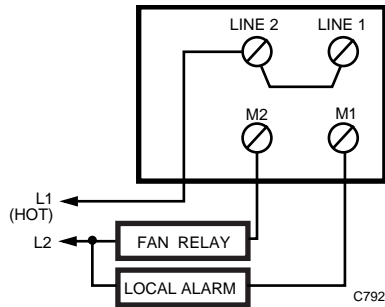


Fig. 5. Hookup providing freeze protection by shutting down fan with line powered local alarm.

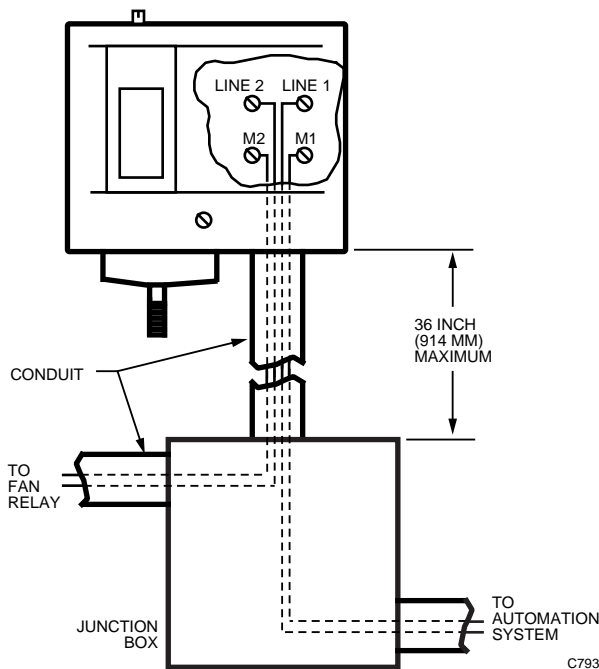


Fig. 6. Providing separate conduit for switched ac and automation input wiring.

Adjustment

Turn the setpoint adjustment screw (Fig. 1) on the top of the controller case to the value called for on the job drawings.

NOTES:

1. The setpoint adjustment is limited to 35-55°F (2-13°C) by an internal physical stop.
2. The setpoint is factory set at 35°F. Setpoint is the temperature at which LINE 1 to M1 contacts close and LINE 2 to M2 contacts open on a temperature fall. The controller differential is fixed at 5°F (3°C) nominal and is additive to the setpoint.
3. The operating point drops for elevations above sea level. To compensate, increase the setpoint adjustment 1°F (0.6°C) above the required setpoint for each 1000 feet (305m) above sea level.

CHECKOUT

Because of the L482A limited setpoint range, operational checkout can be difficult. Use one of the following methods to verify proper controller operation:

1. If the ambient temperature is below 50°F (10°C):
 - a. Turn the setpoint adjustment through the ambient temperature and note the switch action.
 - b. When the setpoint is increased to equal the ambient temperature:
 - (1) LINE 1 to M1 contacts should close.
 - (2) LINE 2 to M2 contacts should open.
 - c. Decreasing the setpoint to 5°F (3°C) below the ambient temperature should not affect the contact positions.
 - d. Pushing the manual reset button should:
 - (1) Open contacts LINE 1 to M1
 - (2) Close contacts LINE 2 to M2.
2. If the ambient temperature is above 50°F (10°C):
 - a. Immerse at least one foot of the element in ice water (or wrap same in ice).
 - b. As the element drops through the setpoint:
 - (1) LINE 1 to M1 contacts should close.
 - (2) LINE 2 to M2 contacts should open.
 - c. Remove the element from the ice water (or ice wrapping).
 - d. As ambient temperature rises to 5°F (3°C) the setpoint, there should be no effect on contact positions.
 - e. Pushing the manual reset button should:
 - (1) Open contacts LINE 1 to M1.
 - (2) Close contacts LINE 2 to M2.

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