SUPER TRADELINE L4064B
Universal Combination Fan and Limit Controllers

APPLICATION
The L4064B controls the on and off operation of the heating unit’s fan motor and provides high limit control of the main burner. It is suitable for all types of forced-air heating systems.

The L4064B’s bimetal sensing element turns fan on and off according to plenum temperature.

The L4064B has a manual switch to provide continuous fan operation, mounting adapters for replacing competitive devices, adapters for wiring convenience, and a strain relief bushing for protecting the wiring from damage due to field abuse.

Limit contacts are suitable for line voltage, low voltage or millivolt circuits.

The fan-on timing can vary depending on applied voltage and switch ambient.

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 is complete, check out product operation as provided in these instructions.

WARNING
Failure to remove brass jumper, if limit switch is in low voltage circuit, can cause electrical shock hazard or damage low voltage controls.

CAUTION
1. Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.
2. When connecting cable or conduit to control, avoid straining the control case.

Follow furnace or burner manufacturer’s instructions, if available. The L4064B has a maximum switch temperature of 190°F (88°C), maximum element temperature of 350°F (177°C).

Do not exceed these temperatures or the following electrical ratings (amperes):

<table>
<thead>
<tr>
<th>Voltage</th>
<th>120 Vac</th>
<th>240 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Load</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Locked Rotor</td>
<td>84</td>
<td>48</td>
</tr>
</tbody>
</table>

Pilot Duty: 2 A at 24 Vac; 0.25 A at 0.25 to 12 Vdc.
Maximum Combined Connected Load: 2000 VA.
75°C (167°F) (min.) field wiring required. Wiring must conform to NEC Class 1 requirements.

LOCATION
If this is a replacement installation, locate the L4064B in the same location as the control being replaced. Sensing tube length should be same as old control. If this is a new installation, the element should be installed only by a trained, experienced service technician according to the furnace manufacturer’s instructions. The element must not touch any internal part of the furnace.

NOTE:
The electrical rating is at maximum switch temperature of 190°F (88°C). If plenum surface temperature exceeds 190°F (88°C), heat insulating material or a mounting bracket must be used.

MOUNTING
The device may be mounted either on the plenum surface or with a bracket (rigid or swivel).

SURFACE MOUNTING
Hole in plenum should be just large enough to accommodate the 3/4 in. (19.1 mm) diameter element tube. Fig. 1. For adequate clearance, a 13/16 in. (20.6 mm) diameter hole is recommended.

1. Remove cover by squeezing sides and pulling off. Insert element in plenum and mark location of mounting holes. Make sure the case is snug against the plenum before marking the mounting screws.
2. Punch or drill holes for mounting screws.
3. Place insulation between plenum and case if necessary.
4. Fasten controller securely with mounting screws.

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SWIVEL MOUNTING
L4064 may also be swivel-mounted. The swivel bracket requires a 1-9/16 in. (39.7 mm) hole in the plenum (Fig. 2).
1. Use bracket as a template to mark the location of mounting holes in plenum. Drill or punch holes for mounting screws.
2. Fasten the brackets in place with furnished screws. Start the screws but do not tighten.
3. Insert element tube through bracket, straighten controller, and fasten. Tighten the screws securely. It may be necessary to rotate the bracket to tighten all screws securely.

Fig. 2 - Swivel mounting requires a 1-9/16 in. (39.7 mm) diameter mounting hole for element insertion.

RIGID BRACKET MOUNTING

**WARNING**
When mounting control on bracket, setscrew must strike tube frame not sensing element to prevent bypassing the safety limit function.

L4064 may be mounted using a rigid bracket. The rigid bracket requires a hole 13/16 in. (20.6 mm) diameter for element insertion (Fig. 3).
1. Use bracket as a template to mark the location of mounting holes in plenum. Drill or punch holes for mounting screws.
2. Fasten bracket in place with furnished screws. Tighten the screws securely.
3. Insert element tube through bracket, straighten controller and fasten by tightening setscrew.
   - Be sure screw strikes bushing not coiled bimetal sensing element.
4. For replacement installations with existing 1 in. (25.4 mm) diameter hole. SUPER TRADELINE models are supplied with split steel bushings and wire snap ring. Follow the instructions below for using the steel bushing adapter.

STEEL BUSHING ADAPTER
1. Insert one-half of the split steel bushing (Fig. 4), through the wire ring. It may be necessary to spread the ring slightly.
2. Insert the other half of the steel bushing into the ring making sure tabs and ears are at the same ends.
3. Place bushing assembly on element, ear end first.
4. Holding bushing at seams, push firmly to the control end of element.

Fig. 3 - Rigid bracket mounting requires a hole 13/16 in. (20.6 mm) diameter for element insertion.

Fig. 4 - Using SUPER TRADELINE adapter.

5. Insert element tube with adapter through bracket, straighten controller and fasten. Tighten setscrew. Be sure screw strikes bushing not coiled bimetal sensing element.

Fig. 5 - Removing slotted knockouts.

6. Inserting strain relief bushing.

3. Refer to the following section for type of wiring connections (standard wire push-in terminals or female receptacle).

WIRING CONNECTIONS
When connecting cable or conduit to this controller, use care to avoid strain on the control case.

Connections can be made to standard wire push-in terminals or female receptacles for 1/4 in. (6.4 mm) male flag connectors on both the fan and limit switches (Fig. 8).

FOR STANDARD WIRE PUSH-IN TERMINALS
Connect wires to the terminals as follows:
1. Use Nos. 14, 16, or 18 solid wire or Nos. 14 or 16 stranded wire, depending on electrical requirement.
2. Strip insulation from wires the distance shown by Fig. 5 and pull straight down.
3. Solid wire may be inserted directly into the terminal holes. If stranded wire is used, insert a small screwdriver into the slot next to the terminal. Push screwdriver in and hold while inserting wire into terminal (Fig. 8). Remove screwdriver. If stranded wire is solder-dipped, it can be pushed directly into terminal holes.

FOR FEMALE RECEPTACLES -
It is recommended that the female receptacles be used for wiring accessory equipment, i.e., electronic air cleaner, humidifier, etc.
Connect wires to the receptacles as follows:
1. Use Nos. 14 to 18 size wire, depending on electrical requirement.
2. Attach 1/4 in. (6.4 mm) male flag connector to each wire. Two male connectors with leadwires are supplied.
3. Push male flag connector directly into the female receptacle. Make sure that the flag is forced to the bottom of cavity and wire is in the channel (Fig. 8).

8. Location of wiring connections.

IMPORTANT
Make certain all wires are clear of rotating scaleplate.
SWIVEL MOUNTING
L4064 may also be swivel-mounted. The swivel bracket requires a 1-9/16 in. (39.7 mm) hole in the plenum (Fig. 2).
1. Use bracket as a template to mark the location of mounting holes in plenum. Drill or punch holes for mounting screws.
2. Fasten the brackets in place with furnished screws. Start the screws but do not tighten.
3. Insert element tube through bracket, straighten controller, and fasten. Tighten the mounting screws securely. It may be necessary to rotate the bracket to tighten all screws securely.

RIGID BRACKET MOUNTING

**WARNING**
When mounting control on bracket, setscrew must strike tube frame not sensing element to prevent bypassing the safety limit function.
L4064 may be mounted using a rigid bracket. The rigid bracket requires a hole 13/16 in. (20.6 mm) diameter for element insertion (Fig. 3).
1. Use bracket as a template to mark the location of mounting holes in plenum. Drill or punch holes for mounting screws.
2. Fasten bracket in place with furnished screws. Tighten the screws securely.
3. Insert element tube through bracket, straighten controller and fasten by tightening setscrew. Be sure screw strikes tube frame and does not strike sensing element.
4. For replacement installations with existing 1 in. (25.4 mm) diameter hole. SUPER TRADELINE adapters are supplied with split steel bushings and wire snap ring. Follow the instructions below for using the steel bushing adapter.

STEEL BUSHING ADAPTER
1. Insert one-half of the split steel bushing (Fig. 4), through the wire ring. It may be necessary to spread the ring slightly.
2. Insert the other half of the steel bushing into the ring making sure tabs and ears are at the same ends.
3. Place bushing assembly on element, ear end first.
4. Holding bushing at seams, push firmly to the control end of element.

5. Insert element tube with adapter through bracket, straighten controller and fasten. Tighten setscrew. Be sure screw strikes bushing not coiled bimetal sensing element.

FOR FEMALE RECEPTACLES -
It is recommended that the female receptacles be used for wiring accessory equipment, i.e., electronic air cleaner, humidifier, etc.
Connect wires to the receptacles as follows:
1. Use Nos. 14 to 18 size wire, depending on electrical requirement.
2. Attach 1/4 in. (6.4 mm) male flag connector to each wire.
3. Push male flag connector directly into the female receptacle. Make sure that the flag is forced to the bottom of cavity and wire is in the channel (Fig. 8).

**Important**
Make certain all wires are clear of rotating scaleplate.
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<table>
<thead>
<tr>
<th>Fan</th>
<th>Limit</th>
<th>Fan</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 Vac</td>
<td>14</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>240 Vac</td>
<td>84</td>
<td>48</td>
<td>42</td>
</tr>
</tbody>
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SURFACE MOUNTING
Hole in plenum should be just large enough to accommodate the 3/4 in. (19.1 mm) diameter element tube, Fig. 1. For adequate clearance, a 1/32 in. (0.20 mm) diameter hole is recommended.

1. Remove cover by squeezing sides and pulling off. Insert element in plenum and mark location of mounting holes. Make sure the case is snug against the plenum before marking the mounting screws.
2. Punch or drill holes for mounting screws.
3. Place insulation between plenum and case if necessary.
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Fig. 1 - Surface mounting requires a hole 13/16 in. (20.6 mm) diameter for element insertion.