



## L61LL BASO® Safety Shutoff Device

### Installation



**WARNING: Risk of Explosion or Fire.**  
**Do not use the L61LL in Liquefied Petroleum (LP) gas applications.** The L61LL is for use with natural gas **only**. Pilot gas is not 100% shut off and will continue to flow with the loss of pilot flame. Use of LP gas may cause gas accumulation and may result in severe personal injury or death.

**IMPORTANT:** Only qualified personnel should install or service BASO® Gas Products. These instructions are a guide for such personnel. Carefully follow all instructions in this document and all instructions for the appliance.



**WARNING: Risk of Explosion or Fire.**  
Shut off the gas supply at the main manual shutoff valve before installing or servicing the L61LL. Failure to shut off the gas supply can result in the release of gas during installation or servicing, which can lead to an explosion or fire, and may result in severe personal injury or death.



**CAUTION: Risk of Electric Shock.**  
Disconnect power supply before making electrical connections to avoid electric shock.

**IMPORTANT:** Make all gas installations in accordance with applicable local, national, and regional regulations.

To install the L61LL.

1. Turn off all power to the appliance.
2. Turn off the gas at the main manual shutoff valve adjacent to the appliance.

**IMPORTANT:** Do not loosen or tighten the brass hex nut that fastens the brass terminal bushing to the switch housing. The machined flats on the terminal bushing must be parallel to the flats on the switch housing. If not, the switch power unit may distort and cause the safety switch to fail.

3. Remove the metal snap-on cover from the L61LL (not the brass hex nut).
4. Mount the L61LL on a vertical surface with the thermocouple connection positioned downward.
5. Push the circuit wires through the conduit opening on the bottom of the L61LL, strip the ends of the wires just enough to put the bare wire under the terminal screws, and connect the circuit wires according to the appliance manufacturer's instructions or the wiring information on the label (see Figure 1).



**WARNING: Risk of Explosion or Fire**  
Do not attach both wires to one terminal on the L61LL. Doing so bypasses and eliminates all safety features provided by the L61LL and can lead to an explosion or fire, and may result in severe personal injury or death.



**WARNING: Risk of Explosion or Fire**  
Verify that this device is wired in series electrically with thermostats and other appliance operating controls. Wiring the device in parallel with such controls will defeat the safety features of this device and may result in severe personal injury or death.

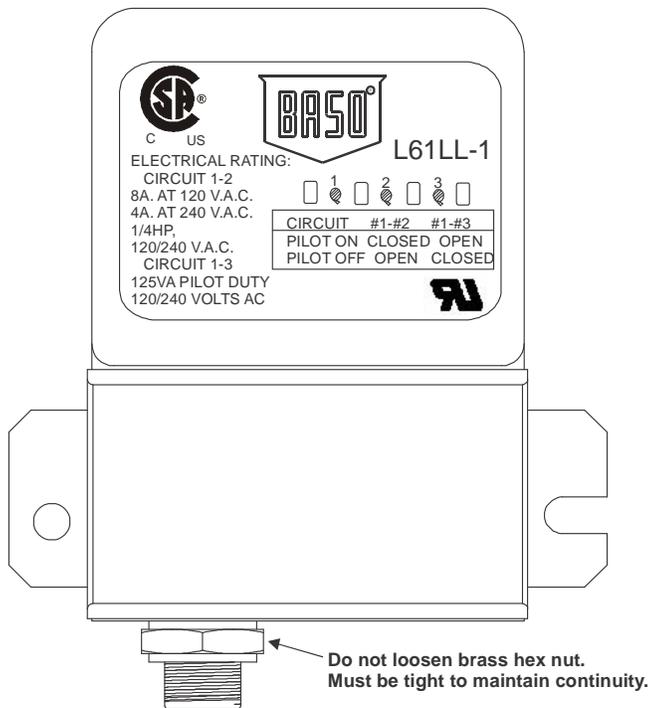


Figure 1: L61LL Product Label

6. Replace the metal snap-on cover (do not loosen the brass hex nut).
7. Attach the thermocouple securely to the pilot burner, and screw the terminal end to the BASO® power unit terminal on the L61LL. Make sure that this connection is clean. Tighten the thermocouple lead nut finger tight plus 1/8 turn maximum. **Do not overtighten.**

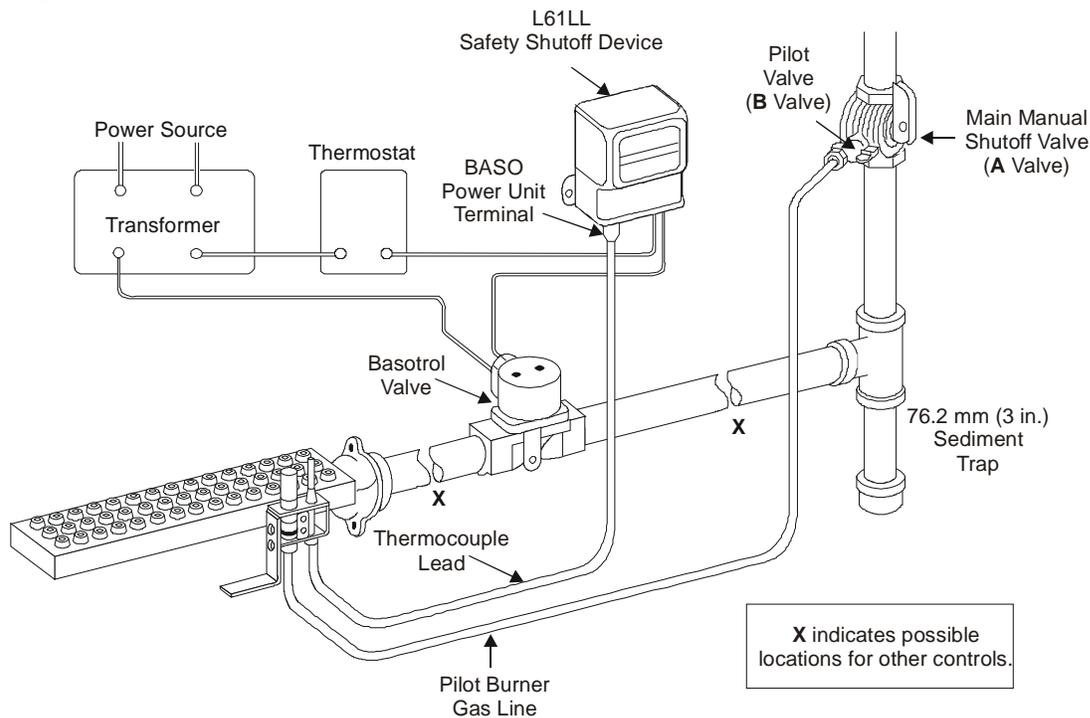


Figure 2: Typical L61LL Installation

## Setup and Adjustments

### Checkout



#### **WARNING: Risk of Explosion or Fire.**

Follow this or an equivalent checkout procedure after installation. Before leaving the installation, verify that the L61LL functions properly and that the system has no gas leaks. Gas leaks can lead to an explosion or fire, and may result in severe personal injury or death.

Make sure all components are functioning properly by performing the following test.

1. Open the main manual shutoff valve (**A** valve).
2. Test all joints and connections for leaks with a soap solution.
3. Set the thermostat to the lowest temperature setting.
4. Close the main manual shutoff valve (**A** valve) and the pilot valve (**B** valve [see Figure 2]) and wait at least five minutes for unburned gas to escape from the appliance.
5. Reopen the **B** valve and ignite the pilot gas. In approximately one minute, the L61LL device closes, establishing a circuit to the main gas valve.
6. When the circuit to the main gas valve is established, open the **A** valve. The main burner will ignite from the pilot burner when the thermostat calls for heat.
7. Disconnect the thermocouple from the L61LL. The main valve should close immediately. If it closes, reconnect the L61LL. If it does not close, check for wiring errors and repeat Steps 1 through 5.
8. Make sure brass hex nut is tight for good continuity. Do not over tighten.
9. Check the millivoltage output of the thermocouple and milliampere dropout range at the BASO power unit terminal to see that they meet the values in Table 1 and Table 2. Step-by-step procedures for these checks are included with the *Y99AB-4 BASO® Test Kit Application Note*.
10. Relight the pilot.
11. Observe at least three complete operating cycles of the appliance to make sure all components are functioning correctly.
12. Reset the thermostat to a normal temperature setting before leaving the installation.

### Repairs and Replacement

Check the millivoltage output of the thermocouple and milliampere dropout range at the BASO power unit terminal to see that they meet the values in Table 1, Table 2 and Table 3. If the reading does not meet these values, replace the thermocouple and/or the safety shutoff device.

Note: BASO recommends only BASO thermocouples that come from the original equipment manufacturer to provide optimum performance for your L61 series safety shutoff device.

**Table 1: Thermocouple Output**

Thermocouple		mV Range	
Lead Type	Turn Down	Normal	Not Less Than
K15	4 mV	20-28	15
K16	4 mV	25-35	17

Note: In high temperature locations, use K15 or K16 Series.

**Table 2: L61LL Dropout Range**

mA Range of Power Unit Assembly	
Low	High
75	200

**Table 3: L61LL Pull-In Range**

mA Range of Power Unit Assembly	
Low	High
220	400

## Pilot Servicing

If pilot flame problems occur, check the following:

- If the pilot flame burns yellow, it may be due to dirt or lint covering the lower portion of the pilot burner. Remove dirt and lint using a soft brush or a vacuum cleaner.
- A flame approximately 1/2 in. (12.7 mm) high must surround the thermocouple tip (see Figure 3).
- Because this is an electrical connection, the thermocouple lead connection to the BASO power unit must be clean and free of grease.

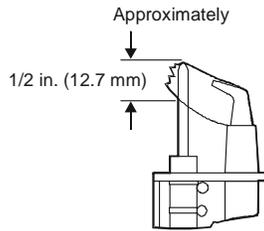


Figure 3: Flame Position

## Replacement Procedure



### WARNING: Risk of Explosion or Fire.

Shut off the gas supply at the main manual shutoff valve before installing or servicing the L61LL. Failure to shut off the gas supply can result in the release of gas during installation or servicing, which can lead to an explosion or fire, and may result in severe personal injury or death.



### CAUTION: Risk of Electric Shock.

Disconnect power supply before making electrical connections to avoid electric shock.



### WARNING: Risk of Explosion, Fire, or Electrical Shock.

Label all wires before they are disconnected when replacing the L61LL. Wiring errors can cause improper or dangerous operation and may result in an explosion, fire, or electrical shock, leading to severe personal injury or death.

When necessary, replace the safety shutoff device as follows:

1. Turn off all power to the appliance.
2. Close the main manual shutoff valve and the pilot valve.
3. Disconnect the thermocouple lead from the safety shutoff device.
4. Remove the metal snap-on cover from the old safety shutoff device.
5. Disconnect and label wires from the three wire terminals and remove the device from the appliance.
6. Replace with the new BASO L61LL according to Step 3 through 7 in the *Installation* section to complete the installation.
7. Perform the steps in the *Checkout* section before leaving the installation.

## Repairs

Field repairs **must not** be made to the L61LL safety shutoff device. If the thermocouple meets the output listed in Table 1 and the valve does not function, replace the entire device. Any attempt to repair this assembly voids the manufacturer's warranty. For a replacement safety shutoff device, contact the nearest BASO Gas Products distributor.

Table 3: L61LL Electrical Specifications

Action	L61LL Circuit 1-2	L61LL Circuit 1-3*
Pilot Off	Open	Closed
Pilot On	Closed	Open
Electrical Ratings	8A, 120 VAC 4A, 240 VAC 1/4 hp at 120/240 VAC	125 VA Pilot Duty at 120/240 VAC

\* Switch can be used on 24/25 VAC installations.

Note: Circuit 1-3 is intended for pilot ignition means only. **Do not** use in a safety circuit.

## Technical Specifications

<b>Product</b>	L61LL BASO Safety Shutoff Device
<b>100% Shutoff</b>	No
<b>Conduit Opening</b>	1
<b>Maximum Ambient Surface Temperature</b>	-40 to 150°F (-40 to 66°C)
<b>Reset</b>	Automatic
<b>Switch Action</b>	Single-Pole, Double-Throw (SPDT)
<b>Type of Gas</b>	Natural
<b>Packaging</b>	Bulk pack supplied to original equipment manufacturer (individual pack optional).
<b>Bulk Pack Quantity</b>	48
<b>Weight</b>	29.5 kg (65 lb)
<b>Agency Listings</b>	CSA Certificate Number 229521-1656085 UL File Number MH2926
<b>Specification Standards</b>	ANSI Standard Z21.20 CAN 1-6.4 UL Standard 372

*Performance specifications are nominal and conform to acceptable industry standards. All agency certification of BASO products is performed under dry and controlled indoor environmental conditions. Use of BASO products beyond these conditions is not recommended and may void the warranty. Product must be protected if exposed to water (dripping, spraying, rain, etc.) or other harsh environments. The original equipment manufacturer or end user is responsible for the correct application of BASO products. Consult BASO Gas Products LLC for questionable applications. BASO Gas Products LLC shall not be liable for damages or product malfunctions resulting from misapplication or misuse of its products.*

Refer to the L61, L62 Series BASO Safety Shutoff Device Product Bulletin (BASO-PB-L61/L62) for necessary information on operating and performance specifications of this product.



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