

Power Factor Correction, LLC
 "Bringing The World Back Into Phase, One Step At A Time"

64 DRAKE AVENUE NEW ROCHELLE NY 10805

TEL: 914-235-1585

FAX: 914-235-7123

PLIP[®] USER INFORMATION

The PLIP[®] is a device that eliminates or reduces the negative effects of reactive power emanating from appliance motors. When used properly, it will be very effective in reducing thermal losses in wires and other conductors within customer premises and on the utility's distribution system. To connect the PLIP[®], simply unplug the appliance, plug in the PLIP[®], and then plug the appliance into the PLIP[®]. When the attached appliance is off, the PLIP[®] is also off and will consume no power. When the attached appliance or piece of equipment turns on and consumes a certain amount of power, the PLIP[®] activates to correct the reactive load. The PLIP[®] will only consume between 2 and 3 watts, while reducing line losses after the meter by over 21 watts for a net savings to the consumer of over 18 watts. While that may seem small, for equipment that operates continuously, the savings add quickly. The PLIP[®] is attached at the appliance receptacle. The PLIP[®] **IS NOT** the same as any reactive power devices connected at the building service entrance or meter of a customer premise. Those devices provide absolutely no savings to the customer. Any claims to the contrary are fraudulent. Suggested applications for the PLIP[®] are as follows:

All 120 volt Air conditioners – Use Model **PFC1201-02-D-4** or Model **PFC1202-02-4**

Energy Star rated 120 volt units have their currents reduced by approximately 7% with a PLIP[®] installed.

Older 220 volt Air Conditioners – Use Model **PFC2202-10-4**

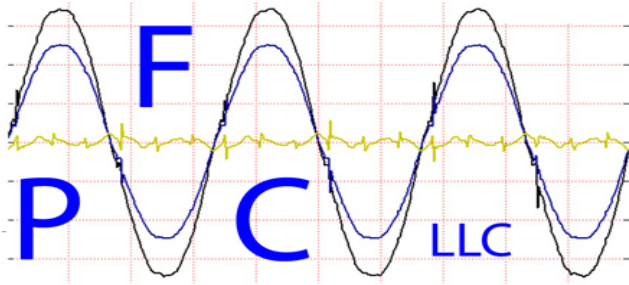
Units more than approximately 8 years old will be corrected by the PLIP[®]. Older 220 Volt units have their currents reduced by approximately 15% - 18% with a PLIP[®] installed. The Air conditioner must have a plug that looks like a standard 120 volt plug, but with both flat blades rotated 90 degrees. Do not use the PLIP[®] on late model 220 volt units, such as those manufactured by Friedrich or Fedders.

All Refrigerated Vending Machines and 120 Volt Commercial Refrigerators - Use Model **PFC1201-05-D-4**, Model **PFC1202-05-4**, Model **PFC1201-05-2**, or Model **PFC1201-05-D-2**.

Measurements indicate that all 120 volt refrigerated vending machines use the same type compressor. The PLIP[®] has reduced the operating current of every refrigerated vending machine tested by over 2 amperes. That is between a 25% and 40% current reduction, depending on the amount of display lighting in the machine.

For Refrigerated Vending Machines, the PLIP[®] is designed to correct the compressor. It should be sized to **not** operate when the compressor is off. The last digit in the model number indicates an operating current for the compressor plus the lights. A unit ending in "-4" can be tried. If it is sized properly, when the compressor turns on nothing audible will occur. If the trigger level is too high, the PLIP[®] will buzz. If that is the case, use a PLIP[®] model that ends with a "-2". The buzzing is caused by the PLIP[®] reducing the operating current of the appliance below the PLIP[®] turn on current. The PLIP[®] then turns off and on 60 times per second. **DO NOT** leave a buzzing PLIP[®] plugged in for an extended period.

Commercial Washers or Commercial Gas Dryers – Model number dependent on appliance. For washers and dryers that operate frequently, such as those found in a commercial establishment, the PLIP[®] will provide rapid energy savings. It is not suggested to use them with residential units. While the PLIP[®] will work, the appliances do not operate enough to provide a significant savings. **DO NOT USE THE PLIP[®] WITH ELECTRIC DRYERS. ONLY USE WITH GAS DRYERS.**



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PLIP[®] USER INFORMATION continued

When considering use of the PLIP[®], the appliance age, how frequently the appliance motor operates, and the appliance capacity should be considered. The PLIP[®] **should not** be used to correct computer power supplies or magnetic lighting. Also, many newer residential refrigerators operate with a perfect power factor. Measurements should be taken for newer residential refrigerators to ensure that the PLIP[®] is needed. (See Note Below)

The Return on Investment (ROI) for the PLIP[®] will vary, depending on the application and the climate. In warmer climates, the ROI will be shorter when used with refrigeration equipment because the equipment operates more frequently. Testing has been done in the New York area. Calculations for ROI have been made, based on the results of those tests. The estimated ROI for the PLIP[®], without any rebates or tax credits, in the New York area is below. Calculations are based on savings after the customer meter and **do not** include additional energy savings that will occur on the utility distribution system. A comparison to Photovoltaic solar is provided as a reference.

Photovoltaic solar - residential (after rebates and tax credits)	13 years
PLIP [®] when used with residential air conditioning	9 years
Photovoltaic solar - commercial (after rebates and tax credits)	5 - 7 years
PLIP [®] when used with Refrigerated Vending Machines	2 - 3 years

More information on how the PLIP[®] operates and studies made on reactive power are available on our web site

www.powerfactorcorrectionllc.com

Note on Residential Refrigerators: Before considering using a PLIP[®] on an older residential refrigerator (more than 10 years old), the owner should consider discarding the refrigerator and purchasing a new one. Our measurements indicate that the energy savings gained from operating the newer refrigerator will pay for the appliance within approximately four to five years, depending on the local electric rates. As commercial refrigeration is more expensive, the PLIP[®] may be a more cost effective option in that application.

PLIP[®] is a registered trademark of Power Factor Correction, LLC