GenerLink™

Operating Manual

Generlink™
225 Arnold Road ▪ Lawrenceville, GA 30044
www.generlink.com

OPER-MA23S
FPLES 1/2021

GenerLink™

UL LISTED

Please refer to page 22 for GenerLink™ testing, while utility power is present.

Operating Manual

www.generlink.com

MA23-S (unit with whole house surge suppression)

Address inquiries to:
Generlink™
225 Arnold Road
Lawrenceville, GA 30044

Transfer Switch: Used in conjunction with a sub panel. Device installed by a licensed electrician designed to allow interconnection of a portable generator with limited appliance availability.

Utility's Electric Distribution System: A network of power lines and associated equipment used to transmit and distribute electricity over a geographic area.

Voltage: Electrical potential or force that causes current to flow through a conductor.

Watt: A unit that measures the amount of electrical power. watts = volts x amps

Contents

Hardwire: Process of wiring electric appliances directly into the electric power supply.

Indicator Lights See Status Lights

Load Watts: See Start-up Wattage

Loads: A source drives a load. An appliance, component or other device that requires current to operate.

Meter: Any electrical or electronic device used to measure the amount of electricity consumed.

NEMA: National Electrical Manufacturers Association. A standard which specifies the electrical connectors used on plug-in equipment.

Overload: A condition that occurs when the load is greater than the system/device is designed to handle.

Power Cord: See Connection Cord

Power Outage: A temporary loss of electric power or temporary disconnection from the electric utility.

Running Wattage: The amount of energy necessary to continue running an appliance once it has started.

Status Lights: GenerLink™ status lights are designed to display power conditions with the GenerLink unit, utility and the portable generator.

Start-up Wattage: The amount of energy needed to first start an appliance. This amount is usually larger than the running wattage for appliances with motors (refrigerator). It is usually the same for appliances without motors (lights).

Sub Panel: Device used in connection with a transfer switch designed to bypass a breaker panel and limits the amount of load or number of appliances that can be placed on a generator.

Surge: A power disturbance known also as a transient voltage.
or
A brief but extreme burst of energy.

Surge Protection: Any device designed to limit or eliminate transient voltages from entering power, signal, telephone or data lines.

Glossary of Terms

Amp (Ampere): The amount of electricity or current flowing through a wire, similar to the flow of water through a pipe.

Back feed: A condition where electricity is being generated from a source outside the utility power grid and is feeding/traveling back into the power lines.

Breaker Panel: The main circuit breaker panel (or fuse box) is where all the circuits/fuses connect to the incoming electrical supply line from the utility.

Breakers: See Circuit Breaker

Capacity: The amount of power, expressed in watts, kilowatts or megawatts, that a device can provide at any given instant.
or
The maximum load of electricity that equipment can carry.

Circuit: A continuous loop of current.

Circuit Breaker: The most common type of "overcurrent protection." A resettable switch that trips when a circuit becomes overloaded or shorts out.

Connection Cord: An electrical receptacle and plug wired to a length of flexible electrical cord.

Continuous Output: The amount of power produced continuously as opposed to the maximum output, which can only be produced for short periods of time.

Current: The rate at which electricity flows, measured in amperes.

Electric Panel: See Breaker Panel
Fuses: Removable devices that link a circuit at the fuse box. A non-resettable overcurrent device.

Generator: A machine that converts mechanical energy into electrical energy.

GenerLink™: A five-inch collar-like device installed behind your electric meter, which allows you to easily and safely connect a portable generator to your home's existing wiring system.

GenerLok™: GenerLok™ is a unique fitted locking connector, exclusively available for GenerLink™.

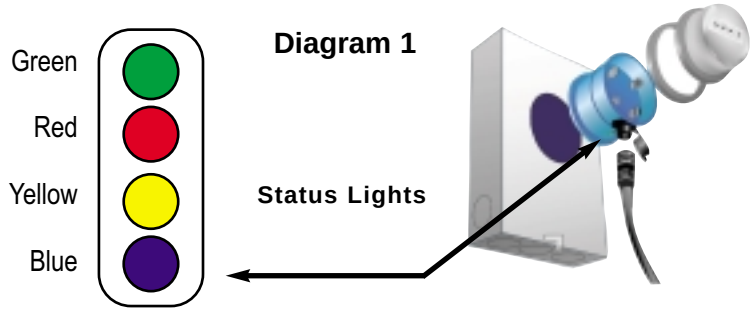
Setup Procedures

Carefully read all the instructions before using GenerLink™.
The best time to prepare for a power outage is before there is an actual interruption of utility-supplied power. The following are suggested steps to prepare for an actual power outage using your portable generator and GenerLink™.

- Determine which appliances are on each circuit breaker.
  Note: circuit breakers may control more than one appliance. We recommend you affix labels to each circuit breaker listing its appliances.

- Familiarize yourself with the typical power requirements of the appliances you expect to use during an outage, always taking into consideration the capacity of your generator. See Sample Worksheets located in this manual.

- Verify that the green status light on the GenerLink™ unit is illuminated. This light is located on the collar behind the connection cord below your electric meter. (See Diagram 1). The yellow status light may also be illuminated, this is a normal condition.



- Verify that the GenerLink™ unit is not emitting a constant audible alarm.

Status Lights

GenerLink™ is equipped with one blue status light, one green status light, one yellow status light, and one red fault status light. (See Diagram 1)

In the event of a power outage, none of the status lights will be illuminated until generator power is provided.

Green Status Light

When the green status light is illuminated utility power is present. This represents a normal condition. If normal utility-supplied power is present in your home (you are not powering your home with a generator) and the green status light is NOT illuminated, maintenance is required and the unit must be serviced. Do not, under any conditions, attempt to remove or repair GenerLink™ yourself. (Refer to Terms and Conditions for service instructions)

Red Status Light

The red status light indicates an abnormal condition exists and GenerLink™'s safety circuits were initiated. Illumination of the red status light does not indicate an unsafe condition exists. It is normal for the red status light to momentarily illuminate when GenerLink™ cycles between generator and utility power.

If the red fault status light is illuminated continuously, **DO NOT CONNECT** a generator to GenerLink™. Service is required, immediately contact your Utility or the Approved Installer. (Refer to the Terms and Conditions for service instructions)

Yellow Status Light

The yellow light indicates that the household load is greater than 30 amps. It is normal for the yellow status light to be illuminated while utility power is present. The load must be reduced before the GenerLink™ unit can be operated with a portable generator. Reduce the load by turning off circuit breakers in the breaker panel.

Blue Status Light

When the blue status light is illuminated, generator power is present. This represents that the generator is properly connected to the GenerLink™ and providing generator power.

WARNING

If the green status light is NOT illuminated when utility power is present, or the red fault status light IS illuminated, a potential hazardous condition may exist. Contact your electric utility or authorized installer.

Problem

After the generator is turned off and utility power is present, the house load begins to cycle on and off.

Cause

While connected to the generator, GenerLink™ may have suffered an internal failure.

Solution

1. Reduce the load by turning off all circuit breakers in the house.
2. Reconnect and restart the generator.
3. Restore load equal to the capacity of generator.
4. Operate household loads using your generator.
5. Call for service. (Refer to the Terms and Conditions for service instructions)
6. Do not, under any conditions, attempt to remove or repair GenerLink™ yourself.

Troubleshooting Tips

Problem
The GenerLink™ will not transfer to the generator during testing with utility power present.
Cause
The GenerLink™ unit is equipped with a lockout circuit that prevents transfer to generator power if the load on the home exceeds 30-amps. The yellow status light will be illuminated if the load exceeds 30-amps
Solution / Testing
1. Disconnect the generator.
2. Reduce the load by turning off ALL the circuit breakers in the house
3. Confirm that the yellow status light is not illuminated
4. Reconnect and restart the generator.
5. Restore load equal to or less than the capacity of generator.
6. Operate household loads using your generator.
7. Do not, under any conditions, attempt to remove or repair GenerLink™ yourself.

Problem
GenerLink™ will not continuously connect the generator to the loads or it periodically cycles the loads on and off.
Cause
GenerLink™ is equipped with load sensing capabilities. If it detects a connected load that exceeds the 30 amp continuous load rating, it will automatically disconnect the generator for a short period of time.
Solution
Reconnect GenerLink™ through the 30-amp, 4 blade connector.

Problem
The green indicator light on GenerLink™ is not illuminated when utility power is present.
Cause
The green status light on the bottom of the GenerLink™ must be illuminated when utility power is present. If it is not illuminated, this may indicate an abnormal condition that may require service.
Solution
1. Call for service. (Refer to the Terms and Conditions for service instructions)
2. Do not attempt to test or use the GenerLink™ with a generator until the condition is corrected.
3. Do not, under any conditions, attempt to remove and/or repair GenerLink™ yourself.

Audible Alarm

GenerLink™ units equipped with optional surge protection are also equipped with an audible alarm. The alarm will sound continuously if the surge components require service. (Refer to the Terms and Conditions for service instructions). Do not, under any conditions, attempt to remove or repair GenerLink™ yourself.

If the alarm is sounding, you **CAN CONNECT** a generator to GenerLink™. The audible alarm is an indication that service may be required. An authorized utility technician or licensed electrician must service the device. (Refer to the Terms and Conditions for service instructions)

Start-Up Procedures

The following are the start-up procedures for GenerLink™. For generator start-up procedures, please refer to the generator manufacturer owner's manual.

STEP 1. Turn off all of the circuit breakers in your breaker panel. (See Diagram 2)

Diagram 2

STEP 2. Move your generator into position to be connected to GenerLink™. Using the GenerLok™ power cord, insert the four-blade plug on the connecting cord into the L30-amp, 120/240-volt outlet on the generator.

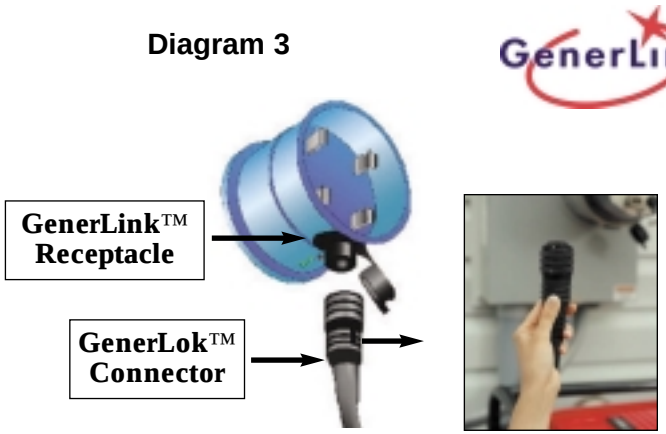
Do not attempt to connect your generator using a connection cord that is not fitted with GenerLok™. Do not attempt to connect to a three-blade generator outlet or one rated higher than 30-amps. (See the GenerLok™ Power Cord section of this manual)

STEP 3. To plug the GenerLok™ power cord, align with the front of the GenerLink™ receptacle. Insert the connector, there will be a snapping sound when the connector locks in place. (See Diagram 3)

Note: GenerLok™ cannot be connected successfully:

- if the connector does not lock in place (no snapping sound)

Diagram 3



Q. What maintenance is required for GenerLink™?
A. Twice a year test the GenerLink™ unit with the GenerLok™ power cord to ensure connectivity. If GenerLok™ cord does not snap into place, use a dielectric grease only on the four small ball bearings located on the GenerLink™ connector. Do not use WD40 on any components of the GenerLink™ or GenerLok™ power cord.

Q. What happens if the generator gets overloaded?
A. Your generator should have a circuit breaker that will activate in the event of an overload. If it does not have this feature, it is not suit-able for use with GenerLink™. If the generator's circuit breaker trips, turn off all the household circuit breakers in your breaker panel, reset the circuit breaker on the generator, and restart the generator. Please refer to your generator owner's manual for complete instructions on the safe operation of your generator.

Q. Where should the generator be placed?
A. Remember, generator exhaust gases contain deadly carbon monoxide. The generator should never be operated inside, this includes basements, crawl spaces and/or attached garages. Please consult your generator owner's manual for complete instructions on the safe location for and operation of your generator.

Q. What is a power cord?
A. A power cord consists of:
a standard GenerLok™ connector that will attach to GenerLink™,
a four wire, 10 gauge with MA23 cable that is
insulated, heavy duty, outdoor rated, fire and water-resistant and
is appropriate for cords up to 60 feet for a 30-amp circuit
an appropriate NEMA connector for your generator.
Your generator may have a 30-amp 4 prong, 120/240-volt output that will require a L14-30-amp, NEMA connector. The length of the power cord should be as close to the actual measured distance from the meter to the generator as possible in order to maintain your generator's power quality.

Q. What if my generator connector does not have a straight or locking L14-30 connector?
A. Some generators are fitted with connectors that are not L14-30. Consult with your local utility or a GenerLink™ Authorized Reseller to determine if your generator can be used to connect with GenerLink™.

Q. What happens if I want GenerLink™ removed from my home?
A. To remove, replace, or repair your GenerLink™, you must contact an Approved Installer. Only technicians authorized by the electric utility or licensed electricians may have access to GenerLink™. Do not, under any conditions, attempt to remove and/or repair GenerLink™ yourself.

Q. I have meter-based surge protection, but want GenerLink™. Should I get hard-wired surge protection?
A. If your GenerLink™ unit is equipped with whole house surge protection it will eliminate the need for meter based or hard wired surge protection devices.

Q. Why can't I run my whole house from a portable generator?
A. The appliances in the average home consume relatively low amounts of electricity to operate once they are started. However, many of them require a significant amount of electricity to start up the appliances. Please review the appliance guide to determine the start-up wattage required for individual appliances.

Q. What happens when the utility power is restored and my generator is operating through GenerLink™?
A. Your generator continues to power your home until you turn it off. Once you turn off your generator, GenerLink™ will automatically switch your home back to utility power. GenerLink™ has a built-in safety feature that prevents back feeding the generator's power into the utility lines, eliminating hazardous conditions for you and for utility service personnel.

Q. Does my utility meter continue to run when using GenerLink™ with my generator?
A. No, your utility meter will only run when the utility is providing electric power to your home. When using GenerLink™, with your portable generator, you are automatically disconnected from the utility power supply and will not reconnect until you turn off your generator.

Q. How can I tell when the utility power is restored?
A. There are four indicator lights on GenerLink™, one blue, one green, one yellow, and one red. When the blue light is illuminated, you are connected to your generator. When the green light is illuminated, this represents a normal condition where utility power is present. When your utility has restored power, you can de-energize and disconnect your generator from GenerLink™. If the red light is illuminated at any time or in conjunction with the green light, there is a potential problem, and you should have the unit serviced immediately. (Refer to the Terms and Conditions for service instructions)

Q. Can I use GenerLink™ during inclement weather?
A. GenerLink™ is completely sealed inside the meter socket and does not represent a hazard; however, generators should not be operated during rain or snow unless they are protected from the elements. Please consult your generator manufacturer, distributor and/or owner's manual for instructions on the safe operation of your generator.

STEP 4. Turn off the idle setting (if present) on your generator. This will ensure that your generator will operate at the correct speed and voltage.

STEP 5. Review the generator starting procedures in the generator owner's manual and then start your generator.

STEP 6. If after starting your generator, the GenerLink™ unit begins emitting a constant audible alarm, IT IS STILL SAFE TO OPERATE YOUR GENERATOR with GenerLink™. The alarm indicates that the surge protection components may require service. (See Warranty and Service Section in this manual)

STEP 7. Select the appliances that require emergency power. Note the capacity of your generator and refer to the Appliance Energy Guide in this manual.

Locate the circuit breakers in your home's breaker panel (See Diagram 4) for the appliances you can support and turn them on one at a time. Start with large motor loads first, such as refrigerators. Motors require 2 to 3 times more power to start than other electrical appliances. Allow generator operation to stabilize before starting the next load. Next, start smaller motors such as a ceiling or ventilating fan. Then start smaller appliances with no motors such as lights.

Diagram 4

Breaker Panel

STEP 8. When it is time to refuel your generator, turn off all your home's circuit breakers before turning off the generator, and refuel according to your generator owner's manual. Then begin with Step 1 of the Start-Up Procedure to reconnect loads/appliances.

WARNING

Before refueling your generator, consult the manufacturer's instructions as found in the generator owner's manual.

STEP 9. If the generator's circuit breaker trips off during operation or setup, turn off all circuit breakers in the breaker panel, reset the circuit breaker on the generator, and restart the generator if necessary. Select and reconnect loads following the procedures summarized in Step 7.

STEP 10. To determine when utility power has been restored, check the green status light (see Status Lights section in this manual). If the green light is illuminated, utility power is present, and you can reconnect to the utility.

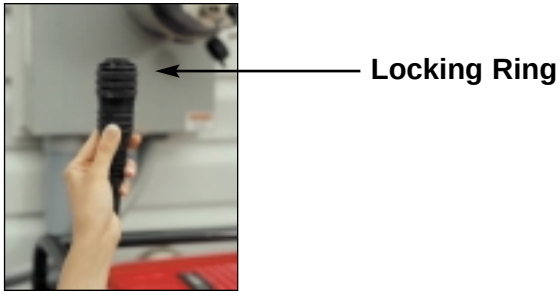
To reconnect to your electric utility:

A. Turn off your generator. Expect to hear a 'clicking' sound from the GenerLink™ unit when the power transition occurs. This is a simple verification that normal utility service has been restored.

B. On your breaker panel, set all circuit breakers to the 'on' position.

C. You can now unplug the generator from GenerLink™. To unplug GenerLink™, gently pull down on the metal locking ring at the top of the GenerLok™ connector. (See Diagram 5) Store your power cord in a safe and dry location.

Diagram 5



Frequently Asked Questions

Q. Do I need a generator in order to use GenerLink™?

A. Yes. GenerLink™ is an interconnection device that enables you to connect your portable generator directly to your home's wiring system. During a power outage, your generator becomes your source of emergency back-up power. GenerLink™ is designed as an alternative to expensive transfer switches and hazardous extension cords.

Q. How is GenerLink™ different from a transfer switch?

A. GenerLink™ offers several advantages over traditional transfer switches:

❑ GenerLink™ is installed outside your home at the electric meter in less than 20 minutes. And, in most cases, you do not need to be at home for the GenerLink™ installation. Installation of a transfer switch can take about two to three hours and requires re-wiring your home's electric system.

❑ With GenerLink™, you have the flexibility of selecting the appliances you want to run from your home's breaker panel, up to the capacity of your generator. Most basic transfer switches have 6 to 8 hard-wired circuits. This limits the number of circuits you can connect to the transfer switch.

❑ Since GenerLink™ uses your existing breaker panel, you can run any large 120 or 240-volt appliance up to your generator's capacity. Your well pump, water heater, sump pump, electric range, clothes dryer and electric baseboard heat are just some of the appliances that can be run on a rotation basis with GenerLink™. Many transfer switches and sub panels have only one or two 240-volt circuits rated at 15 or 20-amps. Heavier loads, such as hot water heaters and electric ranges, may not be accommodated by these transfer switches and sub panels.

Q. Is there any potential for damage to my appliances?

A. GenerLink™ is designed to function as an interconnection device and serves to connect your generator to your home. There is no risk of damage to your appliances created by the GenerLink™ device. You should exercise care when selecting your generator to ensure you are buying a high quality generator.

Q. I want surge protection for my home and appliances, can I still use GenerLink™?

A. Yes, GenerLink™ is now available with an optional feature – surge protection. GenerLink™ with surge protection will protect your home and wired appliances from surges over 600 volts.

Nominal Line Voltage:	120/240	
Max Cont. Operating Voltage:	250	
Operating Frequency:	60 Hz	
Total Surge Current:	100,000 A	
Max Surge Current Per Mode:	50,000 A	L1 - G
	50,000 A	L2 - G
Circuit Type:	Parallel High Energy	
Storage Temperature:	-40° to +160° F (-40° to +70° C)	
Operating Temperature:	-40v to +140° F (-40° to +60° C)	
Operating Altitude:	Sea Level to 12,000 feet (3,658 Meters)	

Performance:

ANSI/IEEE C62.41:	
Category A3 200A	600 V
Category B3 500A	660 V
Category C1 3,000A	690 V
EMI/RFI noise rejection:	Up to -20dB

The GenerLok™ Power Cord

To connect your portable generator to GenerLink™ a GenerLok™ power cord is required. The GenerLok™ power cord consists of three components:

A. GenerLok™ connector
B. connector for your generator
C. 10 gauge power cord (4 wire)

The GenerLok™ Connector:

GenerLink™ is equipped with GenerLok™, a unique connector that allows for quick and easy connection to your portable generator. GenerLok™ locks in place when connected to GenerLink™. GenerLok™ is not a threaded connector. Therefore, twisting of the locking sleeve is not necessary to ensure a tight connection. NOTE: GenerLok™ will always be fitted on one end of the power cord.

The Generator Connector:

GenerLink™ is connected to the generator's 120/240-volt AC receptacle using a GenerLok™ power cord with the appropriate generator connection. Generators have different types of receptacles depending on the type of generator, the type of power provided, and the size of the generator. Some generators are rated for only 120-volt or only 240-volt output; neither are appropriate for powering your home through GenerLink™. **If your generator does not have a 120/240-volt AC receptacle, it is not suitable for use with GenerLink™.** Check your generator for one of the receptacles in Diagram 6. These receptacles are rated for 120/240-volt output, which is what you need to run your home. If your generator does not have one of these receptacles, it should not be used with GenerLink™. Your GenerLok™ power cord will be fitted with a male plug compatible with one of the following generators receptacles.

Diagram 6

The Connection Cord:

Connection cords are typically 20 to 60 feet long, with a maximum recommended length of 60 feet for a 30-amp circuit. To determine the correct cord length, follow these easy steps:

STEP 1. Select a location for your generator when it is being used with GenerLink™. Consult your generator manufacturers owner's manual for instructions on the acceptable placement of your generator.

STEP 2. Measure the length of the cord you will need by calculating the distance from the installed GenerLink™ to your generator, including the vertical distance from the electric meter to the ground.

The length of the power cord should always be as close as possible to the actual measured distance from the electric meter in order to maximize your generator's power quality. Additionally, the power cord must be fully unrolled during use.

NOTE:
The GenerLok™ power cord is the only power cord approved for use with GenerLink™. The GenerLok™ connector can only be used with GenerLink™. It is not compatible for use with any other electric appliance/device.

Technical Fact Sheet

GenerLink™ Specifications and Technical Information

LISTED

Physical:

Diameter:	6 ½ in.
Depth:	5 ¼ in.
Weight w/o surge:	5 ½ lbs
Weight with surge:	5 ¾ lbs
Socket Style:	Ring or Ring-less, 200 Amp, 4 jaw

Electrical:

Source Compatibility:	200 Ampere Service or Less
Withstand Current:	8,000 Amperes rms symmetrical at .5 pf, 240 Volts, 60 Hz 6000 Amperes for 6 cycles at .7 - .8 pf, 240 Volts, 60 Hz
Generator Input:	8.5kW Continuous†, 120/240 Volt 8.5kW Continuous for MA-23
Connection:	Proprietary GenerLok™ QuickConnect Power Cord

Operational:

Transfer Type:	Break-Before-Make
Transfer Delay:	2-3 Seconds
Life Cycle:	300,000 Operations
Temperature Range:	-30°C to 60°C External Ambient

Features:

Generator Input Protection:	Generator Input Voltage ≥ 200 Volts Supplemental Overcurrent ≤ 40 A
Utility Input Protection:	Utility Input Voltage ≥ 180 Volts Over-Temperature Trip ≥ 105°C
Load Protection:	Integrated Whole-House Surge Protection Model MA 23-S Only (Optional) Type 1 - 75kA per phase
Status Indication:	Long-life LED indicators show utility power availability and/or fault presence
Listings:	UL 1008M - Meter socket transfer switch

† 3 hours at 25°C/ 77°F ambient

*When protected by max 200 A circuit breaker in series with 100 A branch circuit breaker

WORKSHEET A

Generator Size: (Watts) [ ]

B Load	C Start Factor		D Run Watts		E Load Watts
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	

F Lights	Wattage		Number		
	60	X		=	
	100	X		=	
	150	X		=	

Total: [ ] **G**

Surge Protection

What are Surges?

A surge is a sudden, unpredictable, powerful increase in voltage that can damage or destroy household appliances and electronic equipment. Surge damage can happen all at once in cases of high voltage surges or over a period of time when lower voltage surges are experienced consistently.

How to Protect Your Home and Appliances from Voltage Surges.

Surges can occur on power, cable TV, telephone and data lines. They are caused by many sources: lightning, the switching of utility equipment on the electric grid, electrical accidents, heavy motor or heavy loads from a nearby industry or locally, by microwave ovens, laser printers and copiers, air conditioner compressor motors and even lights being turned on and off.

- GenerLink™ with Surge Protection:
- Protects household equipment including appliances and hard-wired systems not protected by power strips. Plus, it provides enhanced protection for household electronics.
- Provides protection beyond typical point-of-use power strips and plug-ins.
- Produces an audible alarm when the devices requires service.
- Protects against spikes up to 100,000 amps on the electric system.
- Provides a white goods warranty of $1,000/appliance and/or $10,000/house.
- Is meter-based and will provide the first line of defense at your home's service entrance and for your wired appliances from voltage surges. (Refer to the Terms and Conditions for service instructions)

To protect sensitive plugged-in appliances and equipment, you should combine GenerLink™ (with surge protection) with outlet-strip/ plug-in surge protectors. Purchase high quality plug-in strips to protect sensitive equipment and appliances such as your computer and audio/visual equipment. Always consult your specific appliance owner's manual before installing plug-in surge strips.

Safety Tips

Do not wait for an emergency to learn how to connect your generator and select loads to GenerLink™. (See Setup Procedures for detailed information.)

- Do not connect the GenerLok™ power cord to GenerLink™ if the red fault status light is continuously illuminated.
- Never connect or disconnect the GenerLok™ power cord to/from your portable generator while the generator is operating. Turn off the portable generator and turn off all circuits in your breaker panel before connecting or disconnecting the power cord.
- Before using the GenerLok™ power cord, check the cord for exposed wires and/or frayed insulation.
- Keep the power cord stored in a dry, safe location when not in use.
- Ensure that the GenerLok™ power cord is in a protected area where it will not be damaged by lawn mowers, power tools or vehicles.
- Never attempt to remove, repair, dismantle, modify, or alter GenerLink™ once it has been installed.

CAUTION

Always locate and operate your generator in accordance with the manufacturer's instructions as outlines in the generator owner's manual.

SAMPLE WORKSHEET

Generator Size: (Watts) *9600*

B Load	C Start Factor		D Run Watts		E Load Watts
Refrigerator	*3*	X	*1000*	=	*3000*
Sump Pump	*2*	X	*1000*	=	*2000*
Computer	*1*	X	*200*	=	*200*
Fan (central) ¼ hp	*3*	X	*400*	=	*1200*
		X		=	
		X		=	

Lights	Wattage		F Number		
	60	X	*5*	=	*300*
	100	X	*1*	=	*100*
	150	X	*0*	=	*0*

Total: *6800* **G**

Notes to Appliance Usage Guide

The wattages on the Appliance Energy Guide are estimates. The estimated wattage required for your appliances can be easily calculated. *(NOTE: 1 kW=1000 watts; 2 kW=2000 watts and so on.)* The formula for finding wattage is: Volts x Amps = Watts (running). Always use starting factor when calculating electrical load requirements for your generator. Select the appliances you want to operate and add the starting wattages together to determine if they can all be operated at the same time without exceeding the capacity of your generator. NOTE: individual circuit breakers on your breaker panel may control more than one appliance. Always determine which appliances/loads are connected to specific breakers.

CAUTION

Do not turn on your home's heat pump or central air conditioning while using GenerLink™. The starting wattage for these devices exceeds GenerLink™'s 40-amp capacity.

Worksheet Instructions

Write down the maximum and continuous wattage output ratings for your generator in the boxes marked A.

From the Appliance Energy Guide, select the appliances that you wish to operate and write them in column B. For each selected appliance, write its corresponding starting factor and run watts in columns C and D respectively.

For each appliance that you have selected, multiply the starting factor by the run watts and write the results or the load watts in column E. NOTE: Only items that start simultaneously should be tallied in column D.

Finally, sum up all of the load wattages for each appliance and lights in column E. Add each appliances load watts and write the number in box G. The number in box G represents the total amount of load you plan to run on your portable generator. Be sure that the total in box G does not exceed the generator size in box A.

Always select a generator that is as large or larger than the estimates for both running and starting wattages.

Selecting a Portable Generator

What Kind of Generator Do I Need?

There are a wide variety of portable generators available for purchase. Some are more suitable than others for connecting to your house. When selecting a portable generator to connect to your house, you should ensure the generator:

- will not damage sensitive electronic appliances/equipment,
- provides the capacity to start needed motor loads, such as a well or sump pump
- has the necessary four-wire 20-amp or 30-amp receptacle required to connect to GenerLink™ and
- has a 120/240-volt connector.

As a guide, GenerLink™ should be used with a generator that has the following features:

- a peak rating sufficient to start the largest motor you will be running
- an automatic voltage regulator
- 'low oil' shut down
- L14-20 or L14-30 locking or straight receptacles for connecting to GenerLink™ and
- 120/240-volt output

The quality of power produced by a portable generator is also an important factor to consider when selecting your generator. If the voltage output is too low, it could cause motors, such as your refrigerator or furnace motor, to overheat. If the voltage output is too high, it could damage sensitive electronic equipment such as your computer or the digital controls on your heating system.

To maximize your generator's power quality, it is recommended that your generator have automatic voltage regulation. Electronic voltage regulation is preferred over capacitor or condenser type regulation in instances where sensitive electronic equipment is being operated.

What Size Generator Do I Need?

During a power outage, GenerLink™ allows you to select the combination of loads/appliances you want to operate by simply switching breakers in the household breaker panel. This flexibility makes generator sizing easy.

You will want a generator that can run the largest appliances and motors you will need during an outage. You can always run other smaller loads/appliances by rotating them on and off as necessary.

For example, if you have a generator with 8,500 continuous watts of capacity, during a power outage, you can run the hot water heater (typically 4,800 watts) by simply turning off the majority of other household breakers until the water tank heats up. Once the water is heated, shut off the water heater breaker and switch the other household circuit breakers back on.

To determine the loads you can support with a portable generator, you must consider both the "running watt" and the "starting watt" requirements of the loads you want to operate. (See Appliance Energy Guide in this manual)

You can purchase or use a generator of any size provided the generator is equipped with a 4 wire, 120/240-volt receptacle rated at 20-amps or 30-amps. GenerLink™ is designed to be compatible with 20-amp or 30-amp connectors. GenerLink™ is not rated to be compatible with larger current outputs and will electronically disconnect if you are generating outputs larger than 40-amps.

Appliance Usage Guide

Equipment	Starting Factor	Running Wattage (avg.)
Water Heater (50 gallon)	1	4500-5000
Portable Heater with fan	2	500-1500
Furnace Fan (Central) - 1/4 HP	3	400
1/3 HP	3	450
1/2 HP	3	600
Computer	1	200
Fax Machine	1	50-1000
Space Heater	1	500-1500
Refrigerator/Freezer	3	750
Home Security System	1	200
Lights	1	40-150
Range w/Oven	1	12200
- Small Burner	1	1300
- Large Burner	1	2400
Garage Door Opener - 1/3 HP	3	750
- 1/2 HP	3	1050
Well Pump - 1/3 HP	3	750
1/2 HP	3	1000
3/4 HP	3	1500
Submersible Sump Pump - 1/2 HP	3	1000
Electric Heat Pump	3	6000
Central A/C 3 ton	3	6000
Dishwasher w/o hot water	2	1200
Television	1	150-400
Radio	1	70-200
Microwave	1	600-1500
Coffee maker	1	750-1200
Toaster	1	1100
Hair Dryer	2	600-1400
Washing Machine w/o Hot Water	2	1000
Clothes Dryer	2	4850
Air Cleaner	2	50
Dehumidifier	2	840
Humidifier	1	177
Vacuum Cleaner	1	800