

A NOTE ON AIR CONDITIONING

For small window air conditioners (below 12,000 BTU/H), we recommend plugging the unit into a dedicated outlet. Do not use power strips or extension cords as they may overheat and become a fire hazard.

For air conditioners larger than 12,000 BTU/H, it is important that you hire a qualified electrician to determine if your existing electrical service is adequate to support your new air conditioner.

For air conditioners larger than 12,000 BTU/H and below 36,000 BTU/H, you should have your electrician install a dedicated circuit for the unit.

Please bear in mind that large air-conditioners (especially above 36,000 BTU/H) may cause power quality problems that may not be resolved by a simple service upgrade. In some cases, these disturbances could affect your neighbors. Therefore, instead of a single large unit to cool several rooms, use smaller units to cool individual rooms. This reduces the inrush current and the resulting voltage drop in your home, while providing you with an opportunity to save energy.

HECO CAN HELP YOU

If you notice any unusual situations with electrical equipment within or near your home such as sustained periods of bright or dim lights, damaged cable or utility poles, tree branches touching overhead lines, or arcing transformers, please call **HECO's Service Call Line at 548-7961**.

Call our **Customer Assistance Center at 548-7311** for a voltage check if you notice your lights flickering or have any other power quality concerns. Simple, preliminary tests by our Trouble Crew could show whether the problem is on the utility's system or internal to your home's electrical system. If further testing or monitoring is required, HECO has specialized Power Quality equipment to measure and record power and a group of trained Power Quality engineers to analyze data and provide recommendations and solutions to you.

While we cannot protect electricity supplies from all disturbances, please remember that help is always available from HECO!

A RESIDENTIAL CUSTOMER'S TROUBLESHOOTING GUIDE TO POWER QUALITY PROBLEMS

Power Quality disturbances can be described as any change in the power entering your electrical equipment or appliances that interferes with its normal operation. In some cases, the disturbance may originate outside your home. But in many cases, site conditions such as deteriorated or improperly sized household wiring and loose or corroded equipment connections may actually cause or worsen power quality disturbances.

Why worry about power quality? The simple answer is that most households today use electronic products that are sensitive to even brief electrical variations. These products include common items such as electronic ranges, entertainment systems, answering machines, and personal computers.

This brochure lists a few common residential power quality problems and steps you could take to solve them. If you are interested in additional information, please visit our website at **www.heco.com** and click on Residential Services, Power Quality on the top menu bar.



Hawaiian Electric Company, Inc.
Giving you the power

PROBLEM	POSSIBLE CAUSE	PREVENTATIVE MEASURES	SOLUTION
Lights become unusually bright; appliances become very hot to the touch.	Loose or damaged neutral wire or connection.	When moving into an older residence, it's a good idea to have a qualified electrician check the wiring and connections.	<ol style="list-style-type: none"> 1. Turn off the lights and appliances as this may indicate a fire hazard. 2. Contact HECO's 24-Hr. Service Call Line at 548-7961. 3. If HECO determines the cause to be within your home (after the meter), contact a qualified electrician to find and fix the problem.
Lights flicker at random times; appliances shut off randomly.	Loose wiring or connection(s)	See above.	<ol style="list-style-type: none"> 1. Contact HECO's 24-Hr. Service Call Line at 548-7961. 2. If HECO determines the cause to be within your home (after the meter), contact a qualified electrician to find and fix the problem.
Lights dim momentarily or computer or TV shuts off when a motor (could be a hair dryer, air conditioner, or garbage disposer) is started.	Inrush current from motor starting causes voltage to momentarily sag.	<ul style="list-style-type: none"> • Use properly sized, dedicated circuits for air conditioners. • Avoid having sensitive electronic equipment on the same circuit as motors. • Save data on computers often! 	<ol style="list-style-type: none"> 1. Plug motorized equipment into a different outlet on another circuit. 2. Use a properly sized UPS to back up power on computers. 3. See our special note about air conditioning on back leaf of this card.
Sensitive electronic devices (e.g., computers, fax machines, answering machines, etc.) fail during storm conditions or power outage.	Voltage transient (surge or spike)	<ul style="list-style-type: none"> • Turn off all electrical appliances during storms or power outages (until storm subsides or power is restored). • Use surge protection (see next column). 	<ol style="list-style-type: none"> 1. Plug sensitive electronic devices into plug-in surge protection device (meeting UL Standard 1449 2nd Edition). 2. Consider having a qualified electrician install a surge arrester at the main circuit breaker for complete protection.
Audio (stereo or TV) equipment hums.	<ul style="list-style-type: none"> • Ground loop. • Fluorescent light ballast interference. • Radio transmission interference. 	<ul style="list-style-type: none"> • Assure that all circuits are properly grounded (i.e., grounded at a single point). • Use high quality shielded cables to speakers. 	<ol style="list-style-type: none"> 1. Try plugging the appliance into a different outlet on another circuit. 2. Contact a qualified electrician to determine if your grounding is correct.