Travel Power Adapters: How to Choose

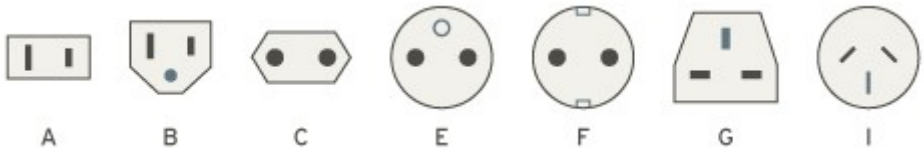
Are you preparing to travel internationally and want to take items that require electricity? In most cases, you'll need only an **adapter plug**; in some cases, you'll need a **voltage converter** or **transformer**, too.

Shop REI's selection of adapters and converters.

Adapter Plugs

If you're traveling outside of North America, you'll most likely need an adapter plug. All over the world, there are different types of electrical wall outlets. Unless your destination country has the same outlet configuration as your home country, you'll need an adapter. Adapter plugs do not convert electricity, they simply allow your device's plug to fit into the foreign outlet.

Here are some common plug types:



The chart below lists suitable adapter plug models for the most common travel destinations.

Adapter Plug Quick Guide

Common Destinations	Outlet Type
Japan, Taiwan, Central America, Caribbean, South America	A,B
Europe, Middle East, Israel, some Asian countries, some African countries	C,E,F
United Kingdom, Ireland, Hong Kong, Singapore, Malaysia, some African countries	G
China, Australia, New Zealand, Fiji	I

For a complete list of countries and their power supply and outlet types, see our companion REI Expert Advice article, Voltage and Outlets by Country.

Electricity Converters and Transformers

If you're traveling with certain devices, such as older hair dryers and irons, you may also need a voltage converter or transformer.

The world runs on two types of electricity: 110/125V or 220/240V. North American devices run on 110/125V electricity while the majority of the world runs on 220/240V. Converters and transformers change the voltage of electricity to match the voltage of your device.

How to Determine if You Need a Transformer or Converter

The label on your device will help determine if a voltage converter or transformer is necessary. This label may be: a) affixed directly to the back of the device; b) on the AC transformer box of the power supply lead; or c) molded into the plastic on the plug. It is often in very small print.

The INPUT line contains the key information—whether the voltage (V) is single, dual or multi.

Single-voltage items have a small voltage range (such as 100–120V). These small ranges are designed to accommodate voltage fluctuations only and will not accommodate a 220V power supply. Single-voltage devices include older appliances, such as hair dryers and irons.

Dual-voltage devices use a slash to separate the 2 voltages. Example: 120V/240V. Common dual-voltage devices include newer hair dryers, electric shavers and toothbrushes, irons, coffee makers and tea kettles. These do not require a transformer or converter.

Multi-voltage items use a dash to indicate the range of voltages. Example: 100–240V. Common multi-voltage devices include laptops, e-readers, tablets, smartphones, cell phones, MP3 players, cameras and battery chargers. These do not require a transformer or converter.

Converter or Transformer?

Single-voltage **electrical** devices (ones that use heating elements or mechanical motors) can use a converter or a transformer.

Single-voltage **electronic** devices (ones that use chips, circuits or electronic motors) require a transformer.

Good news: Many converters operate as both a converter for high-watt electrical devices **and** a transformer for low-watt electronic devices.

Watts (W) is the amount of power a device uses. Low watts range up to 25W or 50W, depending on the converter. This would be typical of small personal electronics. Electrical heating units will require a “high” setting as they may consume 1000W to 2000W.

Make sure to check the product specifications on your devices and make certain that your converter is rated for the specified power.

Device Conversion Chart

If your device is rated for a single voltage (such as 110V), and this is different than the power supply at your destination (such as 220V), you will need a voltage converter or transformer.

Device and Type of Voltage (INPUT)	Power Supply in Destination Country	Converter Needed?	Transformer Needed?
Electrical, single: 110, 115, 120, 125V	220, 230, 240V	Yes, or a transformer	Yes, or a converter
Electronic, single: 110, 115, 120, 125V	220, 230, 240V	No	Yes

Electricity Guide: Voltage and Outlets by Country

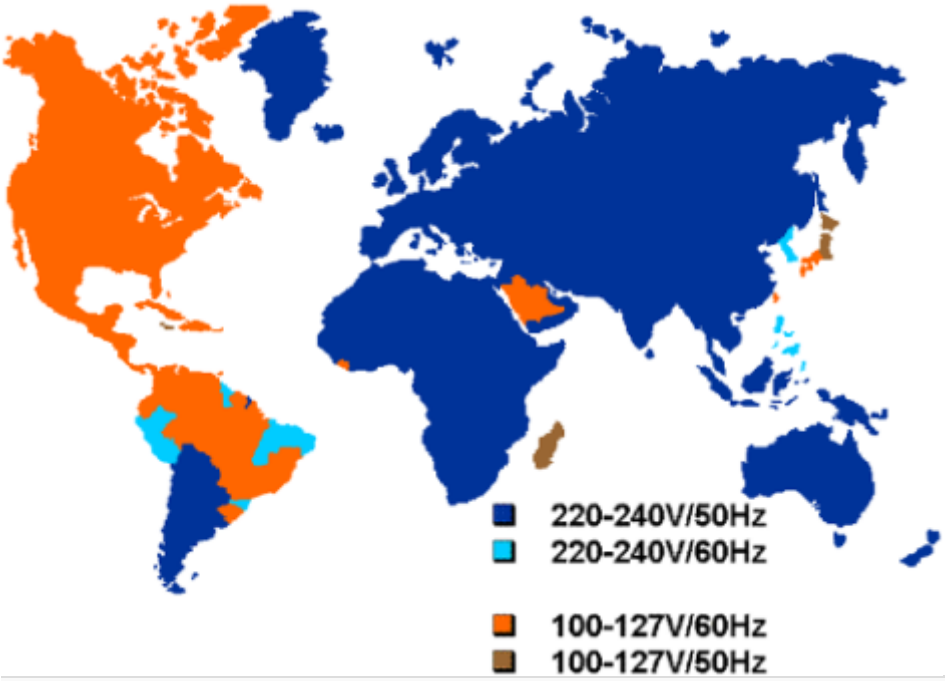
If you plan on traveling with a *single-voltage device* (electric or electronic), you need to know the power supply at your destination to ensure your device will power up safely. For example, your 110V electric toothbrush will not work with, say, Italy's 230V power unless you have an adapter plug AND a converter.

Not sure if you have any single-voltage items? See the REI Expert Advice article, Electricity Guide for Travelers, to determine if you do.

The power supply (voltage and frequency) and the types of outlets differ between countries. There is no international standard.

> **Tip:** It's easier to purchase adapter plugs or converters before you go; they can be surprisingly hard to find in your destination country.

Use the map and chart below to locate power information by country. The **Outlet Type** column corresponds to our Electricity FAQs and Glossary article. Note: The letter used to denote the adapter plug type may not correspond with a plug manufacturer's description or labeling.



COUNTRY	VOLTAGE	FREQUENCY	OUTLET TYPE
Afghanistan	220 V	50 Hz	C / F
Albania	230 V	50 Hz	C / F
Algeria	230 V	50 Hz	C / F
American Samoa	120 V	60 Hz	A / B / F / I
Andorra	230 V	50 Hz	C / F
Angola	220 V	50 Hz	C
Anguilla	110 V	60 Hz	A
Antigua	230 V	60 Hz	A / B
Argentina	220 V	50 Hz	C / I
Armenia	230 V	50 Hz	C / F
Aruba	120 V	60 Hz	A / B / F
Australia	240 V	50 Hz	I
Austria	230 V	50 Hz	C / F
Azerbaijan	220 V	50 Hz	C / F
Azores	230 V	50 Hz	B / C / F
Bahamas	120 V	60 Hz	A / B
Bahrain	230 V	50 Hz	G
Balearic Islands	230 V	50 Hz	C / F
Bangladesh	220 V	50 Hz	C / D / G / K
Barbados	115 V	50 Hz	A / B
Belarus	220 V	50 Hz	C / F
Belgium	230 V	50 Hz	E
Belize	110 V / 220 V	60 Hz	B / G

Benin	220 V	50 Hz	E
Bermuda	120 V	60 Hz	A / B
Bhutan	230 V	50 Hz	D / F / G
Bolivia	230 V	50 Hz	A / C
Bosnia & Herzegovina	230 V	50 Hz	C / F
Botswana	230 V	50 Hz	D / G
Brazil	127 V / 220 V *	60 Hz	A / B / C / I
Brunei	240 V	50 Hz	G
Bulgaria	230 V	50 Hz	C / F
Burkina Faso	220 V	50 Hz	C / E
Burundi	220 V	50 Hz	C / E
Cambodia	230 V	50 Hz	A / C / G
Cameroon	220 V	50 Hz	C / E
Canada	120 V	60 Hz	A / B
Canary Islands	230 V	50 Hz	C / E / L
Cape Verde	230 V	50 Hz	C / F
Cayman Islands	120 V	60 Hz	A / B
Central African Republic	220 V	50 Hz	C / E
Chad	220 V	50 Hz	D / E / F
Channel Islands (Guernsey & Jersey)	230 V	50 Hz	C / G
Chile	220 V	50 Hz	C / L
China, People's Republic of	220 V	50 Hz	A / C / I
Colombia	110 V	60 Hz	A / B

Faeroe Islands	230 V	50 Hz	C / K
Falkland Islands	240 V	50 Hz	G
Fiji	240 V	50 Hz	I
Finland	230 V	50 Hz	C / F
France	230 V	50 Hz	E
French Guyana	220 V	50 Hz	C / D / E
Gabon	220 V	50 Hz	C
Gambia	230 V	50 Hz	G
Gaza	230 V	50 Hz	H
Georgia	220 V	50 Hz	C / F
Germany	230 V	50 Hz	C / F
Ghana	230 V	50 Hz	D / G
Gibraltar	230 V	50 Hz	C / G
Great Britain (see United Kingdom)			
Greece	220 V	50 Hz	C / D / E / F
Greenland	230 V	50 Hz	C / K
Grenada	230 V	50 Hz	G
Guadeloupe	230 V	50 Hz	C / D / E
Guam	110 V	60 Hz	A / B
Guatemala	120 V	60 Hz	A / B / G / I
Guinea	220 V	50 Hz	C / F / K
Guinea-Bissau	220 V	50 Hz	C
Guyana	240 V	60 Hz	A / B / D / G

Haiti	110 V	60 Hz	A / B
Honduras	110 V	60 Hz	A / B
Hong Kong	220 V	50 Hz	G
Hungary	230 V	50 Hz	C / F
Iceland	230 V	50 Hz	C / F
India	230 V	50 Hz	C / D / M
Indonesia	230 V	50 Hz	C / F
Iran	230 V	50 Hz	C / F
Iraq	230 V	50 Hz	C / D / G
Ireland (Eire)	230 V	50 Hz	G
Isle of Man	230 V	50 Hz	C / G
Israel	230 V	50 Hz	H / C
Italy	230 V	50 Hz	C / F / L
Jamaica	110 V	50 Hz	A / B
Japan	100 V	50 Hz / 60 Hz **	A / B
Jordan	230 V	50 Hz	C / D / F / G / J
Kenya	240 V	50 Hz	G
Kazakhstan	220 V	50 Hz	C / F
Kiribati	240 V	50 Hz	I
Korea, North	110 V / 220 V	60 Hz	A / C
Korea, South	220 V	60 Hz	A / B / C / F
Kuwait	240 V	50 Hz	C / G
Kyrgyzstan	220 V	50 Hz	C / F

Laos	230 V	50 Hz	A / B / C / E / F
Latvia	230 V	50 Hz	C / F
Lebanon	230 V	50 Hz	C / D / G
Lesotho	220 V	50 Hz	M
Liberia	120 V	60 Hz	A / B
Libya	127 V / 230 V	50 Hz	D / F
Liechtenstein	230 V	50 Hz	J
Lithuania	230 V	50 Hz	C / F
Luxembourg	230 V	50 Hz	C / F
Macau	220 V	50 Hz	D / G
Macedonia	230 V	50 Hz	C / F
Madagascar	127 V / 220 V	50 Hz	C / D / E / J / K
Madeira	230 V	50 Hz	C / F
Malawi	230 V	50 Hz	G
Malaysia	240 V	50 Hz	G
Maldives	230 V	50 Hz	D / G / J / K / L
Mali	220 V	50 Hz	C / E
Malta	230 V	50 Hz	G
Martinique	220 V	50 Hz	C / D / E
Mauritania	220 V	50 Hz	C
Mauritius	230 V	50 Hz	C / G
Mexico	127 V	60 Hz	A
Micronesia, Federal States of	120 V	60 Hz	A / B
Moldova	230 V	50 Hz	C / F

Monaco	230 V	50 Hz	C / D / E / F
Mongolia	230 V	50 Hz	C / E
Montenegro	230 V	50 Hz	C / F
Montserrat	230 V	60 Hz	A / B
Morocco	220 V	50 Hz	C / E
Mozambique	220 V	50 Hz	C / F / M
Myanmar (Burma)	230 V	50 Hz	C / D / F / G
Namibia	220 V	50 Hz	D / M
Nauru	240 V	50 Hz	I
Nepal	230 V	50 Hz	C / D / M
Netherlands	230 V	50 Hz	C / F
Netherlands Antilles	127 V / 220 V	50 Hz	A / B / F
New Caledonia	220 V	50 Hz	F
New Zealand	240 V	50 Hz	I
Nicaragua	120 V	60 Hz	A
Niger	220 V	50 Hz	A / B / C / D / E / F
Nigeria	230 V	50 Hz	D / G
Norway	230 V	50 Hz	C / F
Oman	240 V	50 Hz	C / G
Pakistan	230 V	50 Hz	C / D
Palau	120 V	60 Hz	A / B
Panama	110 V	60 Hz	A / B
Papua New Guinea	240 V	50 Hz	I
Paraguay	220 V	50 Hz	C

Peru	220 V	60 Hz	A / B / C
Philippines	220 V	60 Hz	A / B / C
Poland	230 V	50 Hz	C / E
Portugal	230 V	50 Hz	C / F
Puerto Rico	120 V	60 Hz	A / B
Qatar	240 V	50 Hz	D / G
Réunion Island	230 V	50 Hz	E
Romania	230 V	50 Hz	C / F
Russian Federation	220 V	50 Hz	C / F
Rwanda	230 V	50 Hz	C / J
St. Kitts and Nevis	230 V	60 Hz	D / G
St. Lucia	230 V	50 Hz	G
St. Vincent	230 V	50 Hz	A / C / E / G / I / K
Samoa	230 V	50 Hz	I
San Marino	230 V	50 Hz	F / L
Saudi Arabia	110 V / 220 V ***	60 Hz	A / B / C / G
Senegal	230 V	50 Hz	C / D / E / K
Serbia	230 V	50 Hz	C / F
Seychelles	240 V	50 Hz	G
Sierra Leone	230 V	50 Hz	D / G
Singapore	230 V	50 Hz	G
Slovakia	230 V	50 Hz	E
Slovenia	230 V	50 Hz	C / F

Somalia	220 V	50 Hz	C
South Africa	230 V	50 Hz	D / M
Spain	230 V	50 Hz	C / F
Sri Lanka	230 V	50 Hz	D / G / M
Sudan	230 V	50 Hz	C / D
Suriname	127 V	60 Hz	C / F
Swaziland	230 V	50 Hz	M
Sweden	230 V	50 Hz	C / F
Switzerland	230 V	50 Hz	J
Syria	220 V	50 Hz	C / E / L
Tahiti	220 V	50 Hz / 60 Hz	C / E
Tajikistan	220 V	50 Hz	C / F
Taiwan	110 V	60 Hz	A / B
Tanzania	230 V	50 Hz	D / G
Thailand	220 V	50 Hz	A / B / C
Togo	220 V	50 Hz	C
Tonga	240 V	50 Hz	I
Trinidad & Tobago	115 V	60 Hz	A / B
Tunisia	230 V	50 Hz	C / E
Turkey	230 V	50 Hz	C / F
Turkmenistan	220 V	50 Hz	C / F
Uganda	240 V	50 Hz	G
Ukraine	230 V	50 Hz	C / F
United Arab Emirates	240 V	50 Hz	G

United Kingdom	230 V	50 Hz	G
United States of America	120 V	60 Hz	A / B
Uruguay	220 V	50 Hz	C / F / I / L
Uzbekistan	220 V	50 Hz	C / F
Venezuela	120 V	60 Hz	A / B
Vietnam	220 V	50 Hz	A / C / G
Virgin Islands	110 V	60 Hz	A / B
Yemen	230 V	50 Hz	A / D / G
Zambia	230 V	50 Hz	C / D / G
Zimbabwe	240 V	50 Hz	D / G

* Brazil has no standard voltage. Most states use 127V electricity (Acre, Amapá, Amazonas, Espírito Santo, Mato Grosso do Sul, Maranhão, Pará, Paraná, Rondônia, Roraima, Sergipe and Minas Gerais). Other (mainly northeastern) states are on 220V (Alagoas, Brasília, Ceará, Mato Grosso, Goiás, Paraíba, Rio Grande do Norte, Santa Catarina and Tocantins). Although in most parts of the states of Bahia, São Paulo, Rio de Janeiro and Rio Grande do Sul 127V is used, the cities of Santos, Jequié, Jundiaí, São Bernardo do Campo, Novo Friburgo, Bagé, Caxias do Sul and Pelotas run on 220V. The states of Pernambuco and Piauí use 220V, except for the cities of Paulista and Teresina (127V).

** Although the main voltage in Japan is the same everywhere, the frequency differs from region to region. Eastern Japan uses predominantly 50 Hz (Tokyo, Kawasaki, Sapporo, Yokohama, Sendai), whereas Western Japan prefers 60 Hz (Osaka, Kyoto, Nagoya, Hiroshima).

*** Saudi Arabia uses 110V in many parts of the country, such as the Dammam and al-Khobar area (situated in the eastern province of Ash Sharqiyah). 220V is commonly used as well, especially in hotels.

Updates and corrections: Countries can and do change their name, power supply and outlet design. The information provided here is a guideline and cannot to be relied upon as 100% accurate. We welcome any updates or corrections from your personal traveling experience.

By John Higgins

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