

Electric Power Around The World

 kropla.com/electric2.htm

The table below summarizes information on the electrical systems in use in most countries of the world.

The voltages listed here are the "nominal" figures reported to be in use at most residential or commercial sites in the country or area named. Most electrical power systems are prone to slight variations in voltage due to demand or other factors. Many former 220 V countries have converted or are in the process of converting to the EU standard of 230 V. Generally, this difference is inconsequential, as most appliances are built to tolerate current a certain percentage above or below the rated voltage. However, severe variations in current can damage electrical equipment.

The electric power frequency is shown in the number of hertz (cycles per second). Even if voltages are similar, a 60-hertz clock or tape recorder may not function properly on 50 hertz current. All systems described here use alternating current (AC). The plug types listed indicate all types known to be in use in that country. Not all areas of a country may use all types of plugs listed for that country, since there may be regional differences based on the power system in a certain area.

Finally, I've only included information that is likely to be relevant for travelers. Just about everywhere listed here has higher voltage lines available for heavy duty appliances (not to mention commercial or industrial applications). While this would be relevant for those moving to another country, I'm assuming most travelers will leave their clothes dryers, air conditioners and arc welders at home! If you are interested in converting electrical units or sizing a generator try these Power Generator Calculators (for calculating generator size in kW, converting kW to kVA, kVA to kW, Volts, Amps, and more).

COUNTRY	VOLTAGE	FREQUENCY	PLUG	COMMENTS
Afghanistan	220 V	50 Hz	C & F *	* A UN correspondent reports C and F common in Kabul, but its likely a variety of plugs may be used around the country. Some sources report Type D also in use. Other reports indicate voltage variances from 160V to 280V.
Albania	220 V*	50 Hz	C & F	*Voltage variations common
Algeria	230 V	50 Hz	C* & F	*A variation of Type C with a ground post offset about 1/2-inch from center may also be found.
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 (maybe B)	
Antigua	230 V*	60 Hz	A & B	*Airport area is reportedly Antigua power is 110 V.
Argentina	220 V	50 Hz	C & I*	*Neutral and line wires are reversed from that used in Australia and elsewhere. Click here for more.
Armenia	220 V	50 Hz	Type C Electrical Outlet & F	
Aruba	127 V*	60 Hz	A, B & F	*Lago Colony 115V
Australia	240 V	50 Hz	I	*Outlets typically controlled by adjacent switch. Click here for

more.

Austria	230 V	50 Hz	F	Type C may be found, but rare.
Azerbaijan	220 V	50 Hz	C, F	
Azores	220 V*	50 Hz	B, C, & F	*Ponta Delgada 110 V; to be converted to 220 V
Bahamas	120 V	60 Hz	A & B	
Bahrain	230 V*	50 Hz*	G	*Awali 110 V, 60 Hz
Balearic Islands	220 V	50 Hz	C & F	
Bangladesh	220 V	50 Hz	A, C, D, G & K	
Barbados	115V	50 Hz	A, B	
Belarus	220 V	50 Hz	C & F	
Belgium	230 V	50 Hz	E	Notes from correspondents: a 'C' style plug can be used with 'E' and 'F' receptacles. All double-insulated appliances are indeed fitted with a 'C' plug, and can be used in any compatible receptacle (C E F and narrow L). Type C receptacles are prohibited in Belgium.
Belize	110/220 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	Type M plugs also identified by some sources.
Bolivia	220/230 V*	50 Hz	A & C	*La Paz & Viacha 115V
Bosnia	220 V	50 Hz	C & F	
Botswana	231V	50 Hz	M	Type G may be found, but rare.
Brazil	110/220 V*	60 Hz	A & B, C	*127 V found in states of Bahia, Paraná (including Curitiba), Rio de Janeiro, São Paulo and Minas Gerais (though 220 V may be found in some hotels). Other areas are 220 V only, with the exception of Fortaleza (240 V). Outlets (click for more) are often a combination of type A and C and can accept either type plug.
Brunei	240 V	50 Hz	G	
Bulgaria	230 V	50 Hz	C* & F*	*Outlets are reported as type F, though both type C and F plugs may be encountered.
Burkina Faso	220 V	50 Hz	C & E	
Burundi	220 V	50 Hz	C & E	
Cambodia	230 V	50 Hz	A & C*	*Some outlets are a combination of type A and C and can accept either type plug. Plug G may be found in some hotels.
Cameroon	220 V	50 Hz	C, E	
Canada	120 V	60 Hz	A & B	

Canary Islands	220 V	50 Hz	C , E , & L	Type L plugs/outlets may have different pin spacing. The smaller and closer pins are for a rated current of 10 A, the bigger and wider pins are for a rated current of 16 A.
Cape Verde	220 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	230 V	50 Hz	G	
Chile	220 V	50 Hz	C & L	
China, People's Republic of	220 V	50 Hz	A , I , G	The "official" plug type is like type A but slightly shorter and without holes in blades. Type A and I outlets are common, and Type G might also be found. Click here for photos and more info.
Colombia	110 V	60 Hz	A & B	
Comoros	220 V	50 Hz	C & E	
Congo, People's Rep. of	230 V	50 Hz	C & E	
Congo, Dem. Rep. of (<i>former Zaire</i>)	220 V	50 Hz	C & D	
Cook Islands	240 V	50 Hz	I	
Costa Rica	120 V	60 Hz	A & B	
Côte d'Ivoire (Ivory Coast)	220 V	50 Hz	C & E	
Croatia	230 V	50 Hz	C & F	
Cuba	110/220 V	60 Hz	A & B , C , F & L	Most older hotels 110 V. Some newer hotels 220 V. Some outlets are a combination of type A and C and can accept either type plug.
Cyprus	240 V	50 Hz	G	
Czech Republic	230 V	50 Hz	E	
Denmark	230 V	50 Hz	C & K	Denmark's connectors have slight differences from those used elsewhere. While pin diameter and spacing is standard, outlets may have different housing depths which could interfere with standard adaptors -- one report says this is due to "childproofing." Also, Plug C fits into K -type outlets (but not vice versa).
Djibouti	220 V	50 Hz	C & E	
Dominica	230 V	50 Hz	D & G	

Dominican Republic	110 V	60 Hz	A	Type J may exist in some hotels.
East Timor	220 V	50 Hz	C, E, F, I,	A UN correspondent reports "power is poor in the country with frequent brownouts and blackouts. I suspect that surges are frequent as we go through a lot of surge-protecting power bars." Further he reports than Type I is common as much construction is done by Australians; type C is common in building built during Indonesian occupation; type E is less common; type F is common in offices but not hotels.
Ecuador	120-127 V	60 Hz	A & B	
Egypt	220 V	50 Hz	C	
El Salvador	115V	60 Hz	A & B	
England (See United Kingdom)				
Equatorial Guinea	220 V*	50 Hz	C & E	*Voltage varies between 150 & 175V with frequent outages
Eritrea	230 V	50 Hz	C	
Estonia	230 V	50 Hz	F	Type C may be found in older buildings. Type E plugs may work in either C or F type outlets.
Ethiopia	220 V	50 Hz	D, J, & L	
Faeroe Islands	220 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	Type C plugs may be found on some appliances, and will fit the Type E outlet. Type C outlets may be found in older buildings. Type A may be found in older buildings but is illegal.
French Guiana	220 V	50 Hz	C, & E	
Gaza	230 V	50 Hz	H	
Gabon	220 V	50 Hz	C	
Gambia	230 V	50 Hz	G	
Georgia	220 V	50 Hz	C	
Germany	230 V	50 Hz	C & F	
Ghana	230 V	50 Hz	D & G	
Gibraltar	240 V	50 Hz	C & G	
Great Britain (See United Kingdom)				

Kingdom)				
Greece	220 V	50 Hz	C, D, E & F	
Greenland	220 V	50 Hz	C & K	
Grenada (Windward Is.)	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	*Inside the capital city of Georgetown, both 120 V and 240 V at either 50 or 60 Hz are found, depending on the part of the city (50 Hz most common). Actual voltage may vary from area to area.
Haiti	110 V	60 Hz	A & B	
Honduras	110 V	60 Hz	A & B	
Hong Kong	220 V*	50 Hz	G, M	Type M replaced by Type G but still found.
Hungary	230 V	50 Hz	C & F	
Iceland	220 V	50 Hz	C & F	
India	230 V	50 Hz	C & D	Click here for photos and more info.
Indonesia	127/230 V*	50 Hz	C, F & G	*Conversion to 230 V in progress; complete in principal cities
Iran	230 V	50 Hz	C	
Iraq	230 V	50 Hz	C, D, & G	
Ireland (Eire)	230	50 Hz	G	Type D once common and may be occasionally found.
Isle of Man	240 V	50 Hz	C & G	
Israel	220 V	50 Hz	C	
Italy	230 V	50 Hz	C, F & L	Type L plugs/outlets may have different pin spacing. The smaller and closer pins are for a rated current of 10 A, the bigger and wider pins are for a rated current of 16 A. Both kinds are currently used and comply to the relevant Italian (CEI) regulations. Some outlets have overlapping holes to accept either older or newer types.
Ivory Coast (See Côte d'Ivoire)				
Jamaica	110 V	50 Hz	A & B	

Japan	100 V	50/60 Hz*	A, B	*Eastern Japan 50 Hz (Tokyo, Kawasaki, Sapporo, Yokohoma, and Sendai); Western Japan 60 Hz (Osaka, Kyoto, Nagoya, Hiroshima)
Jordan	230 V	50 Hz	D, F, G & J*	*Type C may be found in some hotels.
Kenya	240 V	50 Hz	G	
Kazakhstan	220 V	50 Hz	C	
Kiribati	240 V	50 Hz	I	
Korea, South	220 V	60 Hz	C & F*	*Type F likely to be found in offices and hotels. 110 V power with plugs A & B was previously used but is being phased out. Older buildings may still have this, and some hotels offer both 110 V and 220 V service.
Kuwait	240 V	50 Hz	D* & G	*Type D primarily used for 15A service, Type G primarily for 13A service..
Laos	230 V	50 Hz	A, B, C, E & F	
Latvia	220 V	50 Hz	C & F	
Lebanon	110/220 V	50 Hz	A, B, C, D & G	
Lesotho	220 V	50 Hz	M	
Liberia	120 V	60 Hz	A & B	
Libya	127 V*	50 Hz	D & L	*Barce, Benghazi, Dema, Sebha & Tobruk 230 V
Lithuania	220 V	50 Hz	C & F	
Liechtenstein	230 V	50 Hz	J	
Luxembourg	220 V	50 Hz	C & F	
Macau	220 V	50 Hz	D & G	
Macedonia	220 V	50 Hz	C & F	
Madagascar	220 V	50 Hz	C & E	
Madeira	220 V	50 Hz	C & F	
Malawi	230 V	50 Hz	G	
Malaysia	240 V	50 Hz	G	
Maldives	230 V	50 Hz	A, D, G, J, K & L	
Mali	220 V	50 Hz	C & E	
Malta	240 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 & B	

Micronesia (Federal States of)	120 V	60 Hz	A & B	
Monaco	127/220 V	50 Hz	C, D, E F	
Mongolia	220 V	50 Hz	C & E	
Montenegro	220 V	50 Hz	C & F	
Montserrat (Leeward Is.)	230 V	60 Hz	A & B	
Morocco	127/220 V*	50 Hz	C & E	*Conversion to 220 V only underway
Mozambique	220 V	50 Hz	C, F & M*	*Type M found especially near the border with South Africa, including the capitol, Maputo.
Myanmar (formerly Burma)	230 V	50 Hz	C, D, F & G*	Type G* found primarily in better hotels. Also, many of major hotels chains are said to have multipurpose outlets, which will take Australian 3-pin plugs and perhaps other types.
Namibia	220 V	50 Hz	M	
Nauru	240 V	50 Hz	I	
Nepal	230 V	50 Hz	C & D	
Netherlands	230 V	50 Hz	C & F	
Netherlands Antilles	127/220 V*	50 Hz	A, B, & F	*St. Martin 120 V 60 Hz; Saba & (St. Eustatius 110 V 60 Hz A, maybe B
New Caledonia	220 V	50 Hz	F	
New Zealand	230 V	50 Hz	I	
Nicaragua	120 V	60 Hz	A	
Niger	220 V	50 Hz	A, B, C, D, E & F	
Nigeria	240 V	50 Hz	D & G	
Northern Ireland (see United Kingdom)				
Norway	230 V	50 Hz	C & F	
Okinawa	100 V*	60 Hz	A, B & I	*Military facilities 120 V
Oman	240 V*	50 Hz	G	*Voltage variations common
Pakistan	220 V	50 Hz	C & D	
Palmyra Atoll	120 V	60 Hz	A & B	
Panama	110 V*	60 Hz	A, B	*Panama City 120 V
Papua New Guinea	240 V	50 Hz	I	

Paraguay	220 V	50 Hz	C	
Peru	220 V*	60 Hz*	A, B & C	*Talara 110/220 V; Arequipa 50 Hz
Philippines	220 V	60 Hz	A, B, C	Type A most commonly found.
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	220 V	50 Hz	E	
Romania	230 V	50 Hz	C & F	
Russia	220 V	50 Hz	F & C	Type F used in new construction. Type C common in older structures.
Rwanda	230 V	50 Hz	C & J	
St. Kitts and Nevis (Leeward Is.)	230 V	60 Hz	D & G	
St. Lucia (Windward Is.)	240 V	50 Hz	G	
St. Vincent (Windward Is.)	230 V	50 Hz	A, C, E, G, I & K	
Samoa	230 V	50 Hz	I	
Saudi Arabia	127/220 V	60 Hz	A, B, F & G	
Scotland (See United Kingdom)				
Senegal	230 V	50 Hz	C, D, E & K	
Serbia	220 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	Type A adaptors are widely available from shops as an extension set of 2 to 5 sets of sockets; most commonly used for audio and video equipment.
Slovak Republic	230 V	50 Hz	E	
Slovenia	220 V	50 Hz	C & F	
Somalia	220 V*	50 Hz	C	*Berbera 230 V; Merca 110/220 V
South Africa	220/230 V*	50 Hz	M**	*Grahamstad & Port Elizabeth 250V; also found in King Williams

** Types C & G can also be found in some areas.

Spain	230 V	50 Hz	C & F	A correspondent reports that in Barcelona's Barrio Gothic, voltage is 120 V 60 Hz using Types C & F plugs. Step up transformers are required to use typical European devices.
Sri Lanka	230 V	50 Hz	D	
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	Type C plugs are common on appliances, and will fit the Type J outlet.
Syria	220 V	50 Hz	C, E, & L	
Tahiti	220 V	60 Hz	A, B, E	All electrical outlets protected by ground fault circuit interruptors (GFCI).
Tajikistan	220 V	50 Hz	C & I	
Taiwan	110 V	60 Hz	A, B	
Tanzania	230 V	50 Hz	D & G	
Thailand	220 V	50 Hz	A & C*	*Some outlets are a combination of type A and C and can accept either type plug.
Togo	220 V*	50 Hz	C	*Lome 127 V
Tonga	240 V	50 Hz	I	
Trinidad & Tobago	115V	60 Hz	A & B	
Tunisia	230 V	50 Hz	C & E	
Turkey	230 V	50 Hz	C & F	
Turkmenistan	220 V	50 Hz	B & F	
Uganda	240 V	50 Hz	G	
Ukraine	220 V	50 Hz	C	
United Arab Emirates	220 V*	50 Hz	G	
United Kingdom	230 V*	50 Hz	G	*Outlets typically controlled by adjacent switch. Though <i>nominal</i> voltage has been officially changed to 230 V, 240 V is within tolerances and commonly found.
United States of America	120 V	60 Hz	A & B	
Uruguay	220 V	50 Hz	C, F, I* & L	Type F becoming more common as a result of computer use. *Neutral and line wires are reversed from that used in Australia and elsewhere.
Uzbekistan	220 V	50 Hz	C & I	
Vanuatu	230 V	50 Hz	I	Some Type G may linger from British Colonial period, but are a

rarity.

Venezuela	120 V	60 Hz	A & B	
Vietnam	127/220 V*	50 Hz	A, C & G	*To be standardized at 220 V. Type G found in newer hotels, primarily those built by Singaporean and Hong Kong developers.
Virgin Islands (British and U.S.)	115V	60 Hz	A & B	
Wales (See United Kingdom)				
Yemen, Rep. of	220/230 V	50 Hz	A, D & G	
Zambia	230 V	50 Hz	C, D & G	
Zimbabwe	220 V	50 Hz	D & G	