

ELECTRIC POWER AROUND THE WORLD

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 220V countries have converted or are in the process of converting to the EU standard of 230V. Generally, this difference is inconsequential, as most appliances are built to tolerate voltage a certain percentage above or below the rated voltage. However, severe variations in voltage 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 frequency. 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 plug and socket in a certain area.

Finally, I've only included information that is likely to be relevant for travellers. 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!

COUNTRY	VOLTAGE	FREQUENCY	PLUG	COMMENTS
Afghanistan	220V	50 Hz	<u>C</u> & <u>F</u> *	* 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 <u>D</u> also in use.
Albania	220V*	50 Hz	<u>C</u>	*Voltage variations common
Algeria	230V	50 Hz	<u>C</u> * & <u>F</u>	*A variation of Type C with a on earth pin offset about 1/2-inch from center may also be found.
American Samoa	120V	60 Hz	<u>A</u> , <u>B</u> , <u>F</u> & <u>I</u>	
Angola	220V	50 Hz	<u>C</u>	
Anguilla	110V	60Hz	<u>A</u> (maybe <u>B</u>)	
Antigua	230V*	60 Hz	<u>A</u> & <u>B</u>	*Airport area is reportedly Antigua power is 110V.
Argentina	220V	50 Hz	<u>C</u> & <u>I</u> *	*Neutral and line wires are reversed from that used in Australia and elsewhere. Click here for more.
Armenia	220V	50 Hz	<u>C</u> & <u>F</u>	
Aruba	127V*	60 Hz	<u>A</u> , <u>B</u> & <u>F</u>	*Lago Colony 115V
Australia	230V*	50 Hz	<u>I</u>	*Outlets typically controlled by adjacent switch. Though <i>nominal</i> voltage has been officially changed to 230V, 240V is within tolerances and commonly found.
Austria	230V	50 Hz	<u>C</u> , <u>F</u>	
Azores	220V*	50 Hz	<u>B</u> , <u>C</u> , & <u>F</u>	*Ponta Delgada 110V; to be converted to 220V
Bahamas	120V	60 Hz	<u>A</u> & <u>B</u>	
Bahrain	230V*	50 Hz*	<u>G</u>	*Awali 110V, 60 Hz
Balearic Islands	220V	50 Hz	<u>C</u> & <u>F</u>	
Bangladesh	220V	50 Hz	<u>A</u> , <u>C</u> , <u>D</u> , <u>G</u> & <u>K</u>	
Barbados	115V	50 Hz	<u>A</u> , <u>B</u>	
Belgium	230V	50 Hz	<u>E</u>	Notes from correspondents: a 'C' style plug can be used with 'E' and 'F' sockets. All double-insulated appliances are indeed fitted with a 'C' plug, and can be used in any compatible socket (C E F and narrow L). Type C sockets are prohibited in Belgium.
Belize	110/220V	60 Hz	<u>B</u> & <u>G</u>	
Benin	220V	50 Hz	<u>E</u>	

Bermuda	120V	60 Hz	<u>A & B</u>	
Bhutan	230V	50 Hz	<u>D, E, & G</u>	Type <u>M</u> plugs also identified by some sources.
Bolivia	220/230V*	50 Hz	<u>A & C</u>	*La Paz & Viacha 115V
Bosnia	220V	50 Hz	<u>C & F</u>	
Botswana	231V	50 Hz	<u>D & G</u>	
Brazil	110/220V*	60 Hz	<u>A & B, C</u>	*127V found in states of Bahia, Paraná (including Curitiba), Rio de Janeiro, São Paulo and Minas Gerais (though 220V may be found in some hotels). Other areas are 220V only, with the exception of Fortaleza (240V). <u>Outlets (click for more)</u> are often a combination of type <u>A</u> and <u>C</u> and can accept either type plug.
Brunei	240V	50 Hz	<u>G</u>	
Bulgaria	230V	50 Hz	<u>C* & F*</u>	*Outlets are reported as type <u>E</u> , though both type <u>C</u> and <u>E</u> plugs may be encountered.
Burkina Faso	220V	50 Hz	<u>C & E</u>	
Burundi	220V	50 Hz	<u>C & E</u>	
Cambodia	230V	50 Hz	<u>A & C*</u>	*Some outlets are a combination of type <u>A</u> and <u>C</u> and can accept either type plug. Plug <u>G</u> may be found in some hotels.
Cameroon	220V	50 Hz	<u>C, E</u>	
Canada	120V	60 Hz	<u>A & B</u>	
Canary Islands	220V	50 Hz	<u>C, E, & L</u>	Type <u>L</u> 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	220V	50 Hz	<u>C & F</u>	
Cayman Islands	120V	60 Hz	<u>A & B</u>	
Central African Republic	220V	50 Hz	<u>C & E</u>	
Chad	220V	50Hz	<u>D, E & F</u>	
Channel Islands	240V*	50 Hz	<u>C & G</u>	*Guernsey 230V
Chile	220V	50 Hz	<u>C & L</u>	
China, People's Republic of	220V	50 Hz	<u>A, I, G</u>	The "official" plug type is like type <u>A</u> but slightly shorter and without holes in blades. Type <u>A</u> and <u>I</u> outlets are common, and Type <u>G</u> might also be found. <u>Click here for photos and more info.</u>
Colombia	110V	60Hz	<u>A & B</u>	
Comoros	220V	50 Hz	<u>C & E</u>	
Congo, People's Rep. of	230V	50 Hz	<u>C & E</u>	
Congo, Dem. Rep. of (former Zaire)	220V	50 Hz	<u>C & D</u>	
Cook Islands	240V	50 Hz	<u>I</u>	
Costa Rica	120V	60 Hz	<u>A & B</u>	
Côte d'Ivoire (Ivory Coast)	220V	50 Hz	<u>C & E</u>	
Croatia	230V	50Hz	<u>C & F</u>	
Cuba	110/220V	60Hz	<u>A & B, C & L</u>	Most older hotels 110V. Some newer hotels 220V. Some outlets are a combination of type <u>A</u> and <u>C</u> and can accept either type plug.
Cyprus	240V	50 Hz	<u>G</u>	
Czech Republic	230V	50 Hz	<u>E</u>	
Denmark	230V	50 Hz	<u>C & K</u>	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 <u>C</u> fits into <u>K</u> -type outlets (but not vice versa).

Djibouti	220V	50 Hz	<u>C</u> & <u>E</u>	
Dominica	230V	50 Hz	<u>D</u> & <u>G</u>	
Dominican Republic	110V	60 Hz	<u>A</u>	
East Timor	220V	50 Hz	<u>C</u> , <u>E</u> , <u>F</u> , <u>I</u> ,	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 that Type <u>I</u> is common as much construction is done by Australians; type <u>C</u> is common in buildings built during Indonesian occupation; type <u>E</u> is less common; type <u>F</u> is common in offices but not hotels.
Ecuador	120-127V	60 Hz	<u>A</u> & <u>B</u>	
Egypt	220V	50 Hz	<u>C</u>	
El Salvador	115V	60 Hz	<u>A</u> & <u>B</u> , <u>C</u> , <u>D</u> , <u>E</u> , <u>F</u> , <u>G</u> , <u>I</u> , <u>J</u> , & <u>L</u>	
England (See United Kingdom)				
Equatorial Guinea	220V*	50 Hz	<u>C</u> & <u>E</u>	*Voltage varies between 150 & 175V with frequent outages
Eritrea	230V	50 Hz	<u>C</u>	
Estonia	230V	50 Hz	<u>F</u>	Type <u>C</u> may be found in older buildings. Type <u>E</u> plugs may work in either <u>C</u> or <u>E</u> type outlets.
Ethiopia	220V	50 Hz	<u>D</u> , <u>J</u> , & <u>L</u>	
Faeroe Islands	220V	50 Hz	<u>C</u> & <u>K</u>	
Falkland Islands	240V	50 Hz	<u>G</u>	
Fiji	240V	50 Hz	<u>I</u>	
Finland	230V	50 Hz	<u>C</u> & <u>F</u>	
France	230V	50 Hz	<u>E</u>	Type <u>C</u> plugs may be found on some appliances, and will fit the Type <u>E</u> outlet. Type <u>C</u> outlets may be found in older buildings. Type <u>A</u> may be found in older buildings but is illegal.
French Guiana	220V	50 Hz	<u>C</u> , <u>D</u> , & <u>E</u>	
Gaza	230V	50 Hz	<u>H</u>	
Gabon	220V	50 Hz	<u>C</u>	
Gambia	230V	50 Hz	<u>G</u>	
Germany	230V	50 Hz	<u>C</u> & <u>F</u>	Type <u>A</u> may be found in older buildings but is illegal.
Ghana	230V	50 Hz	<u>D</u> & <u>G</u>	
Gibraltar	240V	50 Hz	<u>C</u> & <u>G</u>	
Great Britain (See United Kingdom)				
Greece	220V	50 Hz	<u>C</u> , <u>D</u> , <u>E</u> & <u>F</u>	
Greenland	220V	50 Hz	<u>C</u> & <u>K</u>	
Grenada (Windward Is.)	230V	50 Hz	<u>G</u>	
Guadeloupe	230V	50 Hz	<u>C</u> , <u>D</u> , & <u>E</u>	
Guam	110V	60Hz	<u>A</u> & <u>B</u>	
Guatemala	120V	60 Hz	<u>A</u> , <u>B</u> , <u>G</u> , & <u>I</u>	
Guinea	220V	50 Hz	<u>C</u> , <u>F</u> & <u>K</u>	

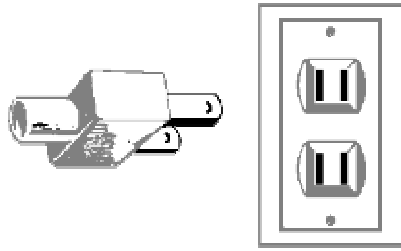
Guinea-Bissau	220V	50 Hz	<u>C</u>	
Guyana	240V*	60 Hz*	<u>A, B, D & G</u>	*Inside the capital city of Georgetown, both 120V and 240V at either 50 or 60Hz are found, depending on the part of the city (50Hz most common). Actual voltage may vary from area to area.
Haiti	110V	60 Hz	<u>A & B</u>	
Honduras	110V	60 Hz	<u>A & B</u>	
Hong Kong	220V*	50 Hz	<u>D, G</u>	Type D replaced by Type G but still found.
Hungary	230V	50 Hz	<u>C & F</u>	
Iceland	220V	50 Hz	<u>C & F</u>	
India	240V	50 Hz	<u>C, D, & G</u>	
Indonesia	127/230V*	50 Hz	<u>C, F & G</u>	*Conversion to 230V in progress; complete in principal cities
Iran	230V	50 Hz	<u>C</u>	
Iraq	230V	50 Hz	<u>C, D, & G</u>	
Ireland (Eire)	230	50 Hz	<u>E & G</u>	
Isle of Man	240V	50 Hz	<u>C & G</u>	
Israel	230V	50 Hz	<u>H & C</u>	*Many (but not all) modern electric outlets in Israel have larger holes that accept both Type H and C plugs. Some extension cords and older outlets accept only the Type H plug. One correspondent estimates a 50-70% chance that a randomly selected outlet will accept Type C.
Italy	230V	50 Hz	<u>F & L</u>	Type <u>C</u> may also be found. 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	110V	50 Hz	<u>A & B</u>	
Japan	100V	50/60 Hz*	<u>A, B</u>	*Eastern Japan 50 Hz (Tokyo, Kawasaki, Sapporo, Yokohama, and Sendai); Western Japan 60 Hz (Osaka, Kyoto, Nagoya, Hiroshima)
Jordan	230V	50 Hz	<u>D, F, G & J</u>	
Kenya	240V	50 Hz	<u>G</u>	
Kazakhstan	220V	50 Hz	<u>C</u>	
Kiribati	240V	50 Hz	<u>I</u>	
Korea, South	220V	60 Hz	<u>C & F*</u>	*Type F likely to be found in offices and hotels. 110V power with plugs <u>A & B</u> was previously used but is being phased out. Older buildings may still have this, and some hotels offer both 110V and 220V service.
Kuwait	240V	50 Hz	<u>C & G</u>	
Laos	230V	50 Hz	<u>A, B, C, E & F</u>	
Latvia	220V	50 Hz	<u>C & F</u>	
Lebanon	230V	50 Hz	<u>A, B, C, D & G</u>	
Lesotho	220V	50 Hz	<u>M</u>	
Liberia	120V	60 Hz	<u>A & B</u>	
Libya	127V*	50 Hz	<u>D</u>	*Barce, Benghazi, Derna, Sebha & Tobruk 230V
Lithuania	220V	50 Hz	<u>C & E</u>	
Liechtenstein	230V	50 Hz	<u>J</u>	
Luxembourg	220V	50 Hz	<u>C & F</u>	

Macau	220V	50 Hz	<u>D</u> & <u>G</u>	
Macedonia	220V	50 Hz	<u>C</u> & <u>F</u>	
Madagascar	127/220V	50 Hz	<u>C</u> , <u>D</u> , <u>E</u> , <u>J</u> & <u>K</u>	
Madeira	220V	50 Hz	<u>C</u> & <u>F</u>	
Malawi	230V	50 Hz	<u>G</u>	
Malaysia	240V	50 Hz	<u>G</u>	
Maldives	230V	50 Hz	<u>A</u> , <u>D</u> , <u>G</u> , <u>J</u> , <u>K</u> & <u>L</u>	
Mali	220V	50 Hz	<u>C</u> & <u>E</u>	
Malta	240V	50 Hz	<u>G</u>	
Martinique	220V	50 Hz	<u>C</u> , <u>D</u> , & <u>E</u>	
Mauritania	220V	50 Hz	<u>C</u>	
Mauritius	230V	50 Hz	<u>C</u> & <u>G</u>	
Mexico	127V	60 Hz	<u>A</u>	
Micronesia (Federal States of)	120V	60 Hz	<u>A</u> & <u>B</u>	
Monaco	127/220V	50 Hz	<u>C</u> , <u>D</u> , <u>E</u> <u>F</u>	
Mongolia	230V		<u>C</u> & <u>E</u>	
Montserrat (Leeward Is.)	230V	60 Hz	<u>A</u> & <u>B</u>	
Morocco	127/220V*	50 Hz	<u>C</u> & <u>E</u>	*Conversion to 220V only underway
Mozambique	220V	50 Hz	<u>C</u> , <u>F</u> & <u>M</u> *	*Type M found especially near the border with South Africa, including the capitol, Maputo.
Myanmar (formerly Burma)	230V	50 Hz	<u>C</u> , <u>D</u> , <u>F</u> & <u>G</u> *	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	220V	50 Hz	<u>D</u>	
Nauru	240V	50 Hz	<u>I</u>	
Nepal	230V	50 Hz	<u>C</u> & <u>D</u>	
Netherlands	230V	50 Hz	<u>C</u> & <u>F</u>	
Netherlands Antilles	127/220V*	50 Hz	<u>A</u> , <u>B</u> , & <u>F</u>	*St. Martin 120V 60 Hz; Saba & (St. Eustatius 110V 60 Hz A, maybe B
New Caledonia	220V	50 Hz	<u>F</u>	
New Zealand	230V	50 Hz	<u>I</u>	
Nicaragua	120V	60 Hz	<u>A</u>	
Niger	220V	50 Hz	<u>A</u> , <u>B</u> , <u>C</u> , <u>D</u> , <u>E</u> & <u>F</u>	
Nigeria	240V	50 Hz	<u>D</u> & <u>G</u>	
Northern Ireland (see United Kingdom)				
Norway	230V	50 Hz	<u>C</u> & <u>F</u>	
Okinawa	100V*	60 Hz	<u>A</u> , <u>B</u> & <u>I</u>	*Military facilities 120V
Oman	240V*	50 Hz	<u>C</u> & <u>G</u>	*Voltage variations common
Pakistan	230V	50 Hz	<u>C</u> & <u>D</u>	
Palmyra Atoll	120V	60Hz	<u>A</u> & <u>B</u>	

Panama	110V*	60 Hz	<u>A, B</u>	*Panama City 120V
Papua New Guinea	240V	50 Hz	<u>I</u>	
Paraguay	220V	50 Hz	<u>C</u>	
Peru	220V*	60 Hz*	<u>A, B & C</u>	*Talara 110/220V; Arequipa 50 Hz
Philippines	220V*	60 Hz	<u>A, B, C</u>	
Poland	230V	50 Hz	<u>C & E</u>	
Portugal	220V	50 Hz	<u>C & F</u>	
Puerto Rico	120V	60 Hz	<u>A & B</u>	
Qatar	240V	50 Hz	<u>D & G</u>	
Réunion Island	220V	50Hz	<u>E</u>	
Romania	230V	50 Hz	<u>C & F</u>	
Russian Federation	220V	50 Hz	<u>C</u>	A correspondent notes: "Plug type E can also be used (because the mains outlets do not have the protruding pin). Plug type F can sometimes be used but with reservation because in many places the mains outlet will not allow to connect such plug as the outlets have smaller hole diameters than F-plug pins.
Rwanda	230V	50 Hz	<u>C & J</u>	
St. Kitts and Nevis (Leeward Is.)	230V	60 Hz	<u>D & G</u>	
St. Lucia (Windward Is.)	240V	50 Hz	<u>G</u>	
St. Vincent (Windward Is.)	230V	50 Hz	<u>A, C, E, G, I & K</u>	
Saudi Arabia	127/220V	60 Hz	<u>A, B, F & G</u>	
Scotland (See United Kingdom)				
Senegal	230V	50 Hz	<u>C, D, E & K</u>	
Serbia-Montenegro	220V	50 Hz	<u>C & F</u>	
Seychelles	240V	50 Hz	<u>G</u>	
Sierra Leone	230V	50 Hz	<u>D & G</u>	
Singapore	230V	50 Hz	<u>G</u>	Type <u>A</u> 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	230V	50 Hz	<u>E</u>	
Slovenia	220V	50 Hz	<u>C & F</u>	
Somalia	220V*	50 Hz	<u>C</u>	*Berbera 230V; Merca 110/220V
South Africa	220/230V*	50 Hz	<u>M</u>	*Grahamstad & Port Elizabeth 250V; also found in King Williams
Spain	230V	50 Hz	<u>C & F</u>	
Sri Lanka	230V	50 Hz	<u>D</u>	
Sudan	230V	50 Hz	<u>C & D</u>	
Suriname	127V	60 Hz	<u>C & F</u>	
Swaziland	230V	50 Hz	<u>M</u>	
Sweden	230V	50 Hz	<u>C & F</u>	
Switzerland	230V	50 Hz	<u>J</u>	Type <u>C</u> plugs are common on appliances, and will fit the Type <u>J</u> outlet.
Syria	220V	50 Hz	<u>C, E, & L</u>	

Tahiti	110/220V	60 Hz	<u>A</u> , <u>B</u> , <u>E</u>	Information is based mainly on hotel experiences reported by travelers.
Tajikistan	220V	50 Hz	<u>C</u> & <u>I</u>	
Taiwan	110V	60 Hz	<u>A</u> , <u>B</u>	
Tanzania	230V	50 Hz	<u>D</u> & <u>G</u>	
Thailand	220V	50 Hz	<u>A</u> & <u>C</u> *	*Some outlets are a combination of type <u>A</u> and <u>C</u> and can accept either type plug.
Togo	220V*	50 Hz	<u>C</u>	*Lome 127V
Tonga	240V	50 Hz	<u>I</u>	
Trinidad & Tobago	115V	60 Hz	<u>A</u> & <u>B</u>	
Tunisia	230V	50 Hz	<u>C</u> & <u>E</u>	
Turkey	230V	50 Hz	<u>C</u> & <u>F</u>	
Turkmenistan	220V	50 Hz	<u>B</u> & <u>F</u>	
Uganda	240V	50 Hz	<u>G</u>	
Ukraine	220V	50 Hz	<u>C</u>	
United Arab Emirates	220V*	50 Hz	<u>C</u> , <u>D</u> & <u>G</u>	
United Kingdom	230V*	50 Hz	<u>G</u>	*Outlets typically controlled by adjacent switch. Though <i>nominal</i> voltage has been officially changed to 230V, 240V is within tolerances and commonly found.
United States of America	120V	60 Hz	<u>A</u> & <u>B</u>	
Uruguay	220V	50 Hz	<u>C</u> , <u>F</u> , <u>I</u> * & <u>L</u>	Type <u>E</u> becoming more common as a result of computer use. *Neutral and line wires are reversed from that used in Australia and elsewhere. Click here for more.
Uzbekistan	220V	50 Hz	<u>C</u> & <u>I</u>	
Venezuela	120V	60 Hz	<u>A</u> & <u>B</u>	
Vietnam	127/220V*	50 Hz	<u>A</u> , <u>C</u> & <u>G</u>	*To be standardized at 220V. Type <u>G</u> found in newer hotels, primarily those built by Singaporean and Hong Kong developers.
Virgin Islands (British and U.S.)	110V	60 Hz	<u>A</u> & <u>B</u>	
Wales (See United Kingdom)				
Western Samoa	230V	50 Hz	<u>I</u>	
Yemen, Rep. of	220/230V	50 Hz	<u>A</u> , <u>D</u> & <u>G</u>	
Yugoslavia (<i>Former</i>)	220V	50 Hz	<u>C</u> & <u>F</u>	
Zambia	230V	50 Hz	<u>C</u> , <u>D</u> & <u>G</u>	
Zimbabwe	220V	50 Hz	<u>D</u> & <u>G</u>	

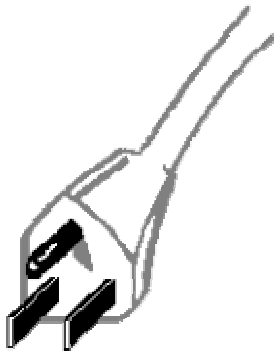
Plug Type A



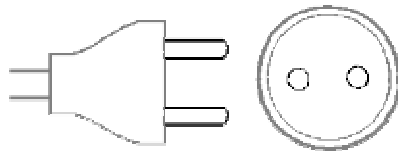
NOTES ON TYPE A PLUGS/OUTLETS

In the U.S. & Canada, two-blade plugs are often polarized, with one blade larger than the other. Most outlets are designed to handle these. The larger blade is the neutral side of the current. This is a safety feature intended so the plug can be inserted one way only to reduce the chance of accidental shock. If you try to plug a modern plug into an old-style socket for equal size blades, it won't go in unless you file down the larger blade to the older plug size. Outside the US, many countries with Type A use the old style plug, and a newer US plug with unequal pins might pose a problem. This can be bypassed using an adaptor (found in many travel kits) which converts the newer Type A plug to the older model with equal-sized blades. Be aware, though, that you might also be bypassing the protection that polarization provides.

Plug Type B



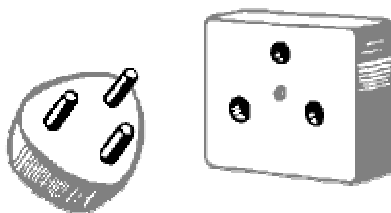
Plug Type C



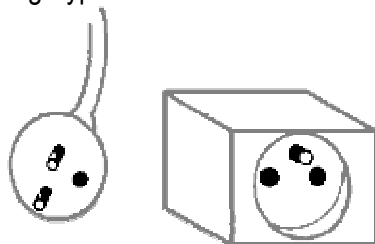
NOTE: Type C plugs can also be used with E and F and some L sockets.

This type of plug is very common in most "universal" adaptor sets. (Though the diagram shows a circular plug, quite often Type C plugs have a rectangular form factor, as in the photo above.)

Plug Type D

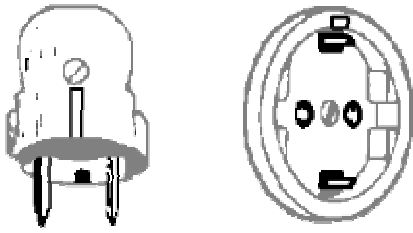


Plug Type E



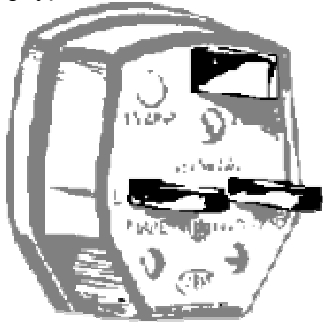
NOTE: Type E sockets will also accept Type C plugs. Type E plugs will also work in Type F sockets.

Plug Type F

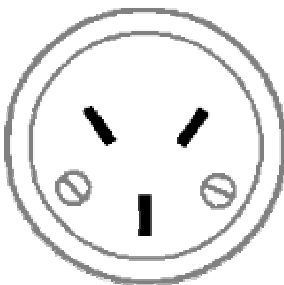


NOTE: Type F sockets will also accept Type C and E plugs. This is formally known as a "Schukostecker" plug, commonly abbreviated as "**Schuko.**"

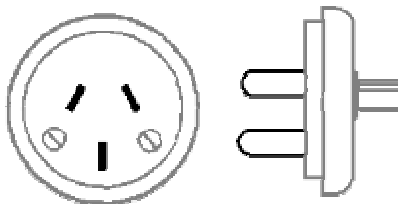
Plug type G



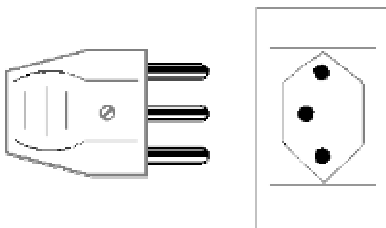
Plug Type H



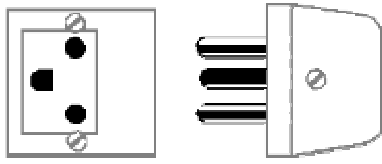
Plug Type I



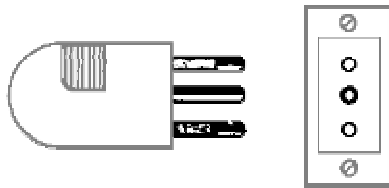
Plug Type J



Plug Type K



Plug Type L



Plug Type M

