

UK Mains Power – 230V



Earth

Neutral

Live

The thickness of cable determines its maximum current capacity.

13 Amp



15 Amp



Cee Form

16 Amp



16 Amp 3 Phase



32 Amp



32 Amp 3 Phase



63 Amp



63 Amp 3 Phase



125 Amp Single & 3 Phase

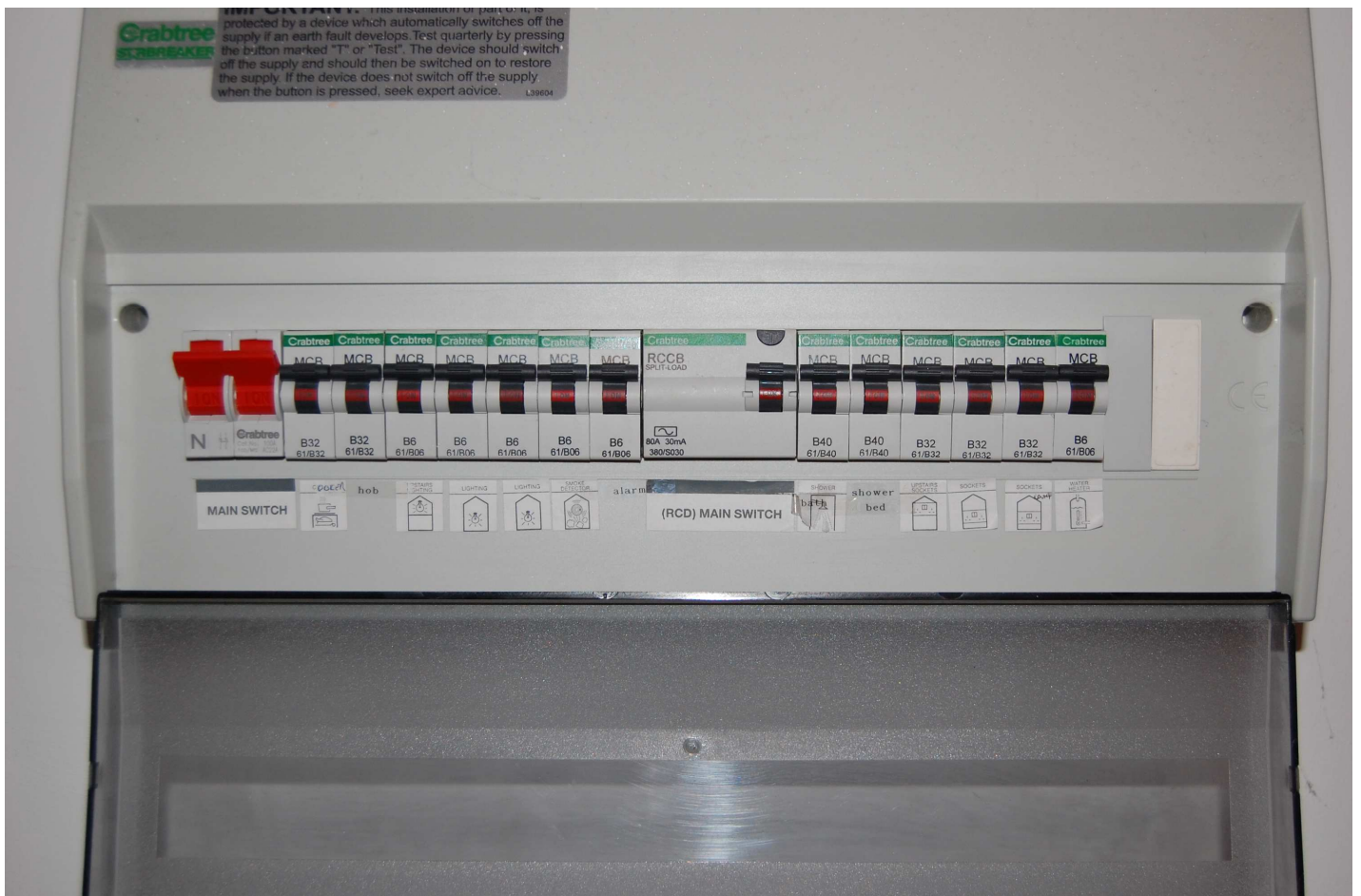


125 Amp 3 Phase Distribution Unit





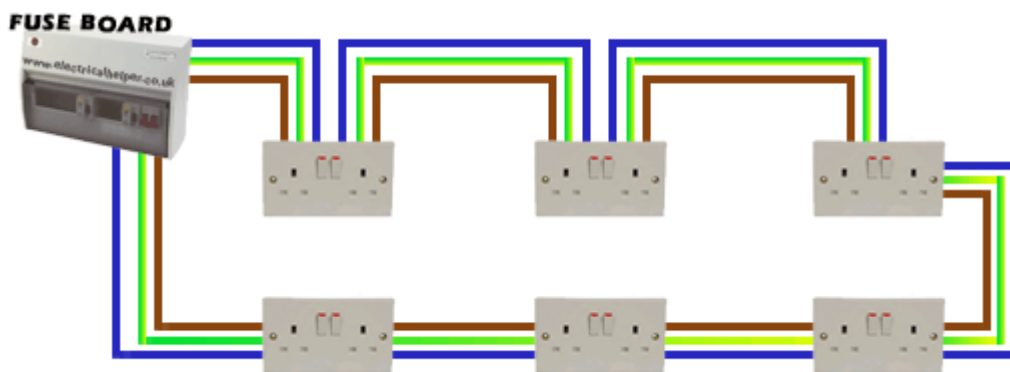
Circuit Breakers



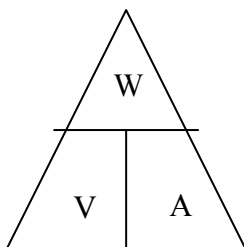
Fuses



Ring Main



Formula



Watts = Volts x Amps

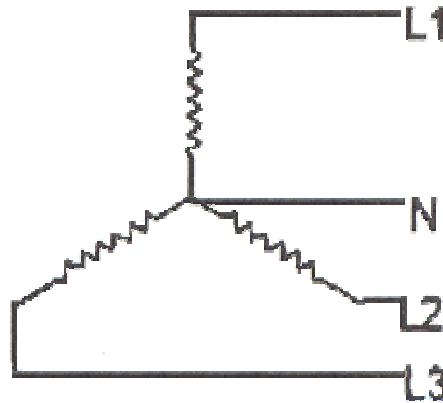
Volts = Watts / Amps

Amps = Watts / Volts

1000W Profile = $1000/230 = 4.3$ amps

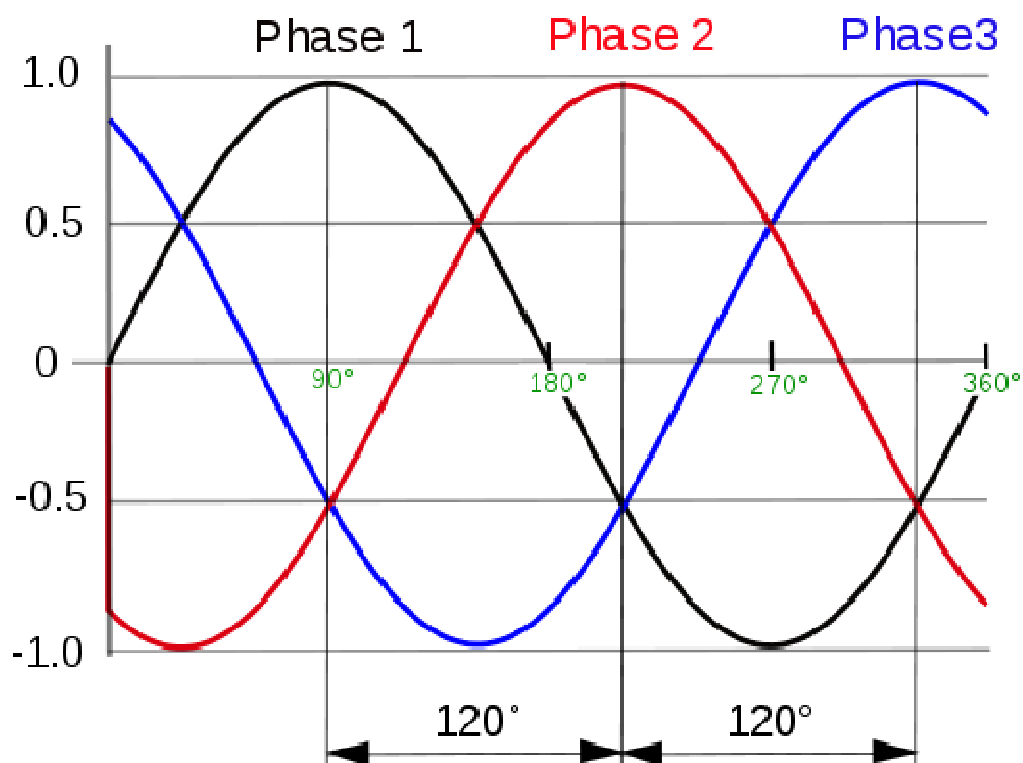
Three Phase Power

Three phase electric power is a common method of alternating-current electric power generation, transmission, and distribution.



This diagram is a representation of a three phase supply. The central dot is called the 'Star Point'.

In a three phase system, three circuit conductors (L1, L2 & L3) carry three alternating currents (sine waves) which reach their instantaneous peak values at different times (120 degrees apart). Taking one conductor as the reference, the other two currents are delayed in time by one-third and two-thirds of one cycle of the current of the electrical current. This delay between phases has the effect of giving constant power transfer over each cycle of the current and also makes it possible to produce a rotating magnetic field in an electric motor. See diagram below.



Three phase systems may have a neutral wire. A neutral wire allows the three phase system to use a higher voltage while still supporting lower voltage single phase appliances. For example if you measured the voltage between any of the lines (L1, L2 or L3) and neutral you would have 230V. If you measured between L1 to L2 you would have 400V. So having the neutral wire will support both high and low voltage.

In high voltage distribution situations, it is common not to have a neutral wire as the loads can simply be connected between phases.

In industry, as stated above the delay between phases has the effect of giving constant power transfer over each cycle of the current and also makes it possible to produce a rotating magnetic field in an electric motor. Three phase motors are designed to use this in their favour. Motors will run in one direction using L1, L2 and L3. If you want it to run in the other direction, you simply swap any two of the phases at the motor.