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Information on Fuses

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Fuses

The main reason for adequate fuse protection is to prevent over heating of the cables in a fault or overload situation which, if unprotected, could result in a fire. In some cases (particularly motors and pumps) the manufacturer may recommend a fuse to help prevent damage to the motor if it starts to draw excessive current.

How often have you heard on the news that a house burned down due to 'an electrical fault?' This is usually caused by inadequate fusing on cables where the 2 live conductors come into contact with each other. The insulation being eaten by animals is the most common cause of failure (rodents, termites, birds etc.). The other common cause of failure is mechanical damage often caused by wind or motor vibration or by people pulling on a wire instead of the plug itself. Even a 12 volt battery system is quite capable of causing a fire in a fault situation.

The key principle of fusing is that each wire in a circuit must be protected by a breaker or fuse. This fuse must be rated less than the ampacity or current carrying capacity (ccc) of the cable.



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FUS

Course Info

Living with Solar Course
These courses are held regularly.

Next course is on the weekend 24th-25th March. 2007

Registration by Friday 16th March. 2007



See the Sundaya Product Range.

1.84 mm sq.	15 amps
2.9 mm sq.	20 amps
4.6 mm sq.	25 amps
7.9 mm sq.	45 amps
13.6 mm sq.	70 amps
32 mm sq.	110 amps
49 mm sq.	150 amps

Fuse ratings for the wire sizes that we sell are:

You can use a smaller fuse but not a larger one!

If you have 2 wire sizes on the one circuit you either need 2 appropriately sized fuses, unless the fuse for the smaller cable will handle the load carried by the larger cable. A common example of this in a

12/24 volt household is when you use a small gadget that comes with a cigarette type plug on the end. Always make certain there is a fuse inside the cigarette lighter plug as this type of power lead is often rather flimsy and prone to mechanical damage.



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FUS

In general terms, you can use any appropriately rated fuse or circuit breaker in your battery type system. However, for the large cables that connect onto the battery, you should use a sealed type of fuse (usually HRC type) and not a circuit breaker which could generate sparks if it tripped. Sparks near the explosive gases generated by a charging battery are dangerous. As a further safety measure this HRC type fuse should be located outside of the battery box, below the vent level of the batteries and before the positive and negative cables come close to each other.

Please note that 12/24V DC cables and fuses should be physically separate from 240V cables and fusing.

For medium size solar systems we sell a nice Distribution Board with large links to take up to 24 mm sq. cable.

There is a circuit for solar (25A); 3 loads (10A) and an auxiliary (25A). The rating of these breakers can be altered if required and a further 3 breakers can be added to the box if required.

Information Related to these products.	
<p>Circuit Breakers and Fuses</p> 	<ul style="list-style-type: none"> ● Circuit Breakers and Fuses <ul style="list-style-type: none"> ● Installing your own Solar System ● Protection Against the Effects of Lightning on Stand-Alone Photovoltaic Systems (Report by the International Energy Agency IEA)

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