

## 12 ELECTRICAL SYSTEM

1. A fuse or circuit breaker is required in any electrical circuit between the battery and any electrical device.

2. All fuses or circuit breakers should be mounted as close as practically possible to the source of power.

3. All fuses or breakers should be sized to protect the wiring to which they are connected. The current rating of fuses and breakers shall be no more than those listed in the adjacent table for standard automotive cable.

## 13 ISOLATION SWITCH

1. An isolation switch (kill switch) is required on all vehicles. This switch must have a break current rating that exceeds the maximum current draw of the vehicle.

2. The switch must be located in the main positive power cable between the battery and any motor controller.

3. An actuator may be attached to the switch for remote operation provided that it is durable and reliable.

4. Means must be provided for both the driver and race officials to actuate an isolation switch.

5. The driver must be able to actuate the switch while in driving position and without reaching outside the vehicle.

6. Race officials must be able to actuate the switch from outside the vehicle without reaching in.

7. Two switches may be installed if necessary.

8. A circuit breaker may be used as the isolation switch.

9. The switch or actuator accessible from outside the vehicle must be mounted within a solid red triangle whose sides are at least 4 inches and in contrast to vehicle color or graphics.

10. Wiring must be well insulated and securely attached to the frame or body. All wiring must be kept free from moving parts and protected from chafing.

11. Wiring that passes through a hole with sharp edges or through sheet metal must be protected by an insulating grommet or other suitable device.

12. Terminals must be secured so they will not come loose or short out during a competition.

13. No part of the electrical system may use the vehicle frame as a conductor. The frame must not be grounded.

Table adapted from National Electric Code (NEC) Handbook for standard automotive type cable, single conductor, not in a raceway or conduit.

FUSE GUIDE	
Wire size AWG	Fuse or Breaker Size
20	5.5 AMPS
18	9 AMPS
16	12 AMPS
14	15 AMPS
12	20 AMPS
10	30 AMPS
8	80 AMPS
6	105 AMPS
4	140 AMPS
2	200 AMPS
1	250 AMPS
1/0	300 AMPS

For other cable types or configuration refer to an applicable NEC (National Electric Code) standard.

