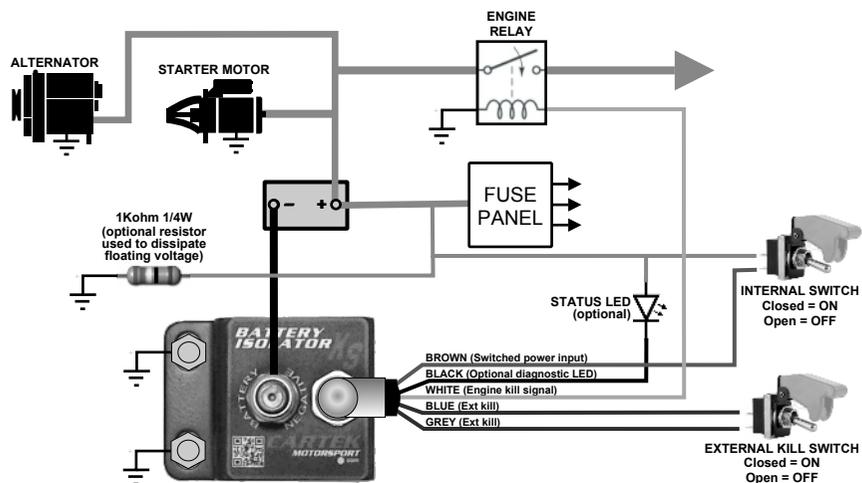


Alternative installation



Alternative installation

MOTORSPORT IS DANGEROUS.

NO WARRANTY IS MADE OR IMPLIED REGARDING ANY CARTEK PRODUCTS TO PROTECT USERS FROM INJURY OR DEATH. USER ASSUMES ALL RISKS.

THIS PRODUCT IS FOR OFF ROAD USE ONLY.

CARTEK

AUTOMOTIVE ELECTRONICS

BATTERY ISOLATOR



Specification

Size:	L = 60mm, W = 45mm.
Weight:	70g.
Operational Voltage:	8v - 18v.
Current consumption:	0.0A OFF 0.03A ON.
Battery negative cranking current:	500-600A typ, 2000A surge.
Operating temperature:	-10°C - +100°C.
Battery negative terminal:	M8 stud.
Connector:	Binder, M9, IP67, 5 Pole.

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For off-road use only

INTRODUCTION

The Cartek Solid State Battery Isolator is a fully electronic 'master/kill switch' system designed specifically for competition car applications. This system contains no moving parts and its solid construction provides high resistance to shock, vibration, water and dirt. Using the latest MOSFET technology this isolator provides safe, spark-free isolation of the vehicle's battery and engine electrics in accordance with FIA safety regulations.

PRINCIPLE OF OPERATION

All race and rally master switches must perform two functions, (1) Disconnect the battery from all electrical circuits and (2) Stop the engine. The Battery Isolator XS performs the battery disconnection function by breaking the connection between the NEGATIVE battery terminal and CHASSIS-EARTH. The Battery Isolator XS performs the engine kill function by outputting a signal which can be used to enable/disable ECUs or PDMs or used to control an engine relay. This signal outputs 12v (0.5A max) when the Isolator is ON and switches to chassis-earth when the Isolator is OFF.

The electronic isolation circuits are controlled by a microprocessor and incorporate various safety systems including over-temperature and over-current monitoring. The microprocessor also monitors the kill switches/buttons for instant activation without false triggering. The unit will instantly trigger into isolation mode when any of the kill buttons are struck or on detection of any fault or break in switch wiring circuits.

The Isolator incorporates an LED which displays status as well as fault codes. It also provides alternator protection during engine run-down without the need for additional components such as load-dump resistors or diodes.

FITTING

The Isolator should be mounted directly to the vehicle's metal bodyshell/chassis close to the vehicle's battery but away from any high temperature sources. The Isolator should be mounted securely with unpainted screws/bolts. When the engine is being cranked the starter motor will draw high electrical current from the battery via the Isolator and is therefore essential that the mounting method provides good electrical contact to the chassis.

OPERATING INSTRUCTIONS

Once fully installed, the Isolator is switched ON by activating the internal ON-OFF switch/button. On activation the Isolator performs a system check before electrical power is turned on. If any fault is detected then the Isolator will remain in OFF and display the fault status via the LED in a sequence of flashes.

- 1 flash - External kill button pressed or circuit broken.
- 2 flashes - Maximum temperature exceeded.
- 4 flashes - Maximum current exceeded (Engine Kill signal).
- 8 flashes - Maximum current exceeded (Battery Negative).

Once the fault is remedied the Isolator can be reset by switching the internal ON-OFF switch off then on again.

ELECTRICAL CONNECTIONS

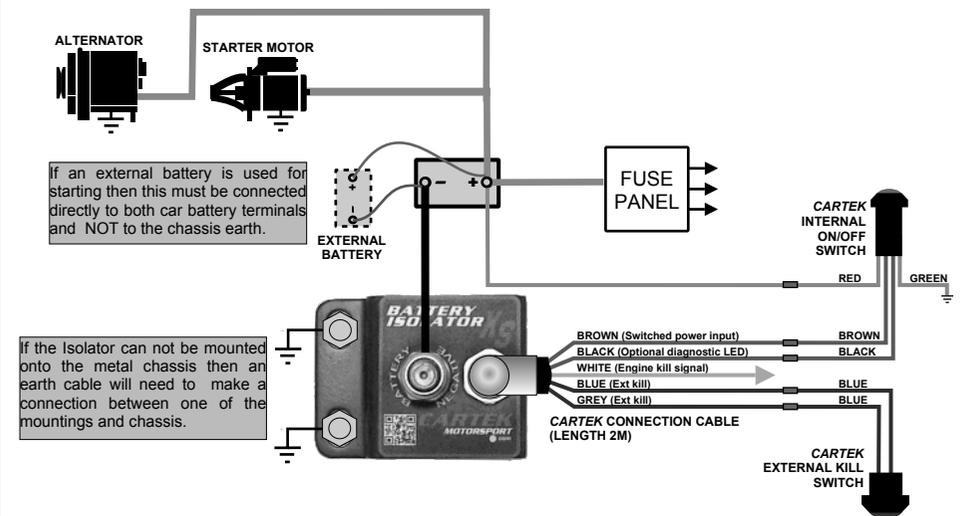
The large 8mm stud is used to carry the connection to the negative terminal of the vehicle battery. This connection can be made short and with cable of 100-200Amp capacity. All other connections can be made using thin, low current wiring.

SWITCH CONNECTIONS

The Isolator can be controlled by any number of on-off/kill switches although the usual configuration is one internal ON/OFF switch and one external KILL switch.

The internal switch needs to be of a latching type, either toggle or pushbutton, such that the ON position makes the circuit while the OFF position breaks the circuit. If an LED type button is used then the polarity of the switch is important when connecting across the Red and Black wires of the internal switch circuit.

The external kill switch should be of the non-latching, normally-closed (NC) type and connected across the blue wires of the external switch circuit. If required, multiple kill switches/devices can be incorporated by connecting in series. If only a single internal on-off switch is to be used with no external switch then the external circuit needs to be made by joining the two blue wires together. If any wire connections become broken due to fatigue or accident then the Isolator will automatically trip into isolation mode.



Typical installation using
Cartek pushbutton switches