

[®] **T**SWITCH

500 Amp
Continuously
Rated Isolation
Switch with Safety
Lockout

**BATTERY
MASTER
SWITCH**



TSWITCH® OVERVIEW

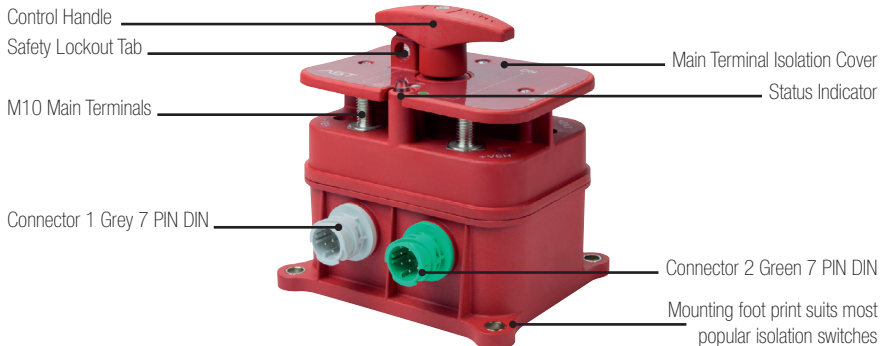
The TSWITCH® ADR Battery Master Switch has been designed to comply with Australian Standards AS 2809.2 and European ADR 2005. Each are 2 pole Bi-Stable electro-mechanical switches with mechanical locking features. Each switch incorporates dual auxiliary switches. One auxiliary circuit (SW1) to control a circuit of users preference and a second auxiliary circuit (SW2) to be utilised for alternator field isolation.

The prime function of the TSWITCH® is to disconnect and isolate the main battery from the vehicle and the alternator both manually and via remote control from a rollover switch, impact switch or emergency stop button. It can also easily be integrated in to fire suppression control circuits.

In an EMERGENCY SHUT DOWN situation when activated by a impact sensor, rollover device or by an emergency stop switch it safely disconnects the alternator prior to disconnection of the main battery ensuring that damage to the vehicle or alternator does not occur and its main control handle automatically resets to the OFF position. If such an event should occur the TSWITCH® must be manually reset after the vehicle operator or a safety officer deems the area and vehicle safe. It also incorporates a fail safe trip electrical lock out feature; when normally closed emergency stop switches are integrated into the V+ input and they are ACTIVE one cannot manually turn on the switch; When the control handle is turned to the ON position a mechanical auto trip feature returns the control handle back to the OFF position with spring force. If the user chooses not to utilise this feature in NON EMERGENCY SHUT DOWN situations one can safely isolate the batteries and alternator MANUALLY and install a safety lock out device on the main control Handle of the TSWITCH®.

® **T**SWITCH

Features



TSWITCH® Part Number:

TSW24VI - 24V isolation switch Bi-Polar with V+ Fail Safe Trip

Accessories:

BMS-PKIT - DIN connector kit

HRN1.5X2RW - 1.5mt Harness kit

RS400 - Rollover device

VRD12-24 - Rollover device

SW-K174 - Remote mounted switch

SW-K174G - Remote mounted switch with lockout guard

SW-K174M - Remote mounted switch metal enclosure

Features Include:

- Ex & CE Certified
- Complies with ADR2005
- Complies with AS 2809
- Field Isolation for all alternator and vehicle types
- Keep Alive B+ and B- circuits for critical ECM
- GPS Tracking or Tachograph operation
- Compatible with all rollover devices
- Two colour LED status indicator Lockable Handle.

FITTING ACCORDING TO ADR REGULATION 9.2.2.3



Note: It is highly recommended that the installation is performed by a qualified auto electrician or electrical engineer.

The TSWITCH® should be fitted in accordance with state and federal laws relevant to the application it is required to meet. Please refer to the appropriate governing authority for specific fitting requirements.

Note:

9.2.2.3.1 - A switch for breaking the electrical circuits shall be placed as close to the battery as practicable. If a single pole switch is used it shall be placed in the supply lead and not in the earth lead.

9.2.2.3.2 - A control device (not supplied see Optional Equipment 2.) to facilitate the disconnecting and reconnecting functions of the switch shall be installed in the driver's cab. It shall be readily accessible to the driver and be distinctively marked. It shall be protected against inadvertent operation by either adding a protective cover, by using a dual movement control device or by other suitable means. Additional control devices may be installed provided they are distinctively marked and protected against inadvertent operation. If the control device(s) are electrically operated, the circuits of the control device(s) are subject to the requirements of 9.2.2.5.

9.2.2.3.3 - The switch shall have a casing with protection degree IP65 in accordance with IEC Standard 529.

9.2.2.3.4 - The cable connections on the switch shall have protection degree IP54. However, this does not apply if these connections are contained in a housing which may be the battery box. In this case it is sufficient to insulate the connections against short circuits, for example with a rubber cap.

9.2.2.4 - The battery terminals shall be electrically insulated or covered by the insulating battery box cover. If the batteries are not located under the engine bonnet, they shall be fitted in a vented box.

STOP!

If you intend to install this switch onto a vehicle equipped with another brand of Battery Isolation Switch be aware. Although the harness will connect; the PIN functions are not identical and DAMAGE to TSWITCH[®] and vehicle can occur.

The PIN configuration of each attaching harness will need to be re-configured. Please follow the enclosed wiring instructions. Damage caused by improper installation is not warrantable

MOUNTING

The mounting base offers the same interface as the Lucas 196A (SSB) and DPS Master switches. Use 4 x M8 bolts for mounting. It is strongly recommended that thread locking nuts or locking adhesive be utilised to prevent loss of torque due to vibration.

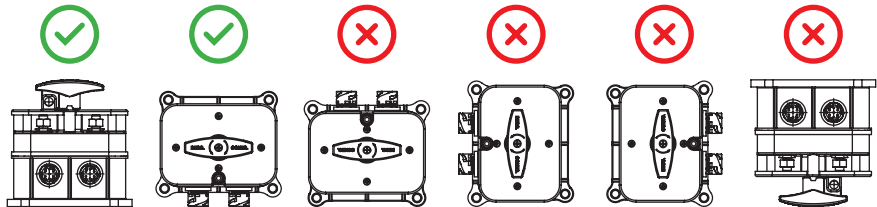
Maximum Tightening torque: 14 Nm

The TSWITCH® must always be mounted in a location where the manual control handle can be accessed with no obstructions. It is also recommended that it be mounted near the battery location or within view of the battery box. Never install inside the same compartment of the batteries.

The TSWITCH® is an electric device. Ensure it is NOT installed in areas that are prone to direct wheel splash i.e. area with excessive water ingress from moving vehicles (such as low to the ground, between wheels etc.)

Never install TSWITCH® near the exhaust converter or inside of the engine compartment.

The TSWITCH® should always be mounted sitting upright or in a horizontal direction with DIN connectors facing down. See below illustrations.



ELECTRICAL



WARNING: Damage may occur if connected incorrectly.

WARNING: Never disconnect DIN connectors with switch in ON position.

WARNING: Do not conduct welding to a vehicle while TSWITCH® is fitted.
Disconnect prior to proceeding

Main Terminals: 4 x M10 Studs. Torque to 14Nm. Always ensure polarity is correct when connecting battery and vehicle leads. Refer to markings adjacent to each terminal prior to connection.



CAUTION: If no V+ Signal at PIN 1 Green Connector Switch cannot be turned on. FAIL SAFE TRIP

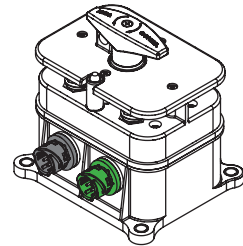
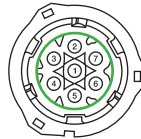
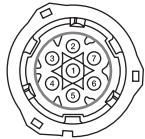
V+ Fail Safe Trip: It is recommended that Normally Closed Emergency Stop switches are integrated into a looped circuit leading from PIN 7 of Green Connector and Returning VIA PIN 1 of Green Connector. For additional safety Connect a switched V+ from the KEY SWITCH or Auxiliary Ignition source. If the KEY SWITCH/IGNITION of the equipment is OFF the TSWITCH® cannot be manually turned ON. With every attempt to turn ON a mechanical auto trip feature returns the control handle back to the OFF position with spring force.

ELECTRICAL

DIN Connections: Mating harnesses sold separately are 1.5 metres in length. These harnesses minimize installation time and improve the quality of the installation. Always ensure that the TSWITCH® is in the off position and each harness has been completely wired into the vehicle prior to connecting each harness to the TSWITCH®

Optional Connector Part Numbers:

- BMS-PKIT** - 2 plug DIN connector kit
HRN1.5X2RW - Harness Pair 1.5M 7 Pin Circular Din Connectors



Grey Connector		
PIN ID	Wire Colour	Function
1	Light Blue	Not Used
2	Red/Green	Not Used
3	Tan	*SW 1 Auxiliary Contact N/O
4	Purple	*SW 1 Auxiliary Contact N/O
5	Pink	*SW 2 Alternator Field N/O
6	Orange	*SW 2 Alternator Field N/O
7	White/Black	Connect to B- / Earth

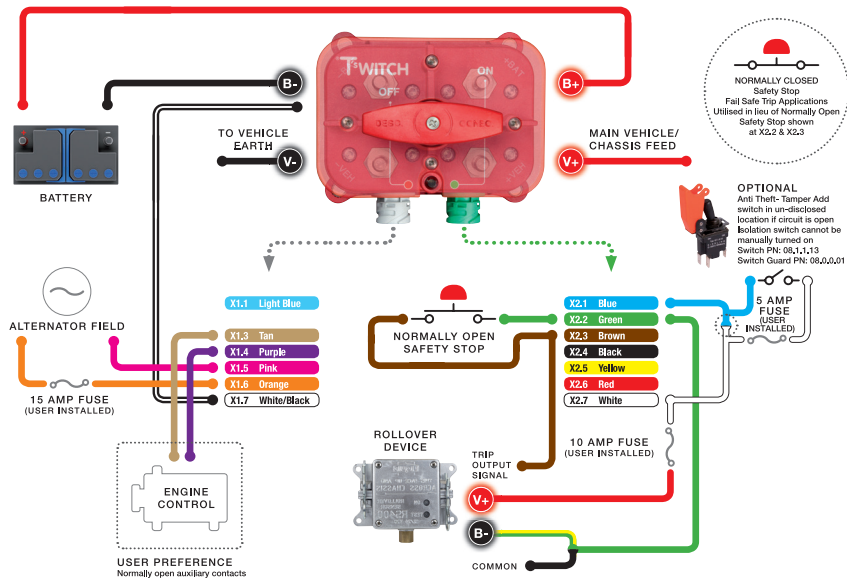
*Install 10 Amp fuse within external circuit

Green Connector		
PIN ID	Wire Colour	Function
1	Blue	*Remote Switch V+ input Fail Safe Trip
2	Green	Remote Switch Negative
3	Brown	Remote Switch Coil (-) input trigger
4	Black	Not Used
5	Yellow	Not Used
6	Red	B+ Over R1 560 Ω resistor
7	White	V+ Output

*See page 7 for details

EXAMPLE BASIC WIRING DIAGRAM

TSW24VI only with RS400



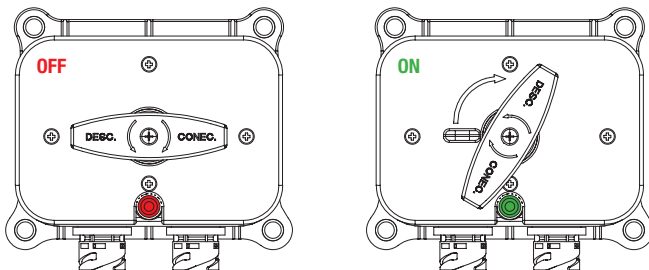
ASSEMBLY

With all electrical connections complete, install top isolation cover. Attach to switch with supplied 4 - 4mm x 12mm phillips head screws. Place TSWITCH® control handle onto switch main control shaft and secure in position with supplied 4mm x 11mm phillips head machine screw.

OPERATION

Manual Operation: Rotate handle 120° in a clockwise rotation from the OFF position. Handle will snap to rest in the ON position. LED will change to green. Do not force handle beyond 120° degree rest position.

Remote Operation: If V+ signal is lost at PIN 1 of Green Connector or if a V- signal is applied to PIN 3 by remote switches, rollover device or fire suppression; control handle will automatically reset to the off position, LED will change from Green to RED indicating switch OFF. Switch must be manually turned back ON. *Will only turn back on with V+ Signal present at PIN 1 of Green Connector and NO V- is present at PIN 3. See Manual Operation.



ELECTRICAL CHARACTERISTICS

Operating Voltage	18 to 30 volts	• Auxiliary 2 Circuit	10A
Current Rating	500A continuous	• External Trigger	10A
Max Current 5 seconds	3000A	• Current Draw OFF Mode	15mA
Max Current 30 seconds	2250A	• IP Rating	IP67
Auxiliary 1 Circuit	10A	•	

ACCESSORIES

RS400



VRD12-24



SW-K174



SW-K174G



SW-K174M



BMS-PKIT

2 plug DIN connector kit



HRN1.5X2RW

Harness Pair 1.5M 7 Pin Circular Din Connectors



® TSWITCH

 **Baxters**
THE DRIVING FORCE IN AUTOMOTIVE SOLUTIONS

baxters.com.au