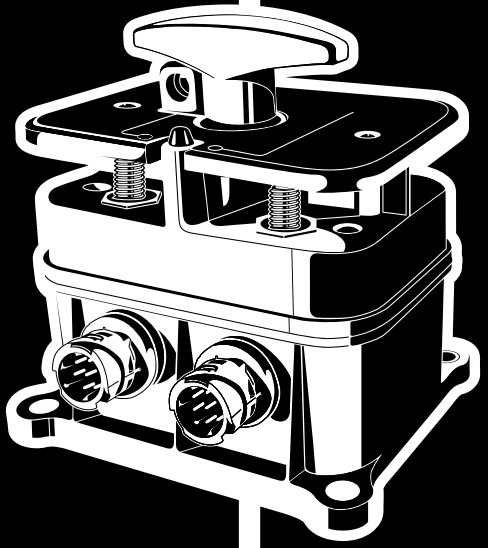


® TSWITCH

500 Amp Continuously Rated Isolation Switch with Safety Lockout

BATTERY MASTER SWITCH

TSWITCH® OVERVIEW

The TSWITCH® DR Battery Master Switch has been designed to comply with Australian Standards AS 2809.2 and European ADR 2005. The TSWITCH® is a 2 pole bi-stable electro-mechanical switch with mechanical locking features.

Each switch incorporates two auxiliary circuits; one auxiliary circuit (SW 1) to control a circuit of the user's preference and a second (SW 2) used for alternator field isolation.

The primary function of the TSWITCH® is to disconnect and isolate the main battery from the vehicle and the alternator. The TSWITCH® can also be integrated with fire suppression systems.

In an EMERGENCY SHUT DOWN the TSWITCH® disconnects the alternator prior to disconnecting the main battery, preventing damage to the alternator or vehicle electronics. When this occurs the TSWITCH® will need to be reset once the appropriate safety personnel have designated the vehicle safe to operate.

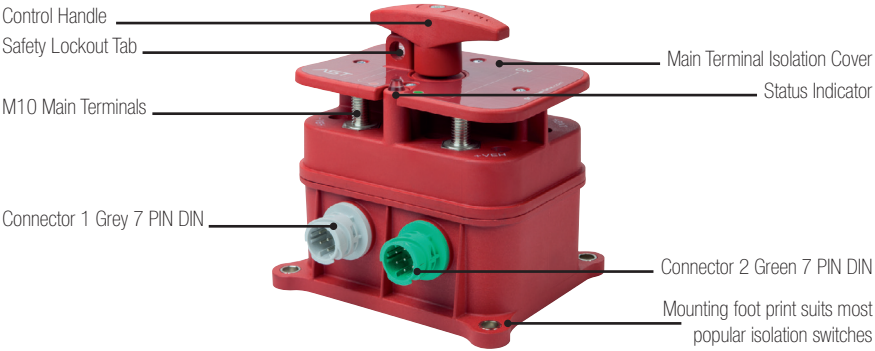
In NON EMERGENCY situations, the operator can isolate the batteries and alternator manually and lock the vehicle out by incorporating a lockable E-Stop device.

Features Include:

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

®TSWITCH

Features



TSWITCH® Part Numbers:

TSW12K - 12V isolation switch Bi-Polar
TSW12PK - 12V isolation switch Uni-Polar
TSW24K - 24V isolation switch Bi-Polar
TSW24VCO - 24V isolation switch Bi-Polar with change over auxiliary contacts

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

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.

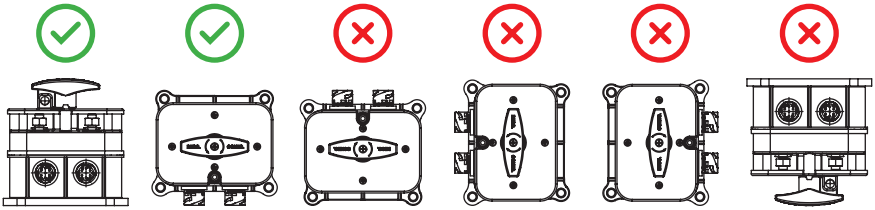
Maximum Tightening torque: 14 Nm

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 me 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.

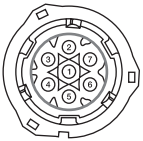
Note: part **TSW12V** and **TSW24V** are Bi polar switches. Both Positive and Negative cables attach to the switch. Special care should be used ensuring that the cables leading to the Battery are attached to terminals named BAT+ and BAT- respectively. All cables leading from the switch to the vehicle must connect to VEH+ and VEH- respectively.

Part **TSW12VPP** is UNI polar meaning the main terminals are all POSITIVE. "ONLY THE POSITIVE CABLES LEADING FROM THE BATTERY TO THE VEHICLE ATTACH TO THE MAIN TERMINALS" Special care should be used ensuring that the cables leading to the Battery are attached to terminals named BAT+ and BAT+ respectively. All cables leading from the switch to the vehicle must connect to VEH+ and VEH+ respectively.

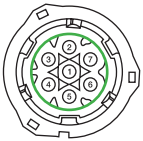
ELECTRICAL

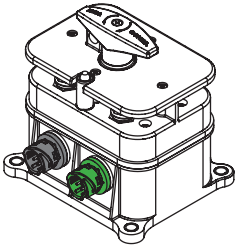
DIN Connections: Mating harnesses sold separately are 1.5 metres in length. These harnesses minimize installation time and improve the quality of the installation. Always ensure that the TSWITCH® is in the off position and each harness has been completely wired into the vehicle prior to connecting each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



NOTE: TSW24VCO
GREY CONNECTOR PIN ID 3 & 4
Auxiliary contact is Normally Closed



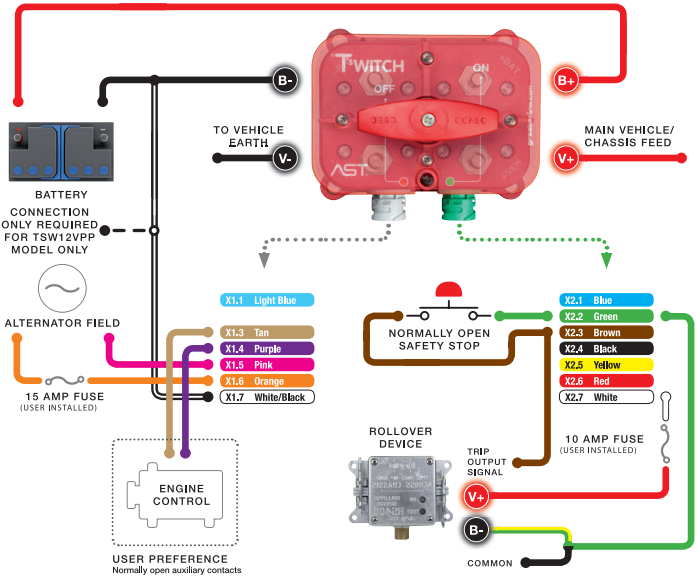


Grey Connector		
PIN ID	Wire Colour	Function
①	Light Blue	Not Used
②	Red/Green	Not Used
③	Tan	*SW 1 Auxiliary Contact N/O#
④	Purple	*SW 1 Auxiliary Contact N/O#
⑤	Pink	*SW 2 Alternator Field N/O
⑥	Orange	*SW 2 Alternator Field N/O
⑦	White/Black	Battery Negative TSW12VPP
*Install 10 Amp fuse within external circuit		

Green Connector		
PIN ID	Wire Colour	Function
①	Blue	Not Used
②	Green	Remote Switch Negative B– Output
③	Brown	Remote Switch Coil (–) input trigger
④	Black	Not Used
⑤	Yellow	B– Over R2 90 Ω resistor
⑥	Red	B+ Over R2 90 Ω resistor
⑦	White	V+ Output

EXAMPLE BASIC WIRING DIAGRAM

TSW12V, TSW12VPP & TSW24V only with RS400



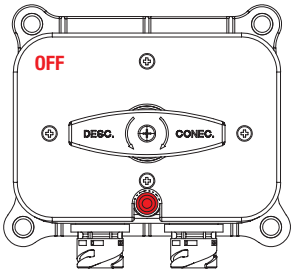
ASSEMBLY

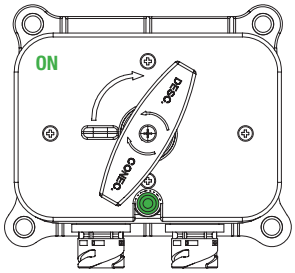
With all electrical connections complete, install top isolation cover. Attach to switch with supplied 4 - 4mm x 12mm phillips head screws. Place TSWITCH® control handle onto switch main control shaft and secure in position with supplied 4mm x 11mm phillips head machine screw.

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 120º degree rest position.

Remote Operation: If switch is activated by remote switch or rollover device, control handle will automatically reset to the off position, LED will change from Green to RED indicating the switch is OFF. Switch must be manually turned back ON. See Manual Operation.





ELECTRICAL CHARACTERISTICS

	TSW12V & TSW12VPP	TSW24V
Operating Voltage	9 to 15 volts	18 to 30 volts
Current Rating	500A continuous	500A continuous
Max Current 5 seconds	3000A	3000A
Max Current 30 seconds	2250A	2250A
Auxiliary 1 Circuit	10A	10A
Auxiliary 2 Circuit	10A	10A
External Trigger	16A	10A
Current Draw OFF Mode	20mA	20mA
IP Rating	IP67	IP67

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®

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