MULTIPLE BATTERY SET-UP FOR HILUX SURF

This system has been developed for a Diesel powered Surf. It is possible to adapt it to suit any other vehicle

FEATURES

- Allows multiple batteries to be charged simultaneously
- Automatic or Manual Modes
- Manual override of Automatic Mode

BENEFITS

- Provides a source of Accessory power for radios etc
- The ability to manage your batteries and ‘jump start’ yourself in an emergency

OPTION 1
This is the basic version and is well suited to those who want to be able to charge their secondary battery for use when the vehicle is not running. This is great for those who like to use battery power for lighting, fridges and music while camping.
Your second battery can be set to charge while the engine is running and will re-set to isolate when ignition is off.
It also gives you the option of a self jump-start only if a 200A Link relay and Heavy duty cables are used for the link. Otherwise it is the old fashioned booster cables from one battery to the other.

OPTION 2.
This is a Multiple Battery System which is similar to Option 1 with the addition of a dedicated battery for powering radios. It has the same design philosophy while allowing two batteries to be charged and automatically isolated when engine is off.

OPTION 3
The big one!
This is a multiple battery set-up with the option of fully automatic linking and isolating of the No 2 engine battery. It has the choice of Manual or Auto-modes with built in over-ride facility.
This option retains the manual control for the dedicated radio battery.

All of these options are laid out on the one system diagram and it is the owners choice how much of a set-up is desired.
Keep in mind that the system can be upgraded at a later date by adding the components as required.

SYSTEM OUTLINE

- Where two batteries are fitted to the vehicle in the engine bay this system will allow them to be linked for starting and charging
- The system automatically isolates the nominated NO2 BATTERY when the ignition key is in the off position, regardless of whether it is in the AUTO or MANUAL mode.
- In addition to this it allows the manual linking of an Auxiliary Battery dedicated to powering your stereo, CD player and communication radios.
- The charging link for both batteries can be unlinked at any time using the ‘UNLINK’ switch.

AUTOMATIC MODE (OPTION 3 ONLY)
When the key is turned to IGN the NO2 BATTERY is linked to the NO1 BATTERY for glow power and start cranking. It will remain linked until:

a) The ‘UNLINK’ switch is pressed
b) IGN key is turned off

The green light on the control module and the optional red light on the link relay under the bonnet indicate its link condition.

Note: The Automatic mode only applies to the No2 Battery.
The AUX POWER BATTERY is linked for charging manually.
**MANUAL MODE**
When the key is turned to IGN the No2 Battery is NOT linked to the No1 Battery
It may be manually by pressing the No2 link switch.

**UNLINKING**
The system will automatically unlink both batteries when the IGN key is off. Alternatively you may unlink them at any time by pressing the UNLINK switch

**AUX POWER ( Option 2,3 )**
The AUX PWR Battery has its own switch to provide power to your radios and this is indicated by a red light located near the switch or radios.

**Key to Parts on the Schematic Wiring Diagram**
All the part numbers are as listed from Dick Smith Electronics
Similar components may be sourced from other suppliers.

**RELAYS**
- **R1** No2 Battery Link solenoid earth feed relay  P8017
- **R2** Aux Power charging relay earth feed  P8017
- **R3** Aux Power Battery charging relay  P8035
- **R4** 200A Linking solenoid
- **R5** Auto/Manual Mode control relay  P8024

**SWITCHES**
- **SW 1** No2 Battery Link  Momentary Action / Push-“On”  P7561
- **SW 2** Aux Pwr Charging  Momentary Action / Push-“On”  P7561
- **SW 3** Unlink ( When IGN is On )  Momentary Action / Push-“Off”  P7561
- **SW 4** Aux Power to radios  Toggle or Rocker  P7666
- **SW 5** Auto / Manual select  Toggle or Rocker  P7700
- **SW 6** Emergency link  Toggle ( optional )  P7666

**BEZELS** ( Indicating lights )
- **A** Aux Pwr Charging  P8056
- **B** No2 Battery Linked  P8052
- **C** Glow Indicator  P8054
- **D** Aux Power in use  P8100
- **E** Link Solenoid energised ( optional )  P8100

**BATTERIES**
- **B1** Main engine battery
- **B2** No2 engine battery
- **B3** Auxiliary power battery  S7369
Existing radio power supply
ACC Only

Radio(s)

D

SW4

R3

B3

Aux Battery
Under Pax seat

12VDC

SW6

AUX-POWER CIRCUIT

AUTO-LINKING CIRCUIT

200A Relay

B1

B2

GLOW PLUGS

SW6

R5

R4

MOMENTARY ACTION

SW5

R1

SW1

R2

MOMENTARY ACTION

SW2

SW3

R3

MOMENTARY ACTION

12VDC

Ground
THIS IS A LAYOUT GUIDE ONLY
REFER TO SCHEMATIC DIAGRAM FOR CIRCUIT DETAILS

LOCATE UNDER DASH

LOCATE IN CTR CONSOLE NEAR RADIO

LOCATE UNDER PASSENGER SEAT

ACC ONLY INPUT

LOCATE ON DASH