**Installation**

**Battery Monitor**

Wires:
- black - Battery (GND)
- red + Battery (Main)
- blue + Battery (Aux)
- green Relay Control (86)

**Battery Isolator**

**Wiring (Diagram 1)**

- Recovery Winch
- Alternator
- Main Battery
- Starter Battery
- AUX Battery

**Users Manual**

- **Automatic Battery Link (green LED)**
  The Battery Isolator links the two batteries automatically while the engine is running and isolates the two batteries for discharging. The green LED indicates that the batteries are linked. The system recognizes charge on both batteries (Alternator or Starter Battery or Solar Power/Battery charger on Aux battery) and links the batteries for parallel charging.

- **Manual Battery Link, override function (red LED)**
  In an emergency situation (defective or empty Main Battery) or in case of higher power consumption the two batteries (Main & Aux) may be connected together by activating the link button (red LED manual override is on). After 30 minutes (or immediately after activating the auto button), the system returns to the automatic mode. The Load Sharing Function with the manual battery link reduces the stress on alternator wiring and the batteries in conjunction with the use of electrical winches. If high power consumption is needed from both batteries for longer time, actuate the link button again before the 30 minutes timer expires, preventing from batteries separator. Avoid pressing the auto button under full load.

- **Manual Battery Link deactivation**
  In case of an auxiliary battery failure (shorted cells, leaking battery body) it is recommended to disconnect this battery from charge to protect the alternator from overheating. Press link until both LEDs go off (The starter battery is still getting charged). No automatic or manual linking is now possible anymore. This function has no automatic return! To reset the system press auto for 6 seconds. Now manual and automatic link is active again.

- **Failure and alarm indication**
  **Green LED:** If green LED is flashing system indicates a link failure. No charge is going to the other battery (check power terminals wiring between batteries and power relay to locate failure).
  **Red LED:** If red LED is fast flashing main battery is low. If red LED is flashing slowly auxiliary battery is low. Alarm level is for both batteries if voltage is 12V or less.

- **Winch applications**
  Connect an electrical recovery winch to the main battery as shown in Diagram 1.
**Installation Instructions**

Connect the black, red and blue wires directly to the battery terminals as shown in the wiring diagram. Use protection hose for secure installation (passing firewall), otherwise use 6A fuse for blue and red wire at battery terminals. Extension of wires: black, red: 1.5mm², blue: 0.5mm², no restriction in length <10m total.

Use adequate wires (25mm²) for the heavy duty wiring from the batteries (+) to the IBS 200A relay (87/30 terminals). Install a by-pass wire (25mm²) between Main Battery Plus (Start) and Aux Battery Plus to increase power performance. The terminal kit is included.

Check the polarity of the supply wires from the Battery Monitor: red = Battery PLUS black = Battery MINUS.

Check the correct wiring of the relay. The link of the relay terminals 85 to 87 has to be connected to Main Battery Side as shown in the wiring diagram! Do not over tighten power terminals 36 and 87 of relay. The relay is hot in normal application to keep the contacts securely closed.

The installation into a Toyota LandCruiser HDJ80 (version Europe) requires special instructions. Please contact IBS or your local dealer.

**System information** (for the computer minder)

This new system with microcomputer is designed in interrupt software architecture, in very rare cases it might be the display is flickering. Several tasks with different priority might be processed at the same time. Reloading the display LEDs has the lowest priority and therefore has to wait sometimes for a split of a second. Most of the time the system remains in the sleep mode, for very low power consumption, processor then only draws 1uA.

**MADE IN SWITZERLAND**

**Applications**

- Commercial Truck and 4WD Industry
- Recreational 4WDs / Expedition Vehicles
- Motorhomes, Campers
- Yachting

**Warranty:**

This warranty shall not apply to any product which has been subjected to any misuse, negligence, accident or has been used (or operated, broken seal) for any other purpose than was designed.

5 year: Installation done by an IBS approved auto electrician.
3 months: Other installations.

**IBS RMB Sytem Upgrade (Relay Booster Module)**

For maximum request in system availability the optional RMB module offers full link start support from auxiliary battery even if starter battery has failed totally and shows less than 10V.

**Emergency Instructions**

**DO NOT COMPLETE THE FOLLOWING MODIFICATION UNLESS THE RELAY AND HEAVY DUTY WIRING ARE IN WORKING ORDER.**

If the TJM-DBS is damaged by fire, welding sparks, salt water, an accident or crash or the battery monitor is stolen, the batteries can be linked by cutting the green wire that connects the relay and the TJM-DBS.

1) Cut the green wire connecting the DBi-DBS to terminal 86 on the relay. (Refer Diagram 2)
2) Connect the green wire from Terminal 86 on the relay to a negative terminal of either battery or to an earthing point. A 'CLACK' noise will be made when the relay links the batteries.

Note: As long as the green wire connects the relay to a negative terminal or an earthing point, the relay is on and is drawing power. The batteries can no longer be automatically disconnected using the auto-button.

**Diagram 2**

![Diagram 2 Image]

**Specifications**

- **System Setup Architecture**
  - MicroComputer
  - MicroPower
  - Interrupt based

- **Supply Voltage**
  - 4.8V

- **System Voltage**
  - 12V

- **Measuring Range (sense wire blue)**
  - 4.1V

- **Linking threshold starter battery (link/sep)**
  - 13.1V/12.8V

- **Linking threshold Aux battery (link/sep)**
  - 13.1V/12.8V

- **+10%**

- **Consumer stand-by**
  - <0.5mA

- **Link failure detector / green LED**
  - Slow blink

- **Low battery alarm threshold main red LED**
  - <12V

- **Low battery blink interval main batt/rec LED**
  - 2 Seconds

- **Low battery alarm threshold aux / red LED**
  - <12V

- **Low battery blink interval aux batt/rec LED**
  - 6 Seconds

- **Relay Consumption case-state**
  - 0.6 A
  - 200A/500A

- **Relay Max/Continuous load/flash current**
  - Silver AgSnO2

- **Contact life cycle (Cycle@Ih)**
  - 1000/00@200A

- **Starter and Gel batteries may be combined**
  - yes

- **Operating Temperature**
  - <40°C, >80°C

- **Housing**
  - ABS black

- **Protection Level**
  - IP52

- **Mount**
  - IBS RV System

- **PCB polyurethane sealing**
  - yes

- **Wires**
  - red: Supply/Sense (Main Battery)
  - black: GND (Main Battery)
  - blue: Sense (Aux Battery)
  - green: Relay Control (open collector)

- **Protection**
  - against wrong polarity
  - against overload of relay driving circuit on PC Board with SMD Electronic Security Devices, nc fuses have to be replaced

**RoHS OK**

*No liability for damages as a result of misuse, negligence, accident or wrong installation will be incurred.*