**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 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 concert with the use of electric winches. If high power consumption is needed from both batteries for longer time, activate 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 de-activation**
  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 battery (check power terminals wiring between batteries and power relay to locate failure).
  **Red LED:** If red LED is flashing main battery is low. If red LED is flashing slowly auxiliary battery is low. Alarm level is for both batteries if voltage is 24V or less,

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

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**Battery Monitor**

- **Wires:**
  - Black: Battery (GND)
  - Red: +Battery (Main)
  - Blue: +Battery (Aux)
  - Green: Relay Control (86)

**Battery Isolator**

**Mount Unit**

**Release Unit**

**Wiring (Diagram 1)**

- **Recovery Winch**
  - Black
  - Red
  - Blue
  - Green

- **Alternator**
  - 87 30
  - 85 86

- **DBi-DBS Dual Battery System**

- **Mount Unit**

- **Release Unit**

- **IBS 100A/24V Relay** (view from contacts)

- **24V-Starter battery**
  - Main

- **24V-Bord battery**
  - Aux

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**IBS Awards**

- 2008 Road Award
- 2008 European Battery Award
- 2008 Global Media Award
- 2008 SÜK Baterie Award

**5-Year Warranty**
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, green: 0,5mm², no restriction in length < 10m total.

Use adequate wires (25mm²) for the heavy duty wiring from the batteries (+) to the IBS 10A relay (87/30 terminals). Install a by-pass wire (25mm²) between Main Battery Minus (Starter) and Aux Battery Minus to increase wiring 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 30 and 87 of relay, the relay is hot in normal application to keep the contacts securely closed.

System information (for the computer and indeed)
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 for a second. Most of the time the system remains in the sleep mode, for very low power consumption, processor then only draws 16uA.

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 subject 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 a IBS approved auto electric an.
3 months: Other installations.

IBS RBM Sytem Upgrade (Relay Booster Module)
For maximum request in system availability the optional RBM module offers full link start support from auxiliary battery even if starter battery has failed totally and shows less than 20V (Currently 24V not available).

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 spikes, salt water, an accident or crash of 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 negatve 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,

Specifications

System Setup
Architecture: MicroComputer

Supply Voltage
8.32V

System Voltage
24V

Measuring Range (sense wire blue)
8.32V

Linking threshold (link/sep) starter battery
26.2V/25.6V

Linking threshold Aux battery (link/sep)
26.2V/25.6V

Accuracy +1.1%

Consumer stand-by <0.5mA

Link failure detector / Green LED slow blink

Low battery alarm threshold main red LED <24V

Low battery blink interval main batt/aux LED 2 Seconds

Low battery alarm threshold aux / red LED <24V

Low battery blink interval aux batt/aux led 6 Seconds

Relay Consumption cn-state 0.18A

Relay Max/Continuous load/short current 100A/250A

Relay contact material silver AgSnO2

Life time contacts (cycle@MN) 100,000@100A

Starter and Gel batteries may be combined yes

Operating Temperature 40°c to +80° C

Housing ABS black

Size 73x50x33 [mm]

Protection level IP52

Mount IBS RN/S System yes

PCB polyurethane sealing (protect against humidity/corrosion)

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

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Diagram 2

[Diagram showing the wiring connections and relay setup]