**24V/12V Dual Battery Display**

**Battery Monitor**

- **Wires:**
  - red: +Battery 24V (Main)
  - black: -Battery (GND)
  - blue: +Battery 12V (Aux)

**Display**

- Main 24V
  - red: >29.0V: High charge
  - yellow: >28.0V: Proper charge mode
  - green: <28.0V: Regular charge mode

- Aux 12V
  - red: >14.5V: High charge setting
  - yellow: >14.0V: Mic charge setting
  - green: <14.0V: Low charge setting or float charge mode

- Optional IBS-DBM20A InCarCharger see reverse side.

**Users Manual**

**General Functions**

This Battery Monitor has been designed for 24V/12V Dual Battery Systems. The Monitor displays the stored energy of both batteries and the charge voltage while charging them with an alternator, a solar panel, or any other source.

The battery voltage of each battery is visible for 30 sec after pushing the display button.

**LED Indicators:**
- green: Batteries are in the safe working range
- yellow: Check batteries
- red: Batteries should be charged

The LED's show the energy level of loads are switched off:
- 25.2V (12.6V) = 100%
- 24.8V (12.4V) = 75%
- 24.4V (12.2V) = 50%
- 24.0V (12.0V) = 25%

Low batt: flashing and beeping indicates low battery situation. During first startup software version is displayed (SW Version 6.3: Main shows 6 and Aux 3 LEDs)

**Display of Charge Voltage**

While the engine is running the 24V Starter batteries are indicated:

- **Main 24V:**
  - red: >29.0V: High charge
  - yellow: >28.0V: Proper charge mode
  - green: <28.0V: Regular charge mode

If display (red button) is pressed twice, the charge level of Aux 12V battery will be indicated after a beep for 10 Sec. During this period, the charge display is flashing and leaves this display mode after a beep.

If display (red button) presses once, the charge level of Main 24V battery will be indicated until display turns automatically.

**Optional Winch Application**

Connect an electric recovery winch to the main 24V battery as shown in the wiring diagram.
Installation Instructions

**IBS-DBD:**
Connect red to Main plus, blue to Aux plus, black to GND

**IBS-DBM20A:**
Connect red (4mm²) to Main plus, blue (4mm²) to Aux plus, black to GND, on Aux use the supplied length of up to 1m (do not extend), or Ma n use the supplied length but wire can be extended up to 6m length if needed. Install the supplied 30Amp fuse on Ma n and Aux battery close to battery.

Applications:
- Commercial trucks and 4WDs
- 4WDs / Expedition Vehicles
- Yachts, Motor homes

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

- 2 year: Installation done by an IBS approved auto electrician.
- 2 year: Other installations.

**DBM20A Functionality**

24V vehicles can be equipped with the IBS-DBM20A "InCarCharger". While the car is running the alternator the 2x12V starter batteries (in series) and at the same time the DBM charges 12V Aux battery with the 3 or 4 stage (boost, absorption, equalize if selected), float, battery charge mode. 

- Simple installations, only 3 connections have to be made: Main, Aux and GND,
- While the DBM detects an alternator voltage above 26.2V the Aux battery is going to be charged depending on the selected charge mode: low, med um, high and equalize. This guaranties an effective and fast charge to the Aux battery.

Applications

Specifications

- **System Setup**
- **MicroComputer**
- **Architecture**
- **RISK**
- **MicroPower**
- **Interrupt basec**

- **Supply Voltage**
- 5.32V

- **System Voltage**
- 24V/12V

- **Measuring Range (sense wire blue)**
- 8.32V

- **Display Range (Main Battery Voltage)**
- 22.0V, 25.6V

- **Display Range (Aux Battery Voltage)**
- 11.0V, 2.8V

- **Display Range (Charge: Main/Alternator)**
- 26.0V, 29V

- **Display Range (Charge: Aux/DBM20A)**
- 13.0V, 14.9V

- **Accuracy**
- ±1%

- **Consumption stand-by**
- <0.5mA

- **Consumption max display active (30 sec)**
- <20mA

- **Main:**
  - Low battery alarm stage1 main/aux red LED <24V/buzzer
  - Low battery alarm stage2 main/aux red LED <22V/buzzer
  - Low battery alarm stage1 main/aux red LED <12V/buzzer
  - Low battery alarm stage2 main/aux red LED <11V/buzzer

- **Operating**

- **Temperature**
- −40°...+60° C

- **Housing**
- ABS black IP40

- **Size**
- 100x65x24 [mm]

- **Protection level**
- IP52

- **Mount**
- IBS RMS System

- **Wires:**
  - red: Supply/Sense (Main Battery)
  - black: GND (Main Battery)
  - blue: Sense (Aux Battery)

- **Protection:**
  - against wrong polarity
  - or PC Board with SWD Electronically Security Devices, no fuses have to be replace

No liability for damages as a result of misuse, negligence, accident or wrong installation will be accepted from IBS!