BATTERY WATCH
BW 801E

LEAB
mobile energy

USER MANUAL
VERSION 2
10/10/2024

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1 About this Manual

Read this manual carefully and keep it in a safe place. This manual is aimed at Skilled workers in the field of automotive electrics

Any modifications to the product or its components are prohibited and do not conform to its intended use. Only use original LEAB or LEAB-approved accessories.

Throughout the manual, you will be alerted to warnings and safety notices about potential hazards associated with handling the device. The colours and signal words indicate the severity of the hazard:

Notice

Possibility of material damage

The signal word *Attention* indicates that there is a possibility of material damage. To avoid material damage, follow the instruction.

⚠ CAUTION

Danger that can lead to minor injuries

A safety instruction with the signal word *CAUTION* denotes a hazard with a low degree of risk which, if not avoided, can result in minor or moderate injury. Read the safety information carefully and follow the instructions to avoid it.

⚠ WARNING

Hazards that can lead to severe injuries or death

A safety instruction with the signal word *WARNING* indicates a hazard with a high degree of risk which, if not avoided, will result in death or severe injury. Read the safety information carefully and follow the instructions to avoid it.

⚠ DANGER

Danger that will lead to severe injury or death

A safety instruction with the signal word *Danger* indicates a hazard with a high degree of risk which, if not avoided, will result in death or severe injury. Read the safety information carefully and follow the instructions to avoid it.

You will find notes at some points in the manual. These appear as follows:

TIP

A note provides useful tips and information about the product.

Read the note carefully and follow the instructions where applicable.

2 General Safety

This manual will help you to handle the device safely. Use the device solely in accordance with its intended use. Observe the safety instructions.

⚠ WARNING

Fire hazard

Incorrect installation or inadequate wiring can result in a build-up of heat.

1. Only install the device as described in this guide.
2. Select a sufficient cable cross-section to connect the device.

⚠ WARNING

Risk of injury from electric shock

Short circuit currents can result in electric shock.

1. Disconnect the battery negative lead prior to assembly/disassembly

Notice

Incorrect installation can damage the device

Using the device outside the specified operating parameters may damage the device.

1. Before assembling and installing the device, make sure that it is suitable for your use.

Notice

Device defects from incorrect installation

Incorrect installation can result in device defects.

1. Install the device in a dry and cool location.

Notice

Damage due to residual voltage

Residual voltage in the vehicle power circuit can cause damage to the vehicle electronics.

1. Do **not** place the positive lead on the vehicle bodywork.

2.1 Intended Use

Use the BW 801e battery monitor to protect your battery against deep discharge. The device prevents the battery voltage from falling below a set level. Use the device for batteries with a nominal voltage of 12 V or 24 V.

3 Package Contents

No.	Name
1x	BW 801e battery monitor
2x	Insulating cap (400N9V02)
1x	3-colour LED

Accessories

Part number	Name
1401036701	3-colour LED in socket with cable (5m)
1401036702	3-colour LED in socket with cable (1m)

4 Technical Specifications

	Part no.: 1305041043
Model	BW 801e
Nominal voltage (DC)	12 V or 24 V
Continuous load	50 A
Overload (10 s)	70 A
Switch-off voltage	12 V: 9 V … 12 V; 24 V: 18 V … 24 V (adjustable)
Operating temperature	-30 °C … +70 °C
Self consumption	6 mA
Dimensions (L x W x H)	100 mm x 90 mm x 25 mm
Weight	0.11 kg

5 About this Product

The BW 801e battery monitor is a two-stage safety system to avoid deep discharge of your battery. Audible and visual alarms warn you of an approaching deep discharge. If power continues to be removed from the battery, the battery monitor disconnects consumers from the battery to prevent deep discharge. The threshold values for the alarm and for switching off the consumers are set via DIP switches.

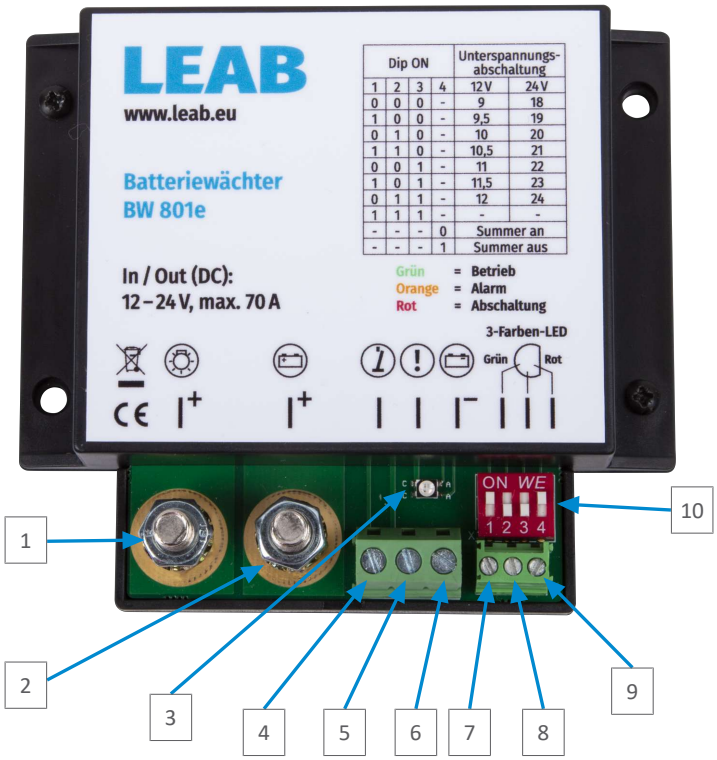

Fig. 1: BW 801e

1	Consumer connector	2	Battery connector
3	Operating display	4	“External switch” connector
5	“Alarm output” connector	6	“Ground” connector
7	“Green” LED connector (+)	8	LED connector (-)
9	“Red” LED connector (+)	10	DIP switch

6 Setting the Threshold Values (DIP Switches)

DIP ON				Switch-off voltage [V]		Alarm threshold [V]		Switch-on voltage [V]	
1	**2**	**3**	**4**	**12 V**	**24 V**	**12 V**	**24 V**	**12 V**	**24 V**
0	0	0	-	9	18	9.5	19	10.5	21
1	0	0	-	9.5	19	10	20	11	22
0	1	0	-	10	20	10.5	21	11.5	23
1	1	0	-	10.5	21	11	22	12	24
0	0	1	-	11	22	11.5	23	12.5	25
1	0	1	-	11.5	23	12	24	13	26
0	1	1	-	12	24	12.5	25	13.5	27
1	1	1	-	-	-	-	-	-	-
-	-	-	0	Internal buzzer on					
-	-	-	1	Internal buzzer off					

7 Installation

Observe the following notes when installing the device:

⚠ WARNING

Risk of injury from electric shock

Short circuit currents can result in electric shock.

1. Disconnect the battery negative lead prior to assembly/disassembly

Notice

Damage due to residual voltage

Residual voltage in the vehicle power circuit can cause damage to the vehicle electronics.

1. Do **not** place the positive lead on the vehicle bodywork.

To install the device, proceed as follows:

1. Disconnect the battery from the vehicle power circuit.

⚠ WARNING! Disconnect the negative cable first.

2. Set the desired switch-off voltage on the DIP switches **(10)**.
3. Connect an earth wire from the battery monitor's ground **(6)** terminal to the battery's negative terminal.

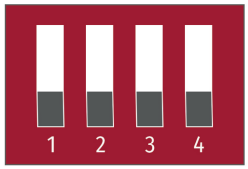

Fig. 2: DIP switch

NOTE! Only the switching current (1 A) is permissible. The consumer load must not lead via the 'ground' connector (6).

4. Disconnect the positive lead from the battery to the consumers and connect the battery monitor at the screw terminals **(1)** and **(2)**.
5. Connect the battery to the vehicle power circuit.

⇨ The device is ready for operation. When the battery voltage is sufficient, the operating display **(3)** lights green.

7.1 Optional: connect external buzzer

To connect an external buzzer, proceed as follows:

NOTE! Contact to ground, max. 1 A.

1. Connect an external buzzer via the 'alarm output' connector **(5)**.

⇨ An external buzzer is connected.

7.2 Optional: Using the battery monitor as a main switch

To use the battery monitor as a main switch for the connected consumers, proceed as follows:

1. Lay a cable with a switch between the negative terminal of the battery and the connector for the external switch **(4)**.

⇨ The battery monitor is used as the main switch.

7.3 Optional: Connect a 3-colour LED

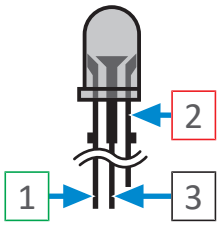

Fig. 3: 3-colour LED

To connect the 3-colour LED, proceed as follows:

1. Connect the anode for green **(1)** of the 3-colour LED to the 'Green' LED connector **(7)** of the BW 801e.
2. Connect the cathode **(3)** of the 3-colour LED to the LED minus connector **(8)** of the BW 801e.
3. Connect the anode for red **(2)** of the 3-colour LED to the 'Red' LED connector **(9)** of the BW 801e.

⇨ The 3-colour LED is connected.

8 Operating status

The operating status of the unit is indicated by the operating display **(3)**, the 3-colour LED, the alarm output **(5)** and the internal buzzer.

Indicator	Status
LED lit green Alarm output inactive Internal buzzer off	Battery voltage is above the alarm threshold setting, device is active.
LED flashes green Alarm output inactive Internal buzzer off	External switch **(4)** is closed, consumers are switched off.
LED lit orange Alarm output active Internal buzzer beeps at interval*	**Safety level 1**: Below alarm threshold. Battery voltage will soon reach the switch-off voltage. 1. Switch the consumers off or charge the battery
LED flashes red Alarm output inactive Internal buzzer beeps 1x	**Safety level 2:** Below switch-off voltage. Consumers have been disconnected from the battery to avoid deep discharge. 2. To supply consumers again, charge the battery to the switch-on voltage.
LED no colour	Device is switched off or incorrectly installed.

* Internal buzzer interval (in seconds): 600 – 300 – 150 – 75 – 37 – 18 – 9.

After that: Internal buzzer beeps every 9 seconds until the switch-off voltage is reached.

9 Decommissioning

⚠ WARNING

Risk of injury from electric shock

Short circuit currents can result in electric shock.

1. Disconnect the battery negative lead prior to assembly/disassembly

To decommission the device, proceed as follows:

1. Disconnect the battery from the vehicle power circuit.

⚠ **WARNING!** Disconnect the negative cable first.

2. Remove the leads on the connectors **(1), (2), (4), (5)** and **(6)** from the vehicle.
3. Remove the device from the vehicle.

⇨ The device is decommissioned.

10 Disposal

Dispose of the device in accordance with the Waste Electrical and Electronic Equipment Regulations (WEEE).

The system must not be disposed of with household waste. Take it to a recycling point or return it to your point of sale.

11 EU Declaration of Conformity

The **BW 801e** complies with the requirements of the following directives:

– 2014/30/EU: EMV
– 2011/65/EU: RoHS

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We make energy mobile.

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