

# MELFBOX

## ELECTRICAL SUPPLY SYSTEM FOR VEHICLES

**LEAB**  
*mobile energy*



USER MANUAL  
VERSION 2  
06/01/2022

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## 1 About this Manual

Read this manual carefully and keep it in a safe place. This manual is aimed at Qualified electricians.

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.

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### CAUTION

#### Danger that can lead to minor injuries

Safety instructions with the signal word *CAUTION* indicate a hazard which, if not avoided, can result in minor or moderate injury. Read the safety instructions carefully and follow them to avoid the hazard.

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### WARNING

#### Hazards that can lead to severe injuries or death

Safety instructions with the signal word *WARNING* indicate a hazard which, if not avoided, can result in death or severe injury. Read the safety instructions carefully and follow them to avoid the hazard.

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### DANGER

#### Danger that will lead to severe injury or death

Safety instructions with the signal word *Danger* indicate a hazard which, if not avoided, will result in death or severe injury. Read the safety instructions carefully and follow them to avoid the hazard.

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You will find useful tips and tricks in certain parts of the manual. These appear as follows:

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**TIP**

**Tips provides additional, useful information.**

Read the tip carefully and follow the instructions where applicable.

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## 2 General Safety

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

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**⚠ WARNING**

**Danger from short circuits**

Open and damaged cables can cause short circuits that can lead to serious injuries.

1. Before operating, make sure there are no open or damaged cables.
  2. Replace defective parts or damaged cables immediately.
- 

**Notice**

**Reverse polarity can damage the equipment**

Errors when connecting the cables can cause equipment damage.

1. Before operating, make sure that all cables are connected correctly.
- 

**Notice**

**Equipment damage and risk of cable fire**

Using the unit at too high a voltage can lead to cable fire and equipment damage.

1. Only use the device within the specified voltage limits.
-

## 2.1 Intended Use

The MelfBox is a vehicle electrical supply system.

The system is designed to operate with a nominal voltage of 230 V (+/- 10%). The IP55 rating protects it against the ingress of dust in damaging quantities and against water jets.

## 2.2 Foreseeable Misuse

Only use the system within the specified voltage limits of 230 V (+/- 10%).

Do not point a high-pressure cleaner or other devices directly at the system when cleaning the vehicle.

## 3 About this Product

The MelfBox is a vehicle electrical supply system. It has a potential-free switching contact (normally open contact) to create an immobiliser. An electronic system prevents contact erosion. The operating display provides information about the current system status.

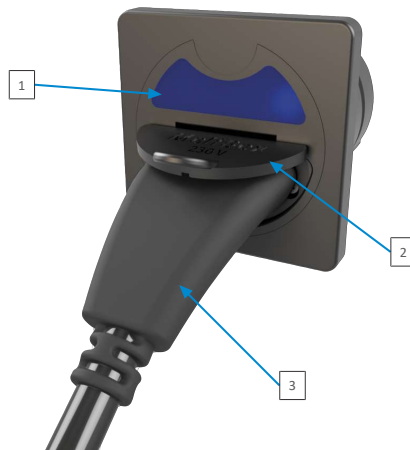
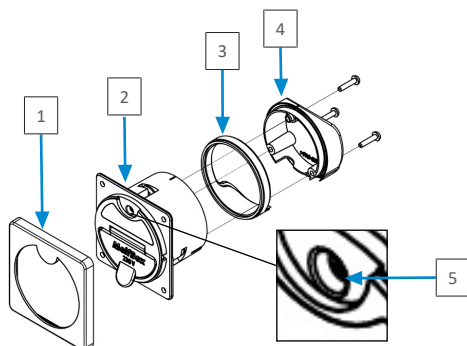


Fig. 1: MelfBox supply unit

- 1 Operating display
- 3 Coupling

- 2 Flap



1 Cover	2 Housing with body seal
3 Housing seal	4 Cap
5 Retaining screw	

#### 4 Technical Specifications

##### Part no. 1105002002

Modell	MelfBox
Nominal voltage (AC)	230 V (+/- 10%)
Current, max. (AC)	16 A
Frequency	50 Hz
International Protection (IP class)	IP55
Protection class	I
Operating display	LED
Switch contact	1 A
Material	Polyamide, glass fibre reinforced (PA6 GF30)
Cable cross-section	2.5 mm <sup>2</sup>
Contacts	L1/N/PE
Installation depth	56 mm
Installation diameter	55 mm
Weight	0.12 kg
Dimensions (L x W x H)	62 mm x 67 mm x 67 mm

## Package Contents

No.	Item
1x	Cover
1x	Housing
1x	Housing seal
1x	Body seal
3x	Screw 3.5 x 14
1x	Cap

## 5 Creating a Body Cutout



### TIP

To ensure perfect operation, observe the following notes on the assembly site:

1. Choose a vertical surface.
2. Choose a site with minimum dust and which is protected from jet water.
3. Make sure that there is sufficient space at the assembly site.

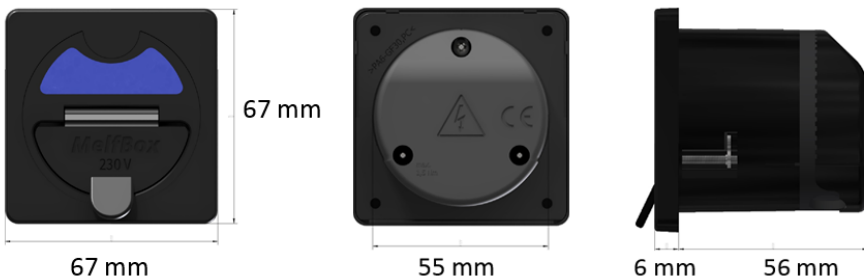


Fig. 2: MelfBox dimensions

To create the body cutout, proceed as follows:

1. Saw a hole ( $\varnothing$  55 mm) in the vehicle body.
  2. To prevent corrosion, seal the cut surfaces.
- ⇒ The body cutout is now created.

## 6 Installation

### Preparation

Before connecting the unit, proceed as follows:

**⚠ CAUTION!** Install a suitable fuse in the vehicle (up to 16 A).

1. Route a connection cable (H07RN-F, 3 x 2.5) in the vehicle.
  2. Attach the connection cable to the vehicle installation.
  3. Optional: Route a cable (H05RN-F, 2 x 0.5) for the immobiliser in the vehicle and connect it to the specific vehicle installation (control module or similar).
- ⇒ The unit is now ready to be connected.

### Connecting the Supply Unit



To connect the device, proceed as follows:

4. Pierce the housing seal at the intended location with a pointed tool.
  5. Feed the connection cable (H07RN-F, 3 x 2.5) through the hole.
  6. Connect the wires of the connection cable to the corresponding screw terminals.
- ⇒ The device is connected.

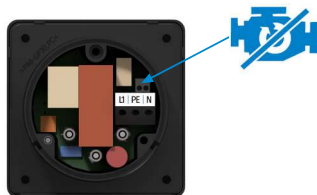
### Optional: Connecting the Immobiliser



#### TIP

The MelfBox has a potential-free switching contact (normally open contact) to create an immobiliser.

The design of the immobiliser depends on the vehicle. Inquire from your vehicle manufacturer.





To connect the immobiliser, proceed as follows:

**⚠ CAUTION!** Install a suitable fuse in the vehicle (up to 1 A).

7. Insert the immobiliser cable (H05RN-F, 2 x 0.5) through the second hole of the housing seal.
8. Insert the wires of the immobiliser cable into the push-in terminals (max. current: 1 A).

⇒ The immobiliser is connected.



### TIP

To protect the contacts of the immobiliser, their cable is connected to the MelfBox via a Phoenix plug.

1. Before disassembling the MelfBox, disconnect the Phoenix plug of the immobiliser cable above the connection terminals.

## 7 Assembly

To install the device, proceed as follows:

- ✓ The cables in the MelfBox housing are correctly connected.
  - ✓ The body seal is firmly seated on the housing.
1. Place the housing seal in the cap.
  2. Attach the cap to the supply unit with the 3 screws (3.5 x 14).
  3. Check the tightness of the housing seal.
  4. Push the supply unit into the body cutout.
  5. Tighten the 3 screws on the front until the supply unit is firmly seated in the body cutout (maximum torque: 1 Nm).
  6. Attach the cover.
- ⇒ The device is mounted and ready.



## 8 Operation

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### Notice

#### Inactive immobilisers can cause damage

Note that immobiliser only works when the MelfBox is active (operating display illuminated).

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### TIP

#### Electronics to prevent contact burnout requires voltage

Contact N is electronically switched and is only open when a 230 V voltage is applied.

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To install the device, proceed as follows:

1. Plug the two-pin earthed plug of the connection cable into a 230-V mains supply.
2. Open the flap of the supply unit.
3. Plug the coupling into the supply unit.

⇒ The voltage input is provided at the load output of the supply unit. Connected consumers are supplied. The operating display shows the operating status of the device.

## 8.1 Operating Status

LED	Operating status
Blue, flashing	The MelfBox is active.  A minimum of 50 W power is removed from the supply unit (the greater the power, the faster the flashing).
Yellow, steady light	The MelfBox is active.  <b>No</b> power is removed. <ul style="list-style-type: none"> <li>– Check the connection of the consumers.</li> <li>– Check the fuse at the outlet of the MelfBox.</li> </ul> <p><b>NOTE!</b> This operating status only occurs immediately after inserting the MelfBox coupling. The MelfBox does not switch back from “blue” to “yellow”.</p>

## 9 Cleaning and Maintenance



### **⚠ WARNING**

#### **Danger from electric shock**

Cleaning and maintenance work on a live unit can lead to serious injury from electric shock.

1. Make sure that the device is de-energised before carrying out any work.



### **Notice**

#### **Strong jet water can damage the device**

Cleaning with strong jets of water can cause the device to become damaged.

1. Do not aim pressure washers or other devices directly at the device.

### Regular Activities

- Check the equipment for external damage each time before you use it.
- Clean the supply unit once a month with compressed air.
- Protect the coupling and combination cable from being run over, getting wet and other liquids.
- Check the tightness of the supply unit in the vehicle body at regular intervals.

### 10 Accessories

You can order accessories either through your dealer or directly from LEAB. Just visit our webshop at [www.leab.eu](http://www.leab.eu) or call us on: +49(0) 4621 9 78 60-110.

Part number	Description
1105001001	Connection cable 2.5 m
1105001002	Connection cable 5 m
1105001003	Connection cable 10 m

### 11 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.

### 12 EU Declaration of Conformity



The MelfBox complies with the requirements of the following directives:

- 2014/30/EU: EMV
- 2014/35/EU: NRL
- 2011/65/EU: RoHS







# We make energy mobile.

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