Operating Instructions

BLC Box (30058)

Imprint:

These operating instructions do not represent a contractual relationship.

We reserve the right to make changes errors and omissions excepted.

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1 Introduction

The Industrieelektronik Pölz GmbH BLC (Battery Level Control) battery charging and compensating box that you have purchased is a high-quality product. Here is an overview of the most important benefits that you will enjoy:

- Different loading of two batteries that are switched in series in a 24 V battery system (e.g. due to auxiliary equipment) or a different internal resistance (due to temperature differences, for example) can lead to one of the two 12 V batteries being faulty earlier. The battery charging and compensating box allows you to exactly balance charging of two 12 V vehicle batteries in a 24 V battery system. The continuous compensation process ensures a long service life for the battery.
- The battery charging and compensating box can compensate different loading between the batteries of up to 3 A.
- At rest, the battery charging and compensating box consumes a very small amount of current (the no-load current is around 0.9 mA). The benefits: You do not need to install additional (24 V to 12 V) current converters that use a large amount of current!

1.1 Liability and warranty

Use the battery charging and compensating box only in accordance with its intended use (see also Chapter 2.1 INTENDED USE).

The manufacturer warranties the battery charging and compensating box within the scope of the conditions of sale and delivery that apply in each case.

The manufacturer accepts no liability for damage due to ignoring the information in these operating instructions as well as to incorrectly assembling, operating or servicing the battery charging and compensating box.

1.2 Customer service

If you need technical information or have any queries or need to order spare parts, please contact your local dealer or e-mail our customer service: office@poelz.at

To ensure that your inquiry is processed quickly, please state the following information:

- Device type
- Item number
- Serial number

You will find the device type and the serial number on the type plate on your battery charging and compensating box (see also Chapter 3.2 TYPE PLATE). For information on the item number, see also Chapter 8.1 TECHNICAL DATA.

1.3 About these operating instructions

Read the operating instructions carefully before using the device and observe the safety and warning instructions to ensure perfect operation of your battery charging and compensating box.

1.4 Explanation of symbols and instructions

This symbol warns you of a hazardous location. This signal word describes the severity of the imminent danger.

Danger!

Personal injury can occur in the case of incorrect handling.

Caution!

Damage to equipment or property can occur in the case of incorrect handling.

Danger electrical hazard!

This symbol warns you of an electrical hazard.

Touching live parts can lead to injury or even be fatal.

Note!

This symbol indicates tips and useful information on handling the battery charging and compensating box in the best possible way.

2 Safety Information

The battery charging and compensating box made by Industrieelektronik Pölz GmbH has been manufactured and inspected in accordance with valid standards and guidelines and recognized technical regulations. However, incorrect use can lead to physical harm to users or damage to the battery charging and compensating box.

Always comply to the letter with the safety information and warnings given in these operating instructions.

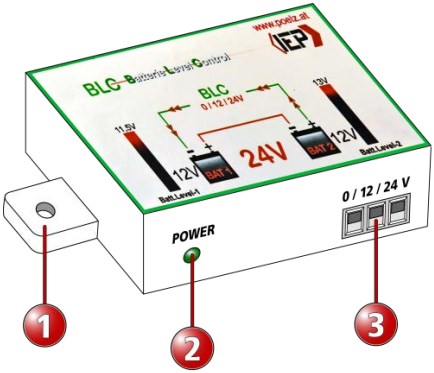
2.1 Intended use

The battery charging and compensating box in intended to be used exclusively to exactly balance charging of two 12 V vehicle batteries in a 24 V battery system.

Any other use is not the intended use and voids the warranty.

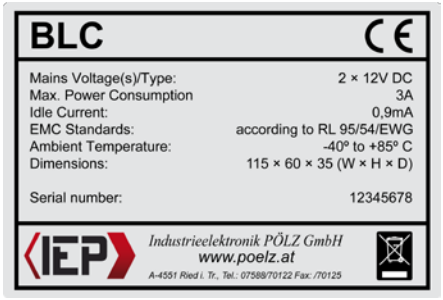
3 Description of the Device

3.1 Device overview

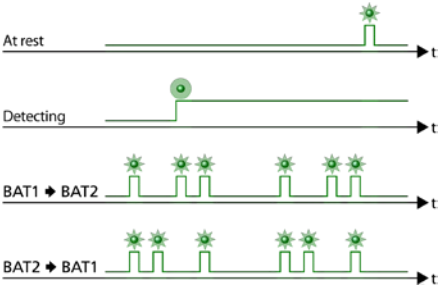


① Installation fixture
② POWER/LED display
③ 0 / 12 / 24 V connection

3.2 Type plate



3.3 LED display/flashing code



The system shows charge compensation on the LED display as a flashing code. The flashing code is composed of two parts:

1. Battery in series (BAT1): This is indicated by the LED display flashing once.

2. Battery in series (BAT2): This is indicated by the LED display flashing twice.

At rest: The LED display flashes at five-second intervals.

Detecting: The LED display is lit continuously until the battery charging and compensating box has detected both batteries.

Charge compensation from BAT1 to BAT2:
1x flash for BAT1/brief pause / 2x flashes for BAT2/long pause etc.

Charge compensation from BAT2 to BAT1:
1x flash for BAT2/brief pause / 1x flash for BAT1/long pause etc.

4 Installation

Danger!

Installation work must only be carried out by qualified people who have been tasked with this work.

4.1 Unpacking the battery charging and compensating box

Remove the packaging material. Check that the contents of the package and the battery charging and compensating box are complete and inspect for possible damage. If any components are missing or are damaged, contact our customer service immediately (see also Chapter 1.2 CUSTOMER SERVICE).

4.2 Installing the battery charging and compensating box

Screw the battery charging and compensating box on the Installation fixture tight close to the battery or directly in the battery box.

Caution!

Use only original Industrieelektronik Pölz GmbH spare parts.

If you use third-party spare parts there is no guarantee that they have been designed optimized for application or for safety.

4.3 Connecting the battery charging and compensating box

Connect the battery charging and compensating box to the (24V) battery system (see also Chapter 4.4 CONNECTION DIAGRAM).

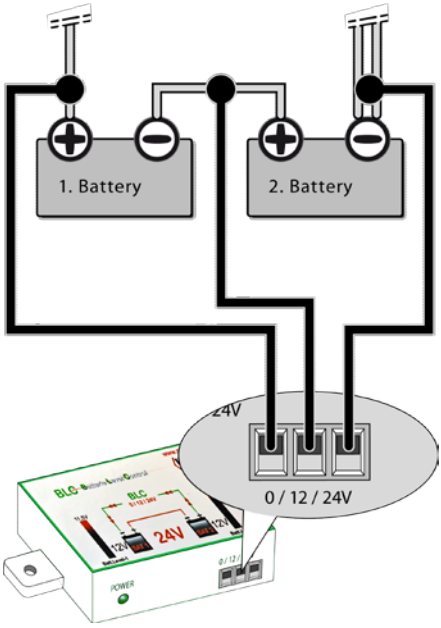
Note!

If you are using the battery charging and compensating box in a 12 V battery system with auxiliary equipment, it is crucial to place an intermediate fuse with a maximum of 16 A before the positive poles of the auxiliary equipment.

Check the intermediate fuse on a regular basis! If the fuse trips, the auxiliary equipment (e.g. radios) will not be charged.

4.4 Connection diagram

Connect the connections of the battery charging and compensating box to the associated connecting terminals on the batteries.



- 0 V = negative pole of the first battery (no voltage on this connection)
- 12 V = series-connection between both batteries (12 V voltage on this connection)
- 24 V = negative pole of the second battery (24V voltage on this connection)

5 Operation

Caution!

Only use the battery charging and compensating box at ambient temperatures between -40 °C and +85 °C.

5.1 Commissioning the battery charging and compensating box

After connecting the device to the batteries, the LED display is lit continuously until the battery charging and compensating box has detected both batteries.

After this, the battery charging and compensating box takes on the idle state. The LED display flashes at intervals of about five seconds.

5.2 Starting charge compensation

Depending on the charge level, the battery charging and compensating box detects the battery with the higher terminal voltage and the one with the lower terminal voltage.

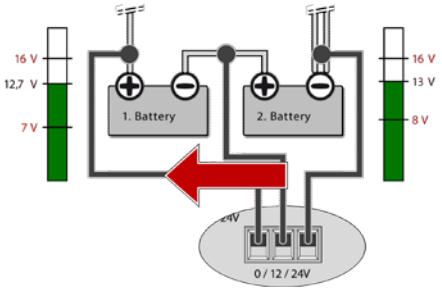
Charge compensation takes place from the battery with the higher terminal voltage to the one with the lower terminal voltage.

The battery charging and compensating box permanently measures the terminal voltage of both batteries and starts charge compensation automatically.

Note!

Both batteries must be in the defined voltage range between a minimum of 7 V (the battery with the lower terminal voltage) or 8 V (the battery with the higher terminal voltage) and a maximum of approximately 14.5 V.

5.2.1 Example of application



The second battery in the series has a voltage that is 0.3 V higher than the first battery in the series.

The charging circuit is switched electronically and the system carries out charge compensation from BAT2 to BAT1. The charging current is regulated proportionate to the voltage difference.

An LED display shows the charge compensation (see also Chapter 3.3 LED DISPLAY/FLASHING CODE).

5.3 Ending charge compensation

Charge compensation is ended when:

- the voltage difference between the two batteries falls below 100 mV
- the voltage of the battery with the lower terminal voltage falls below 7 V
- the voltage of the battery with the higher terminal voltage falls below 8 V
- the voltage of one battery exceeds approximately 14.5 V

6 Dismounting

There are no special regulations for dismounting the battery charging and compensating box.

Danger of short circuit!

Detach the three wires on the battery.

7 Service

Danger!

Servicing work must only be carried out by qualified people who have been tasked with this work.

7.1 Maintenance

Note!

The battery charging and compensating box is maintenance-free.

7.2 Cleaning

Always keep the connections clean.

7.3 Repairs

Danger!

Only the manufacturer or a qualified service engineer are allowed to carry out repairs on the battery charging and compensating box.

8 Appendix

8.1 Technical data

Mains voltage(s)/type of current	2 × 12 V DC in-series (24 V)
Current consumption	3 A max.
Degree of protection	IP56
Ambient temperature	-40 °C / +85 °C
Degree of effectiveness	~85 %
No-load current	0.9 mA
Operating current	0 – 3 A
Protection against polarity reversal	Yes
Short circuit-protection	Yes
Load disconnection	via relay
Dimensions (L × W × H)	115 × 60 × 35 mm
Weight	0.247 kg approx.
Item number	30058

8.2 Disposal

Battery charging and compensating box

At the end of its useful life, never throw away the battery charging and compensating box in domestic refuse under any circumstances. Consult your local council about the options available for correct environmentally friendly disposal.

Packaging



Observe locally applicable regulations for correct recycling.

8.3 Declaration of conformity (DoC)

CE

The CE mark confirms conformity of the device with relevant EU directives.

Industrieelektronik Pölz GmbH hereby declares that the battery charging and compensating box complies with the specifications of the following European Union directives:

- Low-Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC

To obtain the complete declaration of conformity, please contact our customer service: office@poelz.at

Central Office
Industrieelektronik Pölz GmbH
Großendorf 122
4551 Ried im Traunkreis, Austria

Tel.: +43 (0)7588 - 70 122
Fax: +43 (0)7588 - 70 125
E-mail: office@poelz.at
Web: www.poelz.at

Office Germany
IEP Pölz GmbH
Laufener Straße 59
83395 Freilassing, Germany

Tel.: +49 (0)8654 - 478 670
Fax: +49 (0)8654 - 478 673
E-mail: office@poelz.at
Web: www.poelz.at

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