Owners Manual Battery Alert. (BA)

CELL POWER

Specifications:

• Easy installation
• Fully programmable
• Very low use of current
• Automatic voltage detection 12V/24V
• Charge reminder
• Low voltage alarm
• Switched alarm output
• Compact size
• Software fully adaptable to wishes of customers (all order quantities)

Application:

The BA has three main programs. The first two are only to be used for electrical vehicles with 12 or 24V boardsystems. These two programs remind the user that the vehicle has to be charged. The third program is designed as a universal low voltage alarm for 12 or 24V systems. It is usable as a start-stop regulator for generators and chargers. The last program can also be used as controller for battery seperators.

Connection:

The BA has to be positioned as close as possible to the battery. The cable length should be 80cm max. The cable diameter should be at least 1.5mm².
12V: Connect the plus(+) and minus(-) of the BA directly to resp. the plus(+) and minus(-) of the battery.
24V: Connect the plus(+) and minus(-) of the BA directly to resp. the plus(+) and minus(-) of the system.
The Alarm output switches the minus(-). If for example a relay is used, it needs to be connected to the plus of the battery and the minus to the alarm output. When the BA is connected correctly the BA will let the user hear the currently programmed values. As soon as the BA has completed this, the programmed application will start. This is also the moment to re-program the BA.

Schematic:

intercel
MORE THAN BATTERIES
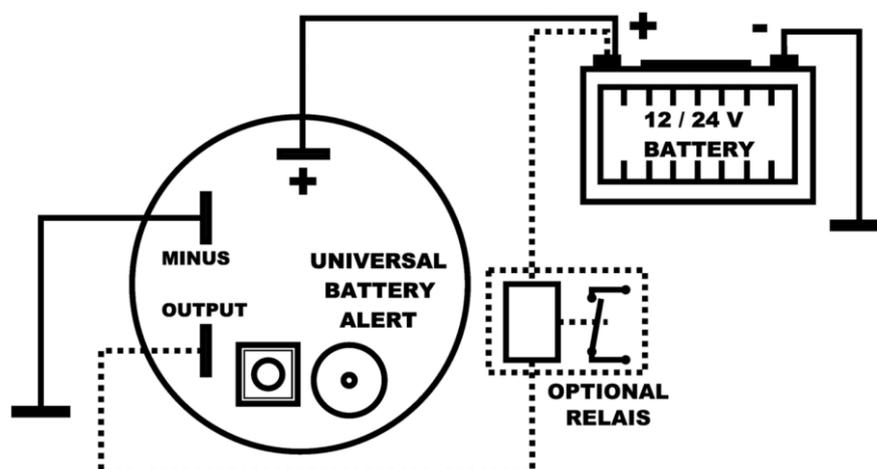
Programming:

It takes three simple steps to program the BA:
1. Choose the values to be programmed.
2. Program the chosen values.
3. Check the programming by listening to the verification sounds.

1. After the program/reset button is pressed for at least two seconds a beep will sound. If the button is released Program A can be configured. If you keep on pressing the button another two beeps will sound after one second. One second after that three beeps will sound and another second later four beeps will sound. If you keep on pressing after that, the programming cycle will start again from the beginning and one beep will sound.

2. At the moment the button is released, the program that just sounded can be configured. (For example, after three beeps sounded the user released the button, Program C can be configured.) It can be configured by pressing the button momentarily so many times until the chosen configuration is reached. If however the button is not activated within four seconds the the BA will continue with step three.

3. Four seconds after the program is configured the BA will give feedback by beeps to confirm the programming. This is done the same way as when the BA is connected for the first time.

Example:

The user would like to set 14.2V as reset value. First the user should keep the button pressed until he hears three beeps short after each other. Then he releases the button. Following that he has to press the button momentarily four times, because 14.2V is the fourth option in table C. (see configuration table). Four seconds after to have done so the BA will let you hear all programmed values. If the user wants to change the values, the programming has to be started from the beginning.

Configuration table:

	A			B			C			D	
	Program type			Under voltage value			Reset values			Alarm Output	
Nr.	Description		Nr.	Voltage		Nr.	Voltage		Nr.	Description	
1	Disabled vehicle		1	9,5V		1	13V		*1	On/Off – 5 min	
*2	Disabled vehicle (+)		2	10V		2	13,5V		2	On/Off – 1 Hr	
3	Under voltage alarm		3	10,5V		*3	13,8V		3	On/Off	
			4	10,7V		4	14,2V				
			*5	11V		5	14,4V				
			6	11,5V							
			7	12V							

Values only for under voltage alarm (spanning B, C, D)

The values with an * are default configurations.

Program action:

Program A.1 Mobility scooter

- If the mobility scooter is not used, not connected to a charger and the battery less than 80% of the total capacity then an alarm (Alarm #1) will sound after 15 hours. This will remind the user to charge his vehicle.
- The alarm will stop and the timer will be reset if:
    • The mobility scooter is driven.
    • The battery of the mobility scooter is charged.
    • The program/reset button is pressed.

Program A.2 Mobility scooter with low voltage alarm

This program works in the same way as the program above (A.1 mobility scooter) but has an extra feature, an under voltage alarm.
- If the battery voltage drops below 10,8V the under voltage alarm (Alarm #2) will be activated
- The alarm is reset if:
    • The battery of the mobility scooter is charged.
    • The program/reset button is pressed shortly.

Program A.3 Under voltage alarm

- As soon as the battery voltage drops below the threshold, configured at "Program B: under voltage value", the alarm (Alarm #3) will be activated.
- The alarm will be reset if:
    • The battery voltage rises above the threshold, configured at "Program C: Reset values".
    • The program/reset button is pressed shortly.

The alarm output of the BA makes it possible to connect a generator or battery charger. It will be activated when the voltage drops below the under voltage threshold and be deactivated as soon as the battery is charged. Only if Program D option 3 is chosen, the alarm output will work in opposite. See Alarm #3 for further explanation.

Operation alarms:

Alarm #1 Mobility scooter
Buzzer: The buzzer keeps on beeping (one second on, one second off, etc.) until the alarm is reset.
Output: The output alarm will be activated until the alarm is reset.

Alarm #2 Mobility scooter with under voltage alarm
Buzzer: The buzzer beeps ten times (one second on, one second off, etc.) and then keeps quiet for 40 seconds. Hereafter this is repeated. The buzzer will be silenced directly if the alarm is reset.
Output: The output alarm will be activated until the alarm is reset.

Alarm #3 Under voltage alarm

Buzzer: The buzzer beeps during one 1 minute (one second on, one second off, etc.) and will be quiet after that.

Output: When the alarm is activated, the output is also activated. The alarm output is switched off as soon as the alarm is reset by pressing the program/reset button. If the alarm is reset because the battery voltage rises above the reset threshold (Program C: Reset values) then the alarm output will be deactivated after the configured time (Program D: Alarm output).

If program D option 3 (On/Off) is chosen and the battery voltage is at least one minute below the fixed value of 12.8V, the output will be deactivated. As soon as the battery voltage rises above the configured reset voltage (C) for at least five seconds, the output will be re-activated. With this program the BA can be used as controller for a large relay, which, for example, is used as a battery separator.

Side view:
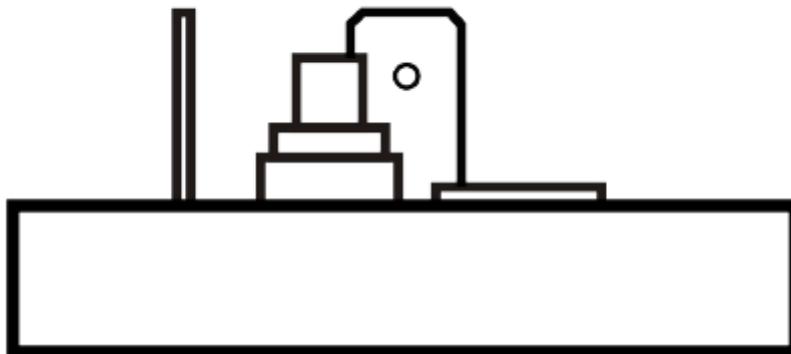
Technical specifications:

Power supply:	Autodetect 12V/24V
Used current:	
Inactive alarm:	0,6mA
Active alarm (buzzer on):	20mA
Alarm Output:	1mA
Maximum control current:	1A (continu)
Maximum cable length:	80cm
Minimal cable diameter:	1,5mm^2
Weight:	28 gr
Dimensions:	(D) 45mm, (H) 20mm