



## Automatic battery chargers

# Automatic battery chargers for lead-acid batteries

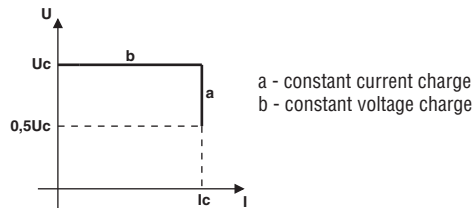
## Switching battery chargers



BCF..



Order code	Rated output current	Rated output voltage DC	Qty per pkg	Wt
	[A]	[V]	n°	[kg]
1 charging level.				
<b>BCF 0250 12</b>	2.5	12	1	0.270
<b>BCF 0450 12</b>	4.5		1	0.270
<b>BCF 0125 24</b>	1.25	24	1	0.270
<b>BCF 0250 24</b>	2.5		1	0.270



### General characteristics

#### Protections:

- Mains input fuse
- Electronic lock in case of short circuit on battery terminals, battery polarity inversion, low voltage across battery poles (<0.5 U<sub>e</sub>) and disconnected battery
- Relay alarm output.

#### LED indications:

- Correct output voltage
- Battery polarity inverted.

### Operational characteristics

- Auxiliary supply voltage: 100...240VAC (±10%) 50/60Hz (±5%)
- Charging cycle: in accordance with DIN 41773 standards
- Current limitation
- Degree of protection: IP20
- Fixed clamping screw terminal block with captive screws.

Type	Maximum power consumption		Mains fuse
	consumption [VA]	dissipation [W]	[A]
BCF 0250 12	96	40	2
BCF 0450 12	181	76	2
BCF 0125 24	96	39	2
BCF 0250 24	181	72	2

### Alarms

	GREEN LED	RED LED	RELAY
Correct output voltage	ON	OFF	ON
Polarity inverted	ON	ON	ON
Short circuit	OFF	OFF	OFF

### Alarms output circuit

- Type of output:
  - 3A 250VAC relay (AC1).

### Reference standards

Compliant with standards: IEC/EN 60950-1.

## Linear battery chargers



31 BCE 0312  
31 BCE 2V524

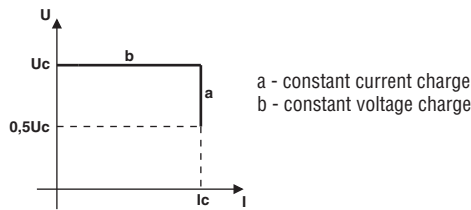


31 BCE 0612  
31 BCE 0524



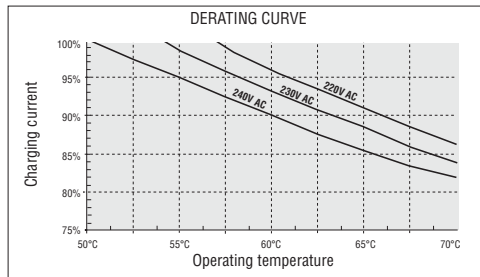
31 BCE 1212  
31 BCE 1024

Order code	Rated output current	Rated output voltage DC	Qty per pkg	Wt
	[A]	[V]	n°	[kg]
1 charging level.				
31 BCE 0312	3	12	1	1.900
31 BCE 0612	6		1	4.750
31 BCE 1212	12		1	8.600
31 BCE 2V524	2.5	24	1	1.900
31 BCE 0524	5		1	4.925
31 BCE 1024	10		1	9.550

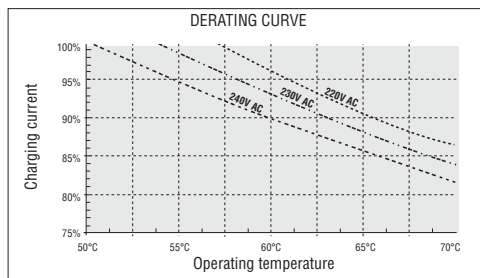


### DERATING CURVES

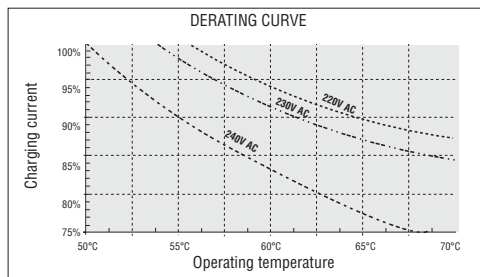
BCE 2V5 - BCE 03



BCE 05 - BCE 06



BCE 10 - BCE 12



### General characteristics

#### Protections:

- Mains input fuse (except for BCE 2V5 and BCE 03)
- Battery output fuse
- Electronic lock in case of short circuit on battery terminals, battery polarity inversion, low voltage across battery poles (<0.5 Ue) and disconnected battery
- Alarm output:
  - Negative static, NPN transistor for BCE 2V5 and BCE 03
  - Relay for BCE 05, BCE 06, BCE 10 and BCE 12.

#### Indications:

- Power on
- Charge ( $I > 0.2 I_c$ )
- Alarm for protection tripping.

### Operational characteristics

- Auxiliary supply voltage: 220-240VAC  $\pm 10\%$ , 50/60Hz  $\pm 5\%$
- Charging current: 30-100%  $I_e$  adjustable
- Charging cycle: in accordance with DIN 41773 standards
- Current limitation
- Degree of protection: IP00
- Clamping screw terminal block with captive screws:
  - Removable for BCE 03 and BCE 2V5
  - Fixed for BCE 05, BCE 06, BCE 10 and BCE 12.

Type	Maximum power consumption	dissipation	Mains fuse	Output fuse
	[VA]	[W]	[A]	[A]
BCE 0312	117	24	—	6.3
BCE 0612	222	46	4	12.5
BCE 1212	400	73	6.3	25
BCE 2V524	166	26	—	6.3
BCE 0524	317	40	4	12.5
BCE 1024	610	66	6.3	25

### Alarms

#### BCE 2V524 - BCE 0312

These types have a static alarm output for the control of a relay or indicator, maximum 300mA duty.

If it is connected to a relay, this must be normally energised in absence of alarm. In alarm conditions with ALARM LED switched on, or in absence of supply, the relay de-energises.

#### BCE 0524 - BCE 0612 - BCE 1024 - BCE 1212

These types have a normally energised relay alarm output.

In alarm conditions with ALARM LED switched on, or in absence of supply, the relay de-energises.

Possible causes of alarm include:

- Low battery voltage
- Battery fuse blown
- Battery not connected
- Battery polarity inverted.

### Alarm output circuit

#### BCE 2V524 - BCE 0312

- Type of output:

- Negative static; NPN transistor
- Maximum voltage applicable to load: +V battery terminal
- Maximum output current: 300mA
- Maximum overload current for 1 second: 2A
- Dynamic over-voltage protection with inductive load.

#### BCE 0524 - BCE 0612 - BCE 1024 - BCE 1212

- Type of output

- Relay: 1 changeover contact
- Rated voltage: 250VAC
- Maximum admissible voltage: 440VAC
- Rated capacity in AC1 duty: 5A 250VAC lth
- Rated capacity in DC13 or DC14 duty: 5A 30VDC
- Electrical life:  $>10^6$  cycles
- Mechanical life:  $>30 \times 10^6$  cycles.

ⓘ The output is not overload or short-circuit protected. It is however capable of switching on a 3W filament bulb.

### Certifications and compliance

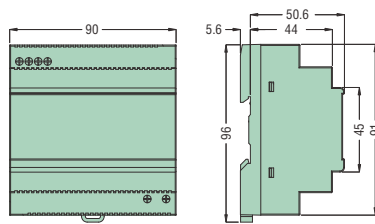
Certifications obtained: GOST.

Compliant with standards: IEC/EN 60335-2-29.

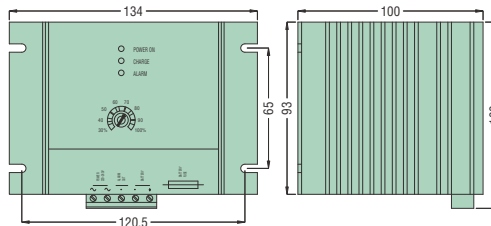
# Automatic battery chargers for lead-acid batteries

## Dimensions [mm]

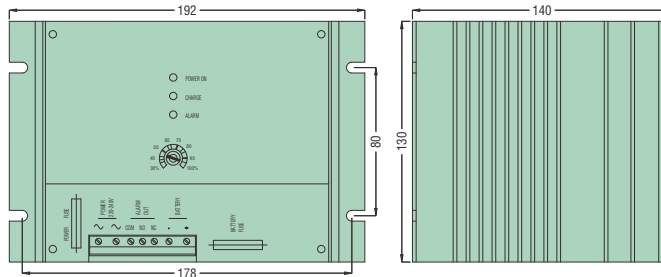
BCF...



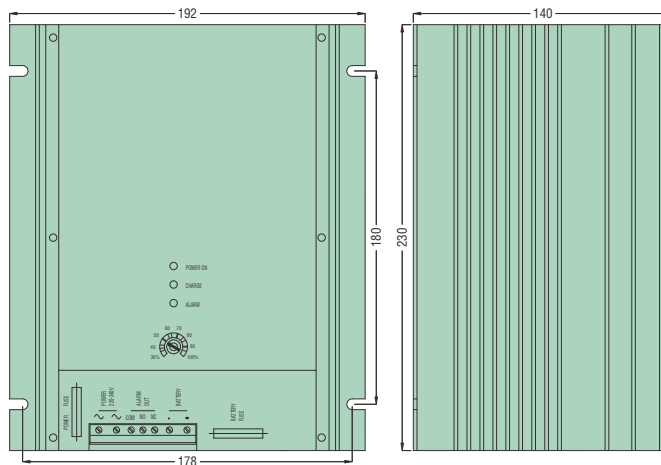
BCE 0312 - BCE 2V524



BCE 0612 - BCE 0524

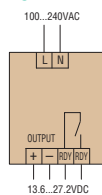


BCE 1212 - BCE 1024

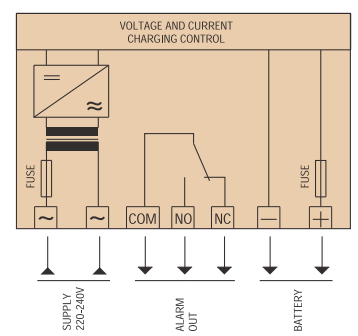
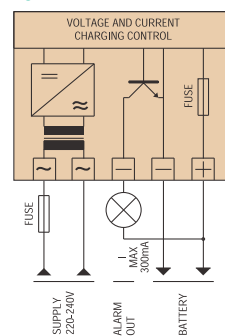


## Wiring diagrams

BCF...

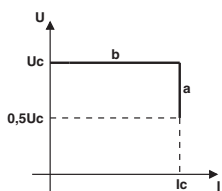


BCE...



# Automatic battery chargers for lead-acid batteries

## Technical characteristics

TYPE	BCF...	BCE...
Description	Single phase automatic battery charger 1 charging level for lead-acid batteries	
Supply voltage	100...240VAC ±10% 50/60Hz	220...240VAC ±10% 50/60Hz
Rated output voltage (Ue)	12-24VDC	
Rated charging current (Ie)	2.5-4.5A (12VDC) 1.25-2.5A (24VDC)	3-6-12A (12VDC) 2.5-5-10A (24VDC)
CHARGING CYCLE		
Reference standards	DIN 41773	
Diagram	 <p>a - constant current charge b - constant voltage charge</p>	
End charge voltage (Uc)	12V battery: 13.8VDC (2.3V/cell) 24V battery: 27.6VDC (2.3V/cell)	
Charge current (Ic)	Fixed	Adjustable 30% to 100% Ie (using potentiometer)
Current limit	Yes	
PROTECTIONS		
	<ul style="list-style-type: none"> <li>- Mains supply fuse</li> <li>- Charging inhibition due to: <ul style="list-style-type: none"> <li>• short circuit at battery terminals</li> <li>• battery polarity inverted</li> <li>• low voltage at battery poles (&lt;0.5 Ue)</li> <li>• disconnected battery</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Mains supply fuse (5, 6, 10, 12A types only)</li> <li>- Battery output fuse</li> <li>- Charging inhibition due to: <ul style="list-style-type: none"> <li>• short circuit at battery terminals</li> <li>• battery polarity inverted</li> <li>• low voltage at battery poles (&lt;0.5 Ue)</li> <li>• disconnected battery</li> </ul> </li> </ul>
ALARM OUTPUT CIRCUIT		
	1 output relay 3A 250VAC (AC1)	Static output (NPN transistor) ❶; relay with 1 c/o contact, 5A 250VAC ❷
AMBIENT CONDITIONS		
Operating temperature	-25...+51°C	-10...+50°C
Storage temperature	-25...+85°C	-30...+80°C
HOUSING		
Version	Modular	Open frame
Degree of protection	IP20	IP00
Cooling	Natural	
Connections	Fixed terminals	Removable/plug-in terminals❶ Fixed terminals❷

❶ For 2.5A and 3A types only.

❷ For 5, 6, 10 and 12A types only.



Changeover switch disconnectors



Motorised switch disconnectors



Changeover contactors



Automatic transfer switch controllers

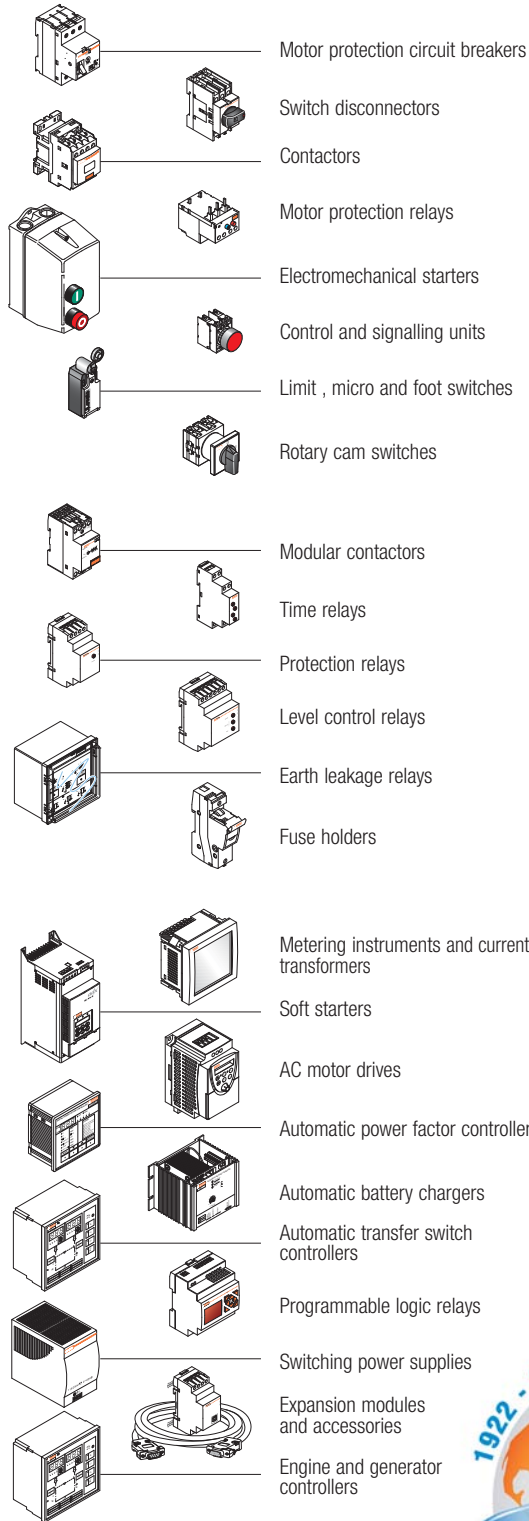


Engine and generator controllers

## Planet Switch

## Planet Din

## Planet Logic



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