

BAC SERIES

Battery Charger

- Lightweight – only 10 kg / 22 lbs
- Instrument max power – up to 2,7 kW
- Voltage range up to 300 V DC
- Current range up to 50 A DC
- Measurement resolution – current 0,1 A, voltage 0,1 V
- Two charging modes available:
IU - constant current + constant voltage,
UU - constant voltage + constant voltage,
with current limit
- Adjustable alarm and shutdown parameters for preventing excessive charge



Powerful and Portable Battery Charger Description

Following a power outage, various power engineering objects such as power plants should be kept operating on batteries. It is necessary batteries to be charged in order to compensate its energy loss and keep their voltage within the predefined limits. BAC series devices are a portable battery charger used for charging Lead-Acid, Ni-Cd and Li-ion batteries. BAC series devices are intended to support the main charger in order to charge battery much faster or to quickly recharge a battery following a discharge test. Using two charging modes it provides the possibility of maintaining and recharging the batteries either with a constant current or a constant voltage.

BAC Series contains two models, depending of maximum charging current by different voltage levels:

- **BAC25A model** can generate currents up to 25 A, with a maximum output voltage of 300 V (the maximal current is 10 A at 300V)
- **BAC50L model** can generate currents up to 50 A (for voltages up to 50 V), with a maximum output voltage of 60 V (the maximal current is 30 A at 60 V)

In addition, BAC Series devices are equipped with thermal, overcurrent, and over-voltage or under voltage protection.

Provided display enables users to read all relevant information during a charging process and to adjust the charging current, charging time, etc.

Mains Voltage (V AC)	Voltage (V DC)	Maximum Current (A DC)		Boost voltage (V DC)		Float voltage (V DC)	
		BAC25A	BAC50L	Lead-Acid	Ni-Cd	Lead-Acid	Ni-Cd
230/115	1,2	-	50	-	1,5	-	1,4
	2	-	50	2,45	-	2,25	-
	6	-	50	7	7,5	6,75	7
	12	25	50	14	15	13	14
	24	25	50	29	30	27	28
	48	25	30 (230V) 20 (115V)	57	60	54	56
	60	25	-	72	75	68	70
	110/120	20 (230 V) 10 (115 V)	-	133/145	140/150	125/135	130/140
	220/240	10 (230 V) 5 (115 V)	-	263/290	275/300	148/270	250/280

Table 1. Maximum Charging Currents for charging Lead-Acid and Ni-CD batteries

Mains Voltage (V AC)	Voltage (V DC)	Maximum Current (A DC)		Boost voltage (V DC)	Float voltage (V DC)
		BAC25A	BAC50L		
230/115	3,6	-	50	4,2	4
	7,2	-	50	8,4	8
	14,4	25	50	16,8	16
	25,2	25	50	29,4	28
	39,6	25	50 (230V) 25 (115V)	46,2	44
	50,4	25	30 (230V) 20 (115V)	58,8	56

Table 2. Maximum Charging Currents for charging Li-ion batteries

Benefits and Features

1. **Display** - Values of output voltage, current and other working status information are displayed on the LCD screen.
2. **Keyboard** - used for controlling and operating the instrument.
3. Status indicating **LED diodes**
4. **PT100 probe connector** for ambient temperature measurement.
5. **USB PC Interface.**
6. **Overvoltage alarm terminal** - used for triggering external alarm.
7. **Undervoltage alarm terminal** - used for triggering external alarm.
8. **Current and voltage sense terminals** - connecting the current and voltage sense cables.



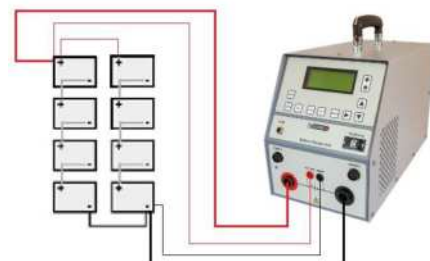
Application example

Typical application is charging batteries that serve as a backup power supply in:

- Power plants
- Generator excitation systems
- Substations
- Protection and control systems
- UPS battery strings

The BAC series devices is connected to a test battery using the current cables. The voltage sense cables may be used optionally. Next step is to set the current and the voltage alarm levels. After starting the charging process BAC series devices keeps the current or voltage level constant depending on the selected charging mode. When applying the IU charging mode, the battery is charged with a constant current. The voltage increases to a level close to the final voltage (boost voltage), the device switches to a constant voltage (float voltage) mode and the current begins to decrease. Cut off occurs when a predetermined minimum current value, which indicates a full charge, has been reached. When opting for the UU charging mode the battery will be charged under a constant voltage. If the battery current becomes larger than the defined

current limit, the charger will switch into a constant current mode and continue charging with constant current that is equal to specified current limit.



Otherwise, the charger keeps charging under the selected constant voltage, the current will decrease over time until it reaches a predetermined minimum value. At this point of time the charger will switch to a float charge stage and decrease to a selected float voltage

BAC Series - models

BAC25A



- Applicable to 10 – 300 V DC battery voltages
- Weight – 10 kg (22 lbs)
- Instrument max power – up to 2,7 kW
- Current range – up to 25 A

BAC50L



- Applicable to 1 V – 60 V DC battery voltages
- Weight – 10 kg (22 lbs)
- Instrument max power – up to 2,5 kW
- Current range – up to 50 A

Technical Data

Mains Power Supply

- Connection according to IEC/EN60320-1; C320
- Voltage 90 V – 264 V AC, 50 / 60 Hz, single-phase
- Power consumption: up to 3 300 VA

Output data

- Max. Output current: 25 A DC (BAC25A)
50 A DC (BAC50L)
- Voltage: 10-300 V DC (BAC25A)
1-60 V DC (BAC50L)
- Typical voltage accuracy:
 $\pm (0,25 \% \text{ rdg} + 0,25 \% \text{ FS})$

Environment conditions

- Temperature -10 °C to +45 °C / 14 °F to +113 °F
- Maximum relative humidity 95 % for temperatures up to 31 °C, decreasing linearly to 40 % relative humidity at 45 °C
- Pollution degree 2

Electromagnetic Compatibility (EMC)

- Directive 2014/30/EU (CE conform)
Applicable standard : EN 61326-1

Dimensions and Weight

- Dimensions:
(D x W x H) without handle:
407 mm x 198 mm x 275 mm
16 in x 7.8 in x 10.8 in
- Weight:
10 kg / 22 lbs.

Warranty

- Three years

Safety Standards

- Safety
 - Low Voltage Directive:
Directive 2014/35/EU (CE conform)
Applicable standards, for a class I instrument, pollution degree 2, Installation category II: IEC EN 61010-1
- CAN/CSA-C22.2 No. 61010-1

All specifications herein are valid at ambient temperature of + 25 °C/77° F and recommended accessories. Specifications are subject to change without notice.



Voltage sense cables

Current cables

Transport case

Order Info

Instrument	Article No
Battery charger BAC25A	BAC25A-NN-01
Battery charger BAC50L	BAC50L-NN-01

Included Accessories	Article No
Mains power cable	MPCxxA-xx-00
Transport case	HARD-CASE-ME
Ground (PE) cable	CABLE-GND-00

Recommended	Article No
Current cables 2 x 3 m 6 mm ² (9.8 ft., 9 AWG) with alligator clamps (A2) isolated (<i>for BAC25A</i>)	C2-03-06BMA2
Current cables 2 x 3 m 10 mm ² (9.8 ft., 8 AWG) with alligator clamps (A3) isolated (<i>for BAC50L</i>)	C2-03-10BMA3

Optional	Article No
Current cables 2 x 5 m 6 mm ² (16.4 ft., 9 AWG) with alligator clamps (A2) isolated (<i>for BAC25A</i>)	C2-05-06BMA2
Current cables 2 x 10 m 6 mm ² (32.8 ft., 9 AWG) with alligator clamps (A2) isolated (<i>for BAC25A</i>)	C2-10-06BMA2
Current cables 2 x 15 m 6 mm ² (49.2 ft., 9 AWG) with alligator clamps (A2) isolated (<i>for BAC25A</i>)	C2-15-06BMA2
Current cables 2 x 20 m 6 mm ² (65.6 ft., 9 AWG) with alligator clamps (A2) isolated (<i>for BAC25A</i>)	C2-20-06BMA2
Current cables 2 x 5 m 10 mm ² (16.4 ft., 8 AWG) with alligator clamps (A3) isolated (<i>for BAC50L</i>)	C2-05-10BMA3
Current cables 2 x 10 m 10 mm ² (32.8 ft., 8 AWG) with alligator clamps (A3) isolated (<i>for BAC50L</i>)	C2-10-10BMA3
Current cables 2 x 15 m 10 mm ² (49.2 ft., 8 AWG) with alligator clamps (A3) isolated (<i>for BAC50L</i>)	C2-15-10BMA3
Current cables 2 x 20 m 10 mm ² (65.6 ft., 8 AWG) with alligator clamps (A3) isolated (<i>for BAC50L</i>)	C2-20-10BMA3

Sense cables 2 x 3 m 1,5 mm ² (9.8 ft., 13 AWG) with banana plugs + dolphin clip	S2-03-15BPDC
Sense cables 2 x 5 m 1,5 mm ² (16.4 ft., 13 AWG) with banana plugs + dolphin clip	S2-05-15BPDC
Sense cables 2 x 10 m 1,5 mm ² (32.8 ft., 13 AWG) with banana plugs + dolphin clip	S2-10-15BPDC
Sense cables 2 x 15 m 1,5 mm ² (49.2 ft., 13 AWG) with banana plugs + dolphin clip	S2-15-15BPDC
Sense cables 2 x 20 m 1,5 mm ² (65.6 ft., 13 AWG) with banana plugs + dolphin clip	S2-20-15BPDC
Cable for external alarm 2 x 5 m (16.4 ft.)	CA-EXABAC-05
Extension cable for external alarm 2 x 5 m (16.4 ft.,)	E1-EXABAC-05
PT100 temperature indicator	TI-000-PT100
Device bag	DEVIC-BAG-00
Cable bag	CABLE-BAG-00