



12V - 6A / 24V - 5A

ABC Series - Smart Battery Charger

ABC120M1224 - Smart battery charger and tester for Lead Acid, NiMH, NiCd, and Li-Ion batteries. Very flexible and suited to the most demanding applications.

Dual use: Power supply and/or Battery charger, all in one box.

Fully resonant configuration for the highest efficiency.

- Selectable Output Voltage, 12 Vdc or 24 Vdc
- Wide input voltage range AC and DC
- Adjustable maximum battery charging current
- Universal charging output, selectable battery types
- External digital sensor for Temperature compensation
- Extensive BATTSAFE battery management firmware
- Full set of protection and monitoring functions
- Local monitoring and diagnostics on LEDs
- Remote alarm via voltage-free relay contact

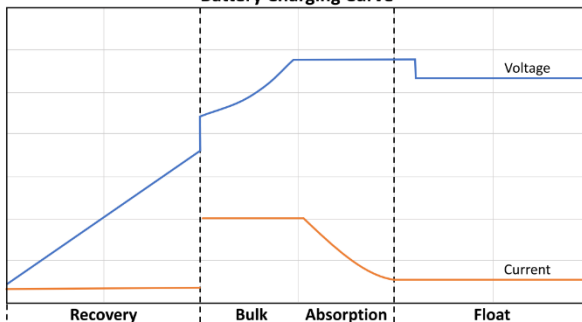
Norms and certifications

Compliance	Electrical safety	EN IEC 62368-1, UL1236, DIN41773
	EMC	Emission: IEC 61000-6-3 Immunity: IEC 61000-6-2.
Declaration of Conformity	CE, UKCA	

Battery Management

Charging Curve	3 stages (IUoU) + Recovery							
Rated Voltage	12 Vdc				24 Vdc			
Charge Current setting min/max	0.6 A / 6.0 A				0.5 A / 5.0 A			
Battery Type, selectable by dipswitch	Lead Acid		Other		Lead Acid		Other	
	AGM	GEL	Li-Io, Li-PoFe	NiCd/Ni-MH	AGM	GEL	Li-Io, Li-PoFe	NiCd/Ni-MH
Boost Voltage	14.4V		14.6V	13.1V	28.8V		29.2V	26.1V
Float Voltage	13.6V	13.8V	13.8V	12.8V	27.2V	27.6V	27.6V	25.6V
	2-10V				2-20V			
Recovery Charge	2-10V				2-20V			
Voltage max	14.75 Vdc				29.50 Vdc			
Time Boost-Bulk Charge (Typ. IN)	min 5 s, max 15 h							
Fast charge voltage	Enable/Disable by dipswitch							
Power supply mode	Enable/Disable by dipswitch							
Float/Rest	Enable/Disable by dipswitch							
Quiescent current	≤ 5 mA or 0 mA if Vbat < 26.0V							

Battery Charging Curve



Technical Data

Input	
Rated Input Voltage AC	115/230/277 Vac (range 85-305 Vac)
Frequency Range	50/60 Hz (range 47-440 Hz)
Input Current AC (Typ.)	1.9 A (115 Vac), 1.0 A (230 Vac)
Rated Input Voltage DC	110/220 Vdc (range 110-420 Vdc)
Input Current DC (Typ.)	1.3 A (110 Vdc), 0.7 A (220 Vdc)
Inrush Current (Typ. Cold Start)	≤ 16 A @ t ≤ 5ms
Recommended External Fuse/MCB	6 A, curve C

Output	
Output Voltage (U _{out}) in Power supply mode	13 Vdc 26 Vdc
Voltage Range, Automatic Set in Charge mode	12-14.4 Vdc 24-28.8 Vdc
Rated Current (I _a)	6 A 5 A

Outputs for Alarm and Diagnostics Signals	
Dry contact LEDs	Change-over relay contact N. 2, Three-color LEDs, flashing code
Protection - Alarms	Fault LED Battery LED Change-over contact
Reverse Polarity Protection	1 pulse OFF
Disconnected Battery	2 pulses OFF
Wrong Battery Voltage Protection	3 pulses OFF
Cell-In Short Circuit	4 pulses OFF
Low Battery Voltage	6 pulses OFF
Overload or Short Circuit Protection	1 pulse OFF
Thermal Protection	OFF
Device fault	OFF
Over Voltage Protection < 35 Vdc	OFF
Power Supply mode	OFF
Mains disconnection	OFF

Battery Monitoring	
Power Initializing	ON
Battery charged, Float	ON
Charging battery Recovery	ON
Charging battery Bulk	ON
Charging Absorption	ON

Climatic Data	
Operating Ambient Temperature (T _A)	-25 up to +70 °C
Relative Humidity, no condensation @ 25°C	max 95%
Storage Temperature	-40 up to +85 °C
Cooling	Natural Convection

General Data	
Efficiency (Typ.)	>90% >92%
Temperature Auto-Derating Factor	2.5 %/°C, T _A > 50°C
Altitude Derating Factor ¹	0.5°C/100 m, above 2000 m
Insulation Voltage (In/Out)	4 kVac
Insulation Voltage (In/PE)	2 kVac
Insulation Voltage (Out/PE)	500 Vdc
Insulation Resistance (500 V)	> 100 MΩ
Protection Class (EN/IEC 60529)	IP 20
Pollution Degree Environment	2
Protection class (EN/IEC 61140)	I with PE connected
Reliability: MTBF IEC 61709	> 300.000 h

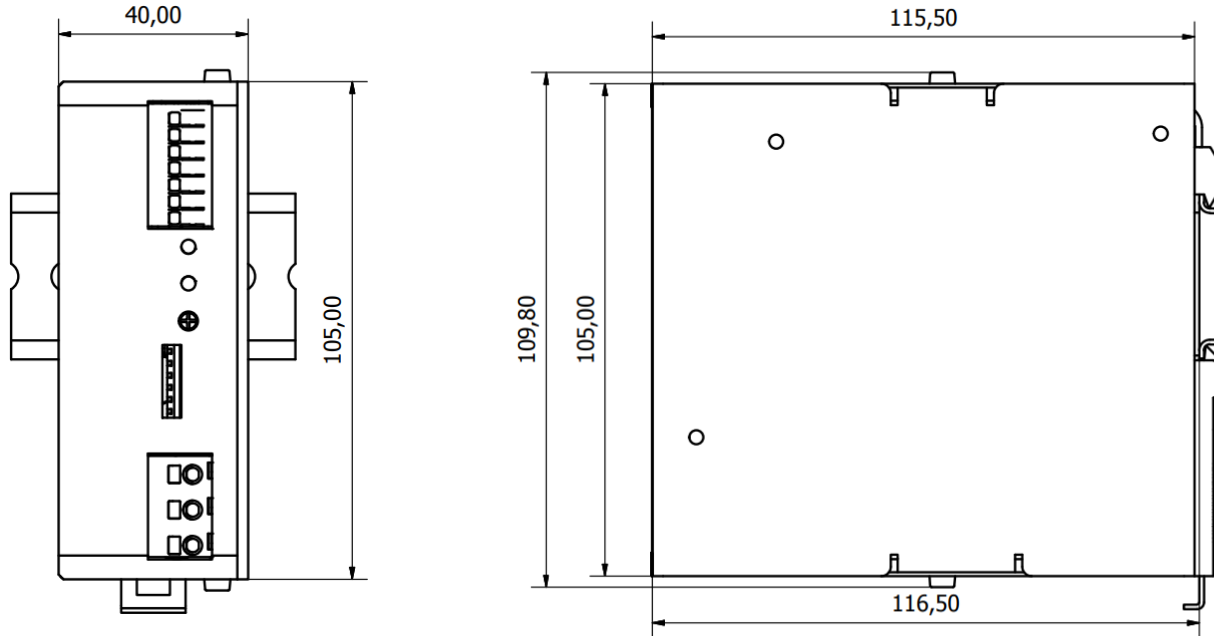
Mechanical Data

Input Terminal Blocks	Push-in type, 2.5 mm ² (10 AWG)
Output Terminal Blocks	Push-in type, 1.5 mm ² (15 AWG)
Signal Terminal Blocks	Push-in type, 1.5 mm ² (15 AWG)
Casing material	Aluminum
Mounting Position	Vertical
Mounting Clearance	10 mm on both sides
Dimensions (W x H x D)	40 x 105 x 116 mm
Weight	0.35 kg

Commercial data

Dimensions and Volume per unit, including packing (W x H x D)	50 x 120 x 130 mm - 0.0008 m ³
Custom Tariff	85072080
Country of origin	Italy
Weight, including packing	0.42 kg

Drawings



Connections

