

SMART BATTERY CHARGER

SMPS-2420

24V 20AMP

600 WATTS

92.5 %

FEATURES

- 100 kHz half-bridge switchmode architecture
- Very high efficiency, up to 92.5%
- Up to 4 stage charging with smart control
- Microprocessor controlled
- Easy to use, DIP switch selections
- Two, three or four stage charging selections
- Battery life extending regenerative charging
- Supports lead-acid, Li-Ion and Ni-Cd batteries
- Analog current measuring output (0-10V)
- Rectifier fail output
- Output short circuit and overload protection
- High temperature protection
- Wide operating temperature range
- Internal automatic fan for cooling
- Low output ripple
- Low line and load regulations
- Wide operating voltage range
- Small dimensions
- Low weight
- Rugged design for industrial environments



DESCRIPTION

SMPS-2420 series are designed in high efficiency, half-bridge 100 kHz switchmode technology. Thanks to their smart charging algorithm, they charge batteries faster than conventional chargers and provide longer battery life.

SMPS-2420 charges both lead-acid, Li-Ion and Nickel-Cadmium batteries. It is specially designed for permanent connection to genset starter batteries and does not require disconnection during cranking.

Chargers have extremely wide operating temperature range without a derating curve. This is achieved with the internal automatic temperature-controlled fan. The fan has a continuously variable speed control circuit running it only when necessary at the required speed. It allows operation in higher temperatures at full load.

The charger measures internally its output current and provides a 0-10V analog output. This signal may directly drive display and measuring units.

The efficiency of the charger exceeds 92%, resulting in lower energy losses and lower long-term operation costs. As an example, compared to a charger of 80% efficiency, with 30% average load and 30 years of operational life, it will consume 6'900 kW-h less electrical energy. This corresponds approximately to 690 USD less energy expenses.



CE EAC RoHS

DESCRIPTION (continued)

The unit has overload, short circuit and high temperature protections. This feature makes the unit deliver only the rated current during short circuit or overload conditions.

In case of excessive temperature, it will protect itself by reducing the current output.

Chargers have open chassis, metal cased design, suitable for bolt and stud mounting in an enclosed panel. The low weight of the unit makes it ideal for use in highly vibrating environments. Small dimensions allow compact panel design.

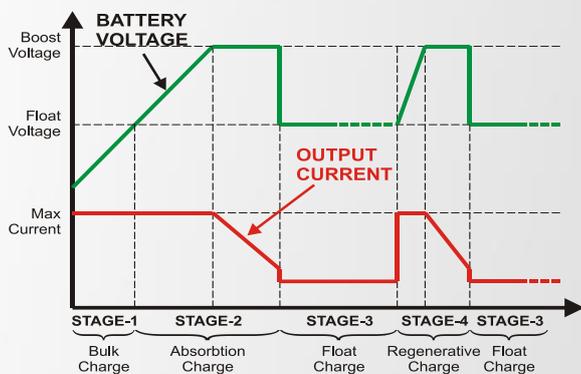
The wide input voltage range allows these chargers to be used in most countries.

The charger OK output is provided as a standard feature. Thanks to this output, a rectifier failure signal is provided to the control module which will give an alarm in case of failure.

SMART CHARGING

The smart charging algorithm uses a 4-stage system allowing better battery charging than traditional 2-stage chargers. A higher charge level is achieved by maintaining the highest possible charging voltage at battery terminals and resuming to the float charge voltage when the battery is fully charged.

The regenerative charging algorithm extends battery life insuring 100% charge with the lowest float voltage.



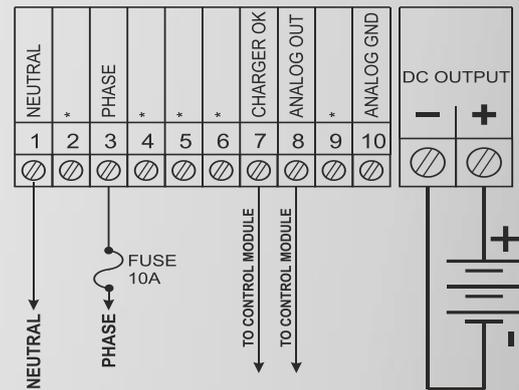
DIP Switch Settings:

S1: activate regenerative charge (5 min every 6 hours)

S2:S3: absorbion charge duration (00: 2 hours, 10:1 hour, 01:30 min, 11:no absorbion)

S4	S5	BATT. TYPE	FLOAT	ABSORPTION
0	0	Li-Ion	26.4	27.4
1	0	Ni-Cd	28.0	29.0
0	1	Ld-Ac	27.6	28.6
1	1	Ld-Ac	27.0	28.0

CONNECTION DIAGRAM



TECHNICAL SPECIFICATIONS

Technology: Switchmode, half-bridge 100 kHz

Output voltage (Vo): see DIP switch settings

Output current (Io): 20 ADC max.(continuous)

Input voltage range: 195-305 VAC

Input current: 6 ARMS max.

Input frequency range: 45-66 Hz

Cooling: with temperature and speed controlled fan

Maximum input power: 800 Watts

Efficiency (@80% output): >%92

Output power: 600 Watts max continuous,

Output noise (ripple): 0.2 Vpp

Load regulation: 0.2 VDC

Line regulation: 0.2 VDC

Charger OK output: >20 VDC

Analog output: 0.5V/A

Overload protection: limits output current to 20A

Short circuit protection: limits output current to 20A

Short circuit duration: unlimited

High temp. protection: limits internal temp. to 85°C

Isolation:

Input-output: 3300 VAC

Input-ground: 1650 VAC

Output-ground: 1650 VAC

Operating temperature range: -30 °C to +70 °C

Storage temp. range: -40 °C to +80 °C

Max relative humidity: 95% (non condensing)

Dimensions: 167x172x80mm (WxHxD)

Weight (approx): 840 grams

Protection degree (EN60529): IP20

Electrical connections:

DC Power outputs: 10 mm2

Other connections:two part connector, 2.5 mm2

EFFICIENCY CHART

