PRELIMINARY

SMPS-2420
BATTERY CHARGER

DESCRIPTION

DATAKOM SMPS-2420 series are fixed output voltage, current limited lead acid and Nickel-Cadmium switchmode battery chargers specially designed for permanent connection to genset starter batteries. They maintain the batteries fully charged, without overcharging or gassing. They may also be used in a wide range of industrial applications where DC power is required.

The chargers are designed in high efficiency, half-bridge 100kHz switchmode technology. Their rugged design allows surviving in harsh electromagnetic environments found in automotive industry.

The output voltage of the charger is adjustable between 21.00 and 28.80V with external 0-10V analog signal. This feature allows application of any desired “V-I-t” charge characteristic via an external control unit. When no signal is applied, the charger provides its float charge voltage of 26.80V. Via logic signals it can be switched to “quick charge” and “boost charge” modes.

The maximum efficiency of the charger exceeds 93%, meaning 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 8’400 kW-h less electrical energy. This corresponds approximately to 840 USD less energy expenses.

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.

Chargers are able to operate in parallel with other battery chargers. Multiple units may be connected in parallel in order to obtain higher current ratings.

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

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

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

The unit is cooled with an internal automatic temperature and speed controlled fan, running only when needed.

FEATURES

- ***100kHz half-bridge switchmode architecture***
- ***Small dimensions***
- ***Low weight***
- ***Constant voltage output***
- ***Current limited***
- ***Rugged design for industrial environments***
- ***Wide operating voltage range***
- ***Analog voltage adjustment input (0-10V)***
- ***Rectifier fail output***
- ***Quick charge input***
- ***Short circuit protection***
- ***Overload protection***
- ***High temperature protection***
- ***Analog output current signal: 0-10VDC***

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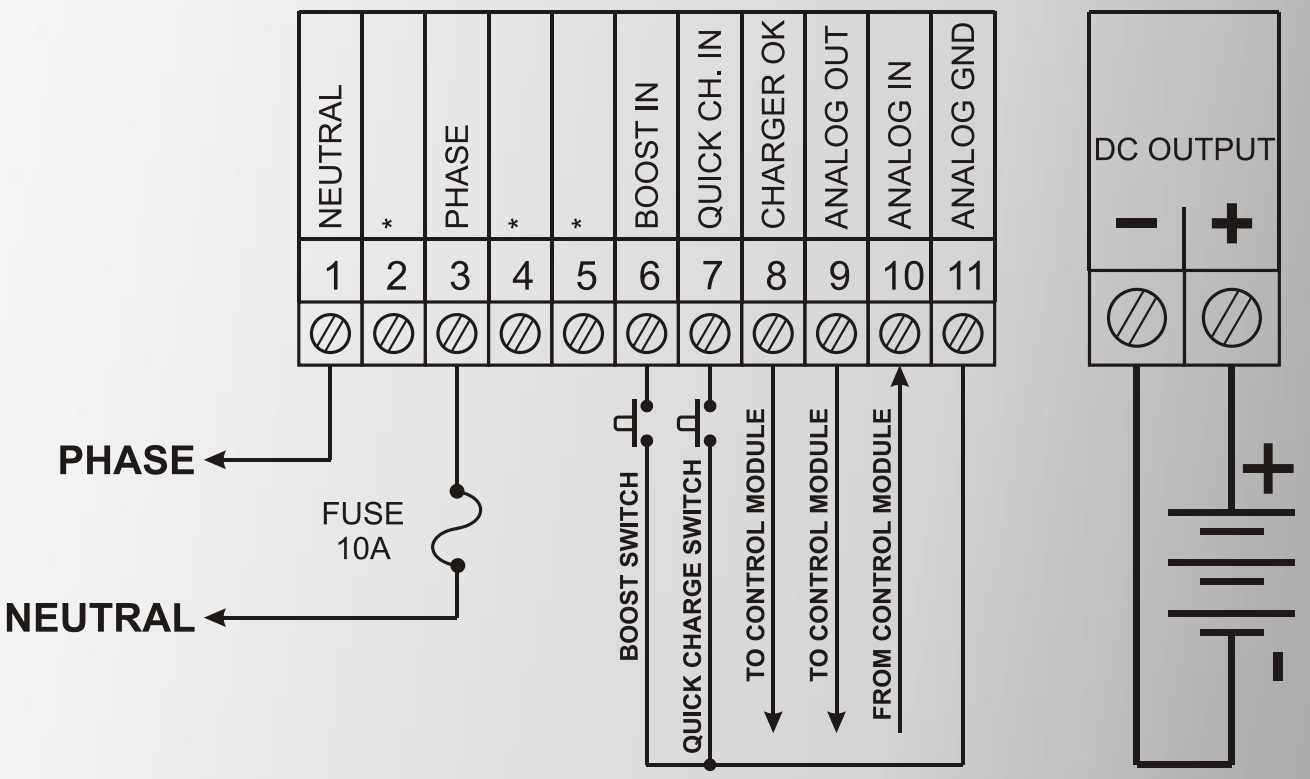
TECHNICAL SPECIFICATIONS

Technology: Switchmode, half-bridge 100KHz
Output voltage: 21.00 - 28.80 VDC adjustable
Output current: 20 ADC max..
Input voltage range: 195-265 VAC
Input current: 6 ARMS max.
Input frequency range: 45-66 Hz
Cooling: with temperature controlled fan
Maximum input power: 630 Watts
Efficiency (@80% output): >%93
Output power: 576 Watts
Output noise (ripple): 0.1 Vpp
Load regulation: 0.2 VDC
Line regulation: 0.2 VDC
Charger OK output: >20 VDC
Boost charge voltage: 28.80 VDC
Quick charge voltage: 28.50 VDC
Float charge voltage: 26.80 VDC
Overload protection: limits output current to 20A
Short circuit protection: limits output current to 20A
Short circuit duration: unlimited
High temperature protection: limits internal temp. to 85°C

Isolation:
Input-output: 3300 VAC
Input-ground: 1650 VAC
Output-ground: 1650 VAC
Operating temperature range: -25 ºC to +70 ºC
Storage temp. range: -40 ºC to +80 ºC
Max relative humidity: %95 (non condensing)
Width: 167mm
Height: 172mm
Depth: 80mm
Weight (approx): 800 grams
Electrical connections:
DC Power outputs: 10 mm2
Other connections:two part connector, 2.5 mm2
Protection degree (EN60529): IP20

CONNECTION DIAGRAM



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