

Technical Datasheet

AKKUTEK 4810



J. Schneider
Elektrotechnik



DC-UPS

0347G03

Short Description

The battery backed up DC power supply in the **AKKUTEK** range uses the standby-parallel principle of operation and, in conjunction with a lead accumulator, ensures that the DC power supply is reliably maintained in the case of a mains power failure.

The power supply has the following features:

- Switched primary, switched power supply with I/V charging characteristic
- Active power factor correction (PFC)
- Microcontroller-based battery management
- Temperature compensation for charging voltage by means of external sensor module (optional module)
- Display and control panel for switch cupboard door installation or surface mounting (option)

1 Norms and Regulations

Safety of power transformers, power supply units and similar Particular requirements for transformers for switch mode power supplies	EN61558 2-17 (VDE 0570 2-17)
Optocouplers for protective separation against electric shock, requirements - tests	VDE 0884
EMC	EN55011../..1998../..Class A Group 1 EN 61000-3-2 and EN61000-3-3 / Class A EN50082-2/03.95
This power supply is only accredited for industrial class A!	
Environmental testing	EN 60068-2-6
Overall unit	EN 50178

Document

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Reg.-Nr. 2750

2 Technical Data

Nominal input voltage	230 V AC -15% +10%
Nominal frequency	47 – 63, Hz
System voltage	48V DC
Output voltage	
(depends on the state of charge of the battery)	
Voltage range	
- with temperature tracking	39.6...52.8V DC
- without temperature tracking	39.6.. 57.2V DC
Nominal output current	10 A DC
	Current limitation at 1,05 - 1,1 x I Nom
Protective system	IP 20
Safe separation (safe separation between input and output)	According to EN61558-2-17 (VDE 0570 2-17)
Operational temperature	0 - 40 °C optimum storage temperature for battery 25°C. Charge batteries each 6 months during storage.
Short circuit protection	electronic, short-circuit proof output
Battery	External
Battery type	Pb-Akku, maintenance-free Pb- Akku maintenance-free (optionally with changed characteristics)
Battery fuse	External
Back-up time	Depending on battery and load
Charging characteristics	I/U DIN 41773 part 1 Opt. Temperaturnachführung
Final charging voltageLadeschlussspannung	
without temp.- sensor	52,8 V DC ± 0,4%
Charging current at 100% load	
Charging current at 0% load	11 A
LED Display	
'Netzbetrieb' (Mains Operation)	Green LED, LED illuminates on: •Mains operation, i.e. (UE>UEmin and TInt<TIntmax)
\overline{U}	Green LED (Battery voltage within the monitoring window, i.e. 43.2< UBatt < 54V DC)
$\frac{\uparrow}{U}$	Green LED (Battery voltage above the monitoring window, i.e. UBatt =54V DC)
'Fehler' (Fault)	Red LED LED illuminates on: •Battery operation ('Netzbetrieb' (Mains Operation) LED goes out in this case) •UA fault •Battery circuit open or high resistance (test interval 60s) •Battery weak •Battery poles reversed

Signal inputs and outputs	• Battery over temperature (only in conjunction with temperature compensation)
'Netzbetrieb' (Mains Operation) 1)	Floating relay contact, normally open, max. contact load 30V DC/ 0.5A
'Fehler' (Fault) 1)	Floating relay contact, changeover, max. contact load 30V DC/ 0.5A
\overline{U} 1)	Floating relay contact, normally open, max. contact load 30 V DC/ 0.5A
$\frac{\uparrow}{U}$ 1)	Floating relay contact, normally open, max. contact load 30 V DC/ 0.5A
Shut-Down	Shut down of the UPS mode Switched input referenced to earth, switching level: 48V DC (16-80V DC)
'Starkladung' (Boost Charging)	Activation of boost charging (boost charging voltage 57.2V DC) Switched input referenced to earth, switching level: 48V DC (16-80V DC)
Battery management	Battery management with internal Micro controller
Battery circuit monitoring	Monitoring battery circuit/battery fuse each 60sec
Real battery power measurement	Battery endurance testing during mains operation (stress of the battery with simultaneous voltage measurement.
EMC-Regulation	EN 55011/03/91 EN 50082-1/1.92 EN 61000-4-2,3,4,5,6,11 EN 50178 EN 60950
Type of construction	Module
Connection	Spring terminals
dimensions	100,5 x 240,5 x 244 mm (W x H x D)
weight	2,4 kg
2.1 Options	TECControl
2.2 Shutdown Software	
Temperature tracking	Lead batteries have a temperature coefficient of approx. -4mV per °C and cell. The AKKUTEK final charging voltage is selected such that battery charging is provided over a temperature range of 15-40°C. In applications with frequent and large temperature variations, the charging voltage should be appropriately compensated to achieve optimal battery life. Also, particularly in the case of very low ambient temperatures ($T_u < 15^\circ\text{C}$), compensation should be performed to ensure adequate battery charging. By connecting the external temperature sensor module (option) to terminal strip 'IO-1' connection 1 and 2 (note poles!), temperature compensation is automatically activated. For an ambient temperature variation of 0-40°C, the final charging voltage (and thus also the output voltage) varies over a range of 54.6 - 52.4 V DC Battery temperatures above 45°C are indicated by the simultaneous illumination of the 'Fehler' (Fault) and 'Netzbetrieb' (Mains Operation) LEDs