



DC-UPS NBPAP33G1***

1 Short description

The battery backed up DC power supply in the **AKKUTEC** 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
- 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)
- TEC-Bus on RS 232-Interface (optional module)

2 Technical Data

Rated input voltage	400 – 500 V AC
Input voltage range	360V - 550V ↔ 400V-10% - 500V+10%
Input frequency	45 – 65 Hz
Rated input current	2,75 A (400V AC) 2,2 A (500 V AC)
Max. inrush current	65A / 5ms, $i^2t = 14A^2s$
System voltage	24 V DC
Output voltage (depending on state of charge of the battery) Voltage range	
- without temperature sensor	a) 19,8 V DC...26,8 V DC
- with temperature sensor	b) 19,8 V DC ...28,0 V DC
Final charging voltage	
- without temperature sensor	26,8 V DC $\pm 0,4\%$
- with temperature sensor	27,1 V DC $\pm 0,4\%$ (at 25°C)
Charging characteristics	I/U DIN 41773-1
Deep discharge protection and load rejection at	19,8V DC $\pm 0,4\%$
Nominal output current	40A DC
Constant current limitation	1,05...1,1xI _{ANenn}
Battery type	Pb-Akku, wartungsfrei Pb-Akku, wartungsarm
efficiency (U _a =26,8V DC, I _a = Nom and U _e =400V AC)	91,5% (typ.)
max. power loss 'worst-case'	115W
Earth leakage current	<3,5mA
Fusing primary	3 x 4AT (external)
fusing DC- output circuit	40 A slow acting (external)
Fusing battery load circuit	40 A slow acting (external)
Type of connection primary 'mains'	Combicon-screw type terminal 2,5mm ² Fastening torque 0,5-0,6 Nm

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Type of connection secondary 'Ua', 'UBatt'	Screw type terminal 10mm ² Fastening torque 1,2-1,5 Nm
Type of connection interface 'IO-1...IO-3'	Combicon-screw type terminal 1,5mm ² Fastening torque 0,22-0,25 Nm
Type of connection Current-Share-Bus 'CS'	Combicon-screw type terminal 2,5mm ² Fastening torque 0,5-0,6 Nm
Display	
Netzbetrieb operation	LED green illuminates: • Mains operation (UE>UEmin and TInt<TIntmax)
$\overline{U}$	LED green (battery voltage within the monitoring window 21,6< UBatt < 27,9V DC)
$\frac{\uparrow}{U}$	LED green (battery voltage above the monitoring window UBatt =27V DC)
Fehler	LED red LED illuminates at: * Battery operation (during mains operation LED is not illuminated) * Battery circuit interrupted respective high-ohmic (Testintervall 60s) * Battery low * Battery reverse poled * Battery-over-temperature (only in connection with temperature tracking)
Signal in- and outputs	
Mains operation 1)	potentialfree relay-contact, closer, max. contact load 30 V DC/ 0,5A
Fehler 1)	potentialfree relay-contact, changer, max. contact load 30 V DC/ 0,5A
$\overline{U}$ 1)	potentialfree relay-contact, closer, max. contact load 30 V DC/ 0,5A
$\frac{\uparrow}{U}$ 1)	potentialfree relay-contact, closer, max. contact load 30 V DC/ 0,5A
Shut-Down	Shut down of UPS mode Switch input, referring ot earth, switch level: 24V DC (16-80 V DC)
Starkladung (Boost charging)	Activation of boost charging (boost charging voltage 28.6 V DC) Switched input referenced to earth, switching level: 24V DC (16-80V DC)
General	
weight	appr. 3,3 kg
storage	recommended 0...30°C, permissible 0...50°C
Operational temperature	recommended 10...20°C (battery life duration!), permissible 0...40°C
Protective system	IP20
dimensions	290 x 180 x 147 mm (L x W x D) see section 10
fixation	Top hat rail according to DIN EN 50022-35 Alternativ: assembly kit for direct screw fastening on the cabinet installation plate (option)

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3 Norms and regulations

Safety of power transformers, power supply units and similar Particular requirements for transformers for switch mode power supplies	EN 61558 2-17 (VDE 0570 2-17)
Optocouplers for protective separation against electric shock, requirements - tests	VDE 0884
EMC	EN 55011 / 1998 /..Klasse A Group 1 EN 61000-3-2 und EN 61000-3-3 / Klasse A EN 50082-2 / 1995
Total unit	EN 50178 / EN60950 cULus-Listed (UL508 / CSA 22.2), File E237077  Industrial Control Equipment 2VD5