

D-TOP500-IB

*DIN rail mount power supply with integrated battery management,
primary switched, 500 watt*



*ONLINE DC-UPS System
Wide range input 100-240VAC
Active PFC, >0,95
Battery management by microcontroller
Detection of open battery wire, sensor monitoring and battery test permantly
Protection against reverse battery polarization, low discharge protection
overload protection
Redundant operation with active load share possible
Parallel operation to increase output power
UL1950, cUL508
EN60950, EN50178, VDE0160, EN55011-B, EN61000-3-2
EN61000-3-3, EN50082-2
short circuit-/no-load protected
Over voltage protection, over temperature protection
Auxiliary output isolated 12V/100mA to be used for stand-by purpose
Undertemperature and overtemperature alarm
Serial interface (RS232)
Mounting by clip fastening to TS35-rail acc. to EN50022*

Type	Input voltage	Output Voltage adjustable	Output Current	Cat. Nr.
D-TOP500IB-28	100 - 240VAC, 130 - 375 VDC	21,5-30V	20A	101768
D-TOP500IB-54	100 - 240VAC, 130 - 375 VDC	44-58V	9,5A	101758

*Nicht alle Geräte sind Lagertypen. Verfügbarkeit bitte anfragen.
Not all units are off-the-shelf, please ask for delivery times.*

DIN rail mount power supply with battery backup

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Eingang Input

Input Voltage Range	100VAC - 240VAC (Tol. 85 - 265VAC) 47 - 63Hz, 130VDC - 350VDC
Inrush Current	<30A_{pk} - Independent of temperature, active on repetitive inrush
Fuse Input Current	<i>Internal fuse T10A 250V, external fuse is not necessary</i> 230VAC: 2,5A typ. 115VAC: 5A typ.
Hold up time	<i>>20ms independent of input voltage</i>
Over voltage protection	<i>Varistor</i>

Output

<i>Output voltage range</i>	<i>See table</i>
<i>Output voltage control via temperature</i>	<i>Temperature tracking output regulation (NTC type K164, 4,7kΩ)</i>
<i>Output current</i>	<i>see table</i>
<i>Current limitation</i>	<i>Constant output power with constant current limit approx. 1,05 - 1,15 x I_{nominal}</i>
<i>Parallel operation</i>	<i>Several units may be connected in parallel for increased output power by connecting synchronisation and load-share terminals; DC-OK-signal for monitoring functionality of parallel units.</i>
<i>Hot insertion/ removal Load Regulation</i>	<i>Built in insulating diode at output</i> <i>Stat. 10%-90%: 0,1%; dyn. 10%-90%: 1,0%</i>
<i>Recovery Time</i>	<i>1ms</i>
<i>Line Regulation</i>	<i>±10%: 0,1%</i>
<i>Overvoltage protection / output</i>	<i>Redundant control circuit</i>
<i>Ripple & noise (p-p)</i>	<i>< 50 mV_{ss} typ.</i>
<i>Switching spikes</i>	<i>< 150 mV_{ss} typ.</i>

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Products are described by information contained in catalogs and data-sheets. It is not to be considered as assured qualities. Stresses listed under „Maximum Rating“ (one at a time) may be applied to devices without resulting in permanent damage. The operation of the equipment for extended periods may affect device reliability. Limiting value tolerance are subject to usual fluctuation margins.

Signals and Alarm Outputs

<i>Indication</i>	<i>LED at front, independent of parallel operation</i>
<i>DC-OK Output</i>	<i>Opto isolator output, floating. Max. load 5mA / 35Vdc</i>
<i>Shut Down input</i>	<i>Injecting 5-12V (from Auxiliary output) = SD = Main output OFF</i>
<i>Auxiliary Output</i> <i>Uaux</i>	<i>12V/100mA SELV supply, isolated (max.500Vdc) referenced to Vout, referre to application hint below</i>

Environment

<i>Efficiency</i>	<i>Up to 90% depending on output voltage</i>
<i>Cooling</i>	<i>Forced cooling by internal fan. Fan monitoring circuit inhibits unit in case of defect,variable fan speed, depending on load</i>
<i>Ambient temperature operating</i>	<i>-25°C - +60°C (+70°C derate output power by 20%) Over-temperature shut down circuit</i>
<i>Storage Temperature</i>	<i>-40°C - +85°C</i>
<i>Insulation voltage</i>	<i>Input/output 3kV each unit</i>
<i>Safety</i>	<i>UL1950, UL508, EN60950, EN50178, Class I equipment</i>
<i>Protective system</i>	<i>IP20</i>
<i>Connectors input:</i>	<i>Screw typ terminals: 3x 0,5 - 4mm²</i>
<i>Connectors power output</i>	<i>Screw typ terminals: 6x 0,5 - 4mm²</i>
<i>Connectors for signals</i>	<i>2 x pluggable screw typ terminals: each 10 x 0,5 - 2.5mm² (20 terminals total)</i>
Case	<i>Steel housing, clip fastening on TS35 (EN50022)</i>

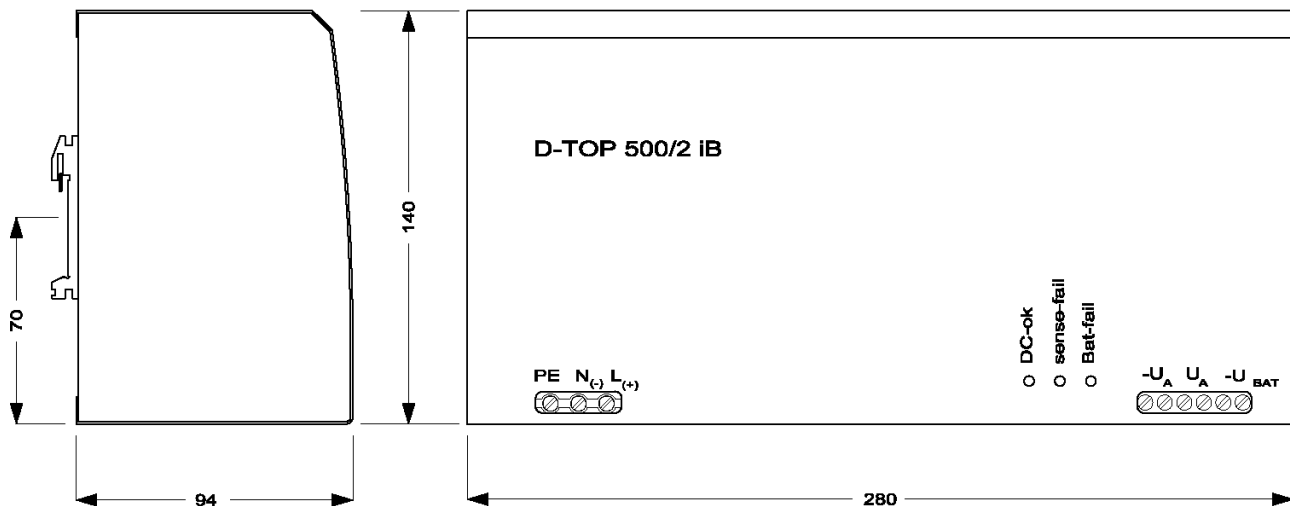
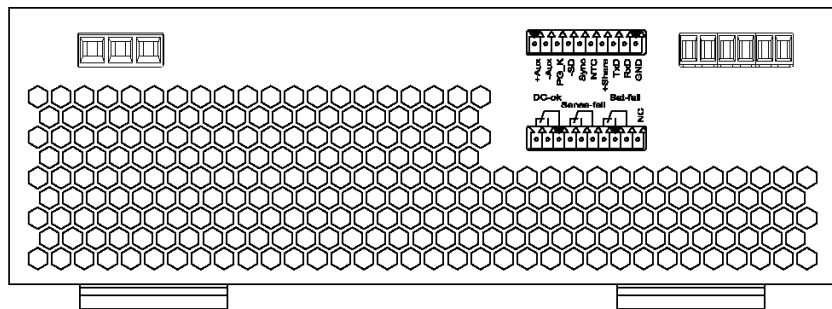
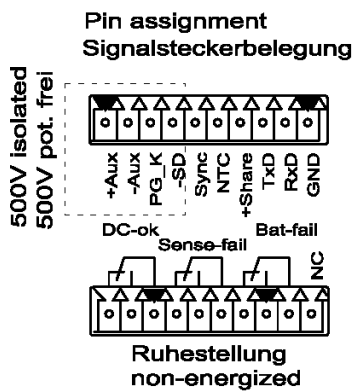
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<i>Dimensions</i>	280 x 140 x 94mm (WxHxD), without mounting bracket
<i>Weight</i>	2,3 kg
<i>RFI emissions</i>	EN55011-B, EN61000-3-2 (current harmonics)
<i>Immunity</i>	EN50082-2
<i>Application hint</i>	

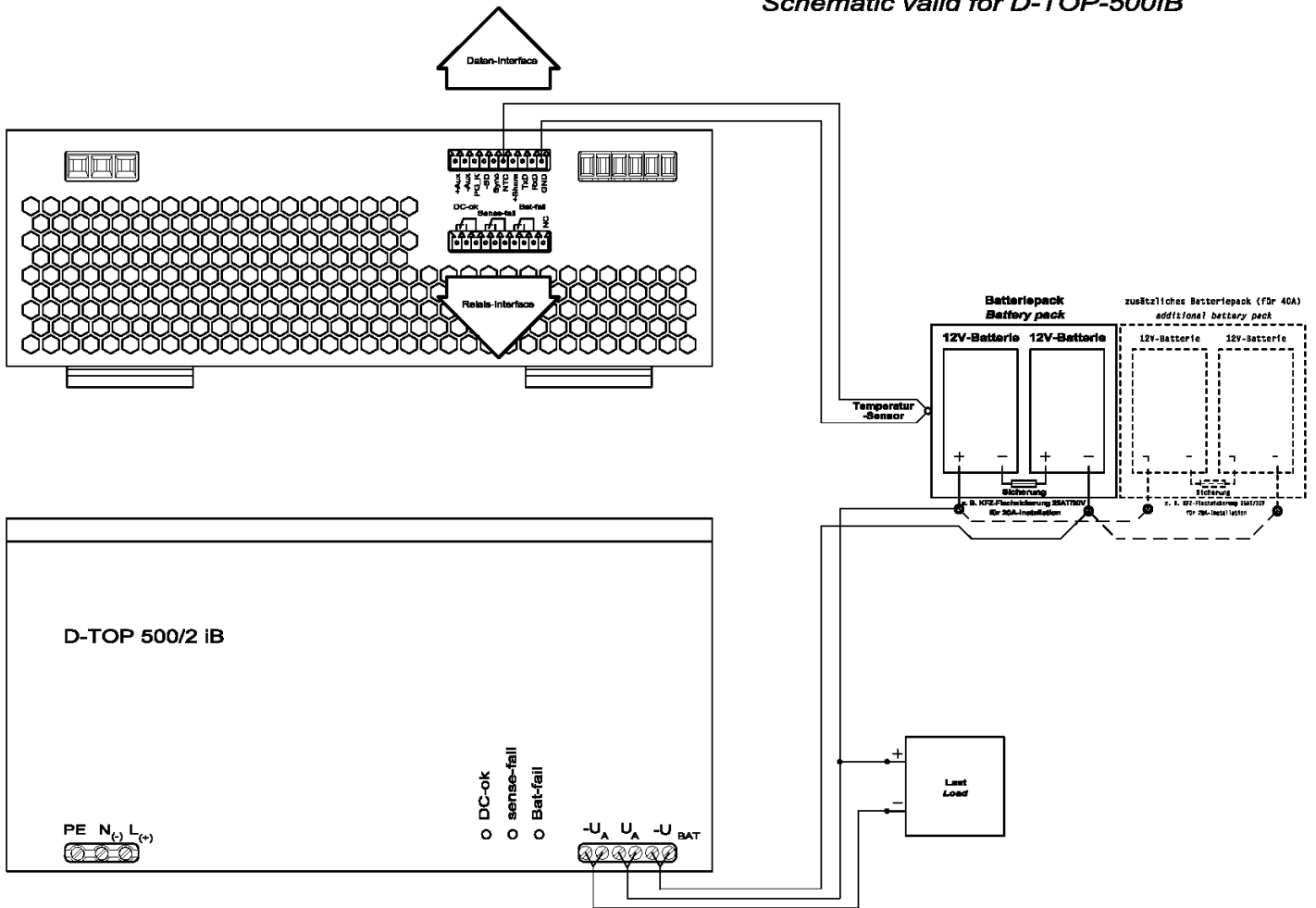
Application Hint

The isolated auxiliary voltage (U_{aux}) can be used to shut down the unit via SHUT-DOWN input. Connect -SD together with -Aux (an internal resistor acts for current limiting). PG-K is an open collector output for DC-OK (active low).



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Anschlußplan für D-TOP-500IB
Schematic valid for D-TOP-500IB

D-TOP DIN rail mount power supply with battery backup
D-TOP500B

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Schnittstellen Format DPM 500/2 – xx – IB / DPM-BAT

RS232 5V invertiert 9600bd	128	64	32	16	8	4	2	1
IDENTIFIKATION I	0	0 (75W)	0	0 (36V)	I (IB)	0	0	0
	0	I (150W)	0	I (12V)	0 (BAT)	F_M	F_SE	F_BT
	I	0 (500W)	I	0 (24V)				
	I	I (1000W)	I	I (48V)				
KONTROL K	DC_ok	Bat_fail	NTC_ok	+/-	Bat_on	NC	NC	NC
SPANNUNG V	Spannungsfenster 0 – 255							
STROM C	0 – 255							
BT_Spg B	0 - 255							
BT_Strom L	0 - 255							

Strom 255 = 510 mA (D-TOP-BAT150-24-6) Spannung 24V 255 = 30V
 255 = 10 A (D-TOP-BAT100-24-4) 0 < 17,5V
 255 = 25,5 A (D-TOP 500 IB 54) 48V 255 = 61,5V
 (D-TOP 500 IB 24) 0 < 36V
 (D-TOP 500 BAT-24-22)

	Gerätetypen	Kommentar
BT_Spg (B)		Batteriespannung während des Batterietestes
BT_Strom (L)	D-TOP-BATxxx-xx-x	Batterieteststrom während des Batterietestes
	D-TOP-xxx IB	Batterieteststrom + Ausgangsstrom (Last) bei DC_ok
Spannung (V)	D-TOP-BATxxx-xx-x	Busspannungen (Last (U _{PS} – 0,5V))
	D-TOP-xxx IB	aktuelle Ladespannung (DC_ok) aktuelle Batteriespannung (DC_fail)
Strom (C)	D-TOP-BATxxx-xx-x	Ladestrom in der Batterie
	D-TOP xxx IB	VZ (+) Ladestrom in die Batterie (DC_ok) VZ (-) Entladen der Batterie (DC_fail)

Umrechnungswerte für Spannung:

$$U = (\text{Byte} + n) * m$$

Byte = Antwort auf ASCII "V" oder ASCII "B" (0 – 255)

n = Offset 24V(27V) = 357 48V(54V) = 360

M = Multiplikant 24V(27V) = 0,04902 48V(54V) = 0,1

Beispiel 24V: Byte = 234 U = (205+357) * 0,04902 = 27,5V (gerundet auf eine Stelle nach Komma)

Beispiel 24V: Byte = 0 U = (0+257) * 0,04902 = 12,6V

Spannungswerte < 17,5V (36V) sind für die Batterieüberwachung nicht notwendig.

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