

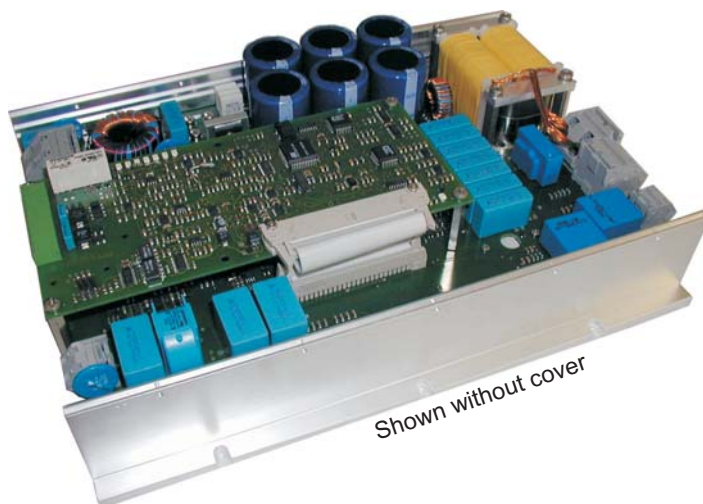
1-phase output  
500 up to 1400 VA

**1Ph-Sine Wave inverter**  
on 72/110VDC battery networks



- Use in rolling stock
- Extreme stable control loop
- Any kind of load (capacitive, inductive, one-way-rectifying, phase control)
- Synthetic Sinus, Distortion factor <1%
- RS 232 / 485 Interface for changes of parameters and data check
- Processor controlled
- Multiple Sine-output voltages
- Voltage-time area -symmetry

for railway, special technology, building machinery



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## Series WER 50/51

with low-frequency transformer

### Main points:

#### Input:

- Input voltage range up to >1 : 2,5
- External fuse (emergency protection)
- Disturbance proof EN61000-4-4/5 level 3
- Input filter in acc. to EN55011 A+20db
- No reverse polarity protection
- Soft start/internal pre-charging
- Inrush current limiting
- Integral power run-up
- Defined switch-on/switch-off point
- No-load current 650mA (110V)
- Input plug X3: Wago-745-603
- Rejection of 2xf low frequency current (Option 2)

#### Output:

- Low voltage intermediate circuit
- 1Ph-sine voltage
- output sided low-frequency transformer
- Internal output EMC-filter
- I<sup>2</sup>t-over load protection of dynamical loads
- U- or f/U-run-up (standard: U-run-up)
- No-load proof, short circuit proof dynamically/statically
- Tolerance  $\pm 2\% = f(U_{in}/I_{out}/TU)$
- Response time  $\Delta t=50\% < 3 \text{ ms}$
- Distortion factor <1%
- Under voltage control
- Over load capable up to 1,5 x P<sub>out</sub>
- Output connector X9: Wago-745-202

#### In general:

- Signal connector X15: Phoenix MSTB 2,5/8GF
- On/Off remote (Inhibit)
- Failure signal U<sub>out</sub> (Relay contact)
- Status display LED (7 segment display)

- Temperature control
- Fan (Temperature regulated)
- X4: Phoenix MSTB 2,5/26F
- H-Full bridge with re-feeding
- Clock frequency approx. 20 kHz
- Isolation test voltage: 1,5 KV<sub>AC</sub> 1 min
- Input/Output: 2,5 KV<sub>AC</sub> 1 min
- Ambient temperature -25°C / +70°C
- Short term 85°C / Derating > 50°C (ventilation to be clarified)
- MTBF On request
- Shock/vibration in acc. to EN50155
- Weight: approx. 5,5 kg (transformer approx. 12,5 kg)
- Dimension: (340 x 250 x 90)mm without transformer
- CE-Conformity On request

Input	Output UZK	Trans-former <sup>1)</sup>	Power	Model number
<u>U<sub>in</sub></u> V DC	<u>U<sub>out</sub> / 1Ph</u> Vrms 50Hz	<u>U<sub>in</sub> / U<sub>out</sub></u> Vrms 50Hz	<u>P<sub>out</sub> stat./dyn.</u> VA	
<b>50 - 101</b>	30	30/230	500/700	WER50.U72.050/070
43 - 130 dyn.	30	30/230	800/1000	WER51.U72.080/100
<b>77 - 154</b>	46	46/230	800/1000	WER50.U10.080/100
66 - 170 dyn.	51	51/230	1000/1400	WER51.U10.100/140

1) customized / available with additional output windings / optional 115V/60Hz

The output voltage can drop up to 10% by U<sub>in</sub> min

Mechanical adaptation: On request

One time projecting costs: On request

Modification costs for possible changes above values: On request

Output frequency 60Hz / 400Hz / 115Vrms: On request

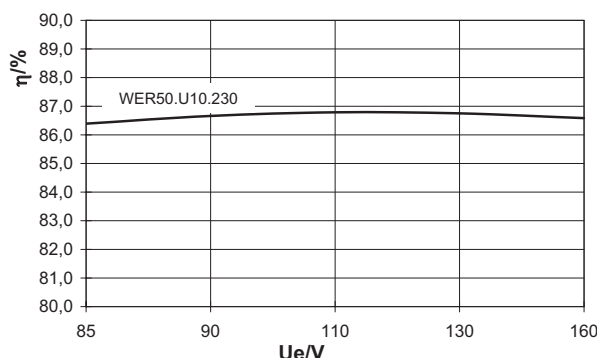
Higher power and voltages: On request

1) Transformer prototypes are delivered by SYKO, series by the manufacturer. SYKO gives a delivery manual.

2) The input AC-current can be minimized by an external choke. The power is supported by/based on the internal capacitors.

### Efficiency

WER50.U10.230



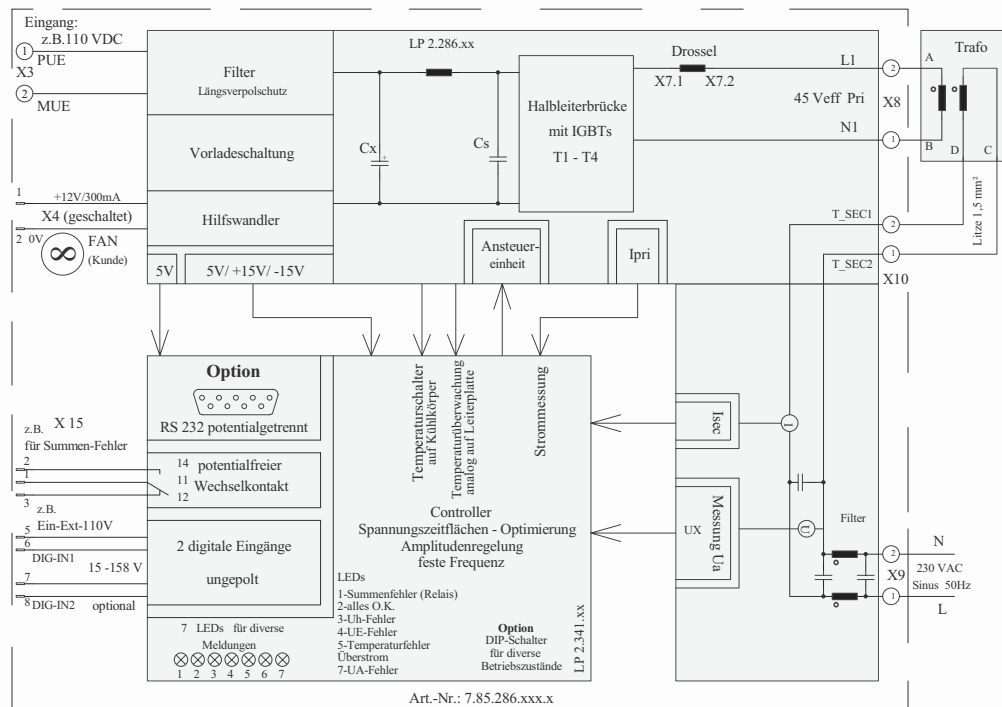
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Many mobile applications need a 1phase/50Hz/230V-alternating voltage to supply kitchen-devices, pumps, computers, control systems, measurement equipment and tools et-cetera out of the on-board network or UPS-battery.

The **WER50/51** series generates an output power of 500kVA statically up to >1,4kVA dynamically. It is supplied by on-board voltages from 72V up to 110V DC. Developed for the mobile use in rolling stock / railway applications this „electronic power block“ is equipped with corresponding connectors for periphery, optional components as (input choke), 50 Hz-transformer, display unit and functional inputs for different signalling applications.

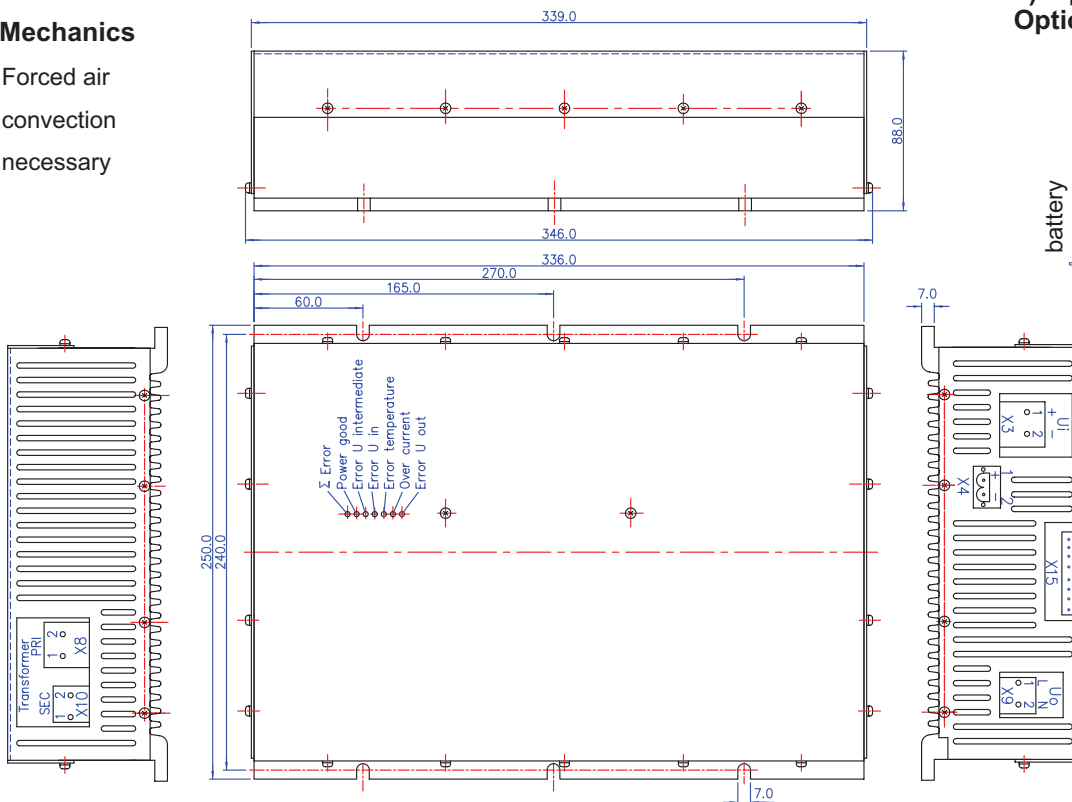


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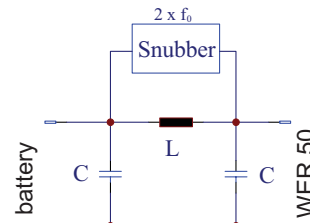
The power block is build up/developed with the following features: no cabling, modern semiconductors, very wide input voltage range, over voltage and transient strength, simply mechanical mounting, very high efficiency, transformer's voltage-time area symmetry (Patent pending), filter capacitors dimensioned for extreme low frequency 100 Hz and high frequent chopping currents, input and output sided EMC-filters, monitoring functions, quartz stable frequency, distortion factor of <1%, regulated/controlled/short circuit proof output voltage and a wide ambient temperature range. These functions lead to a flexible and unproblematic usable power component.

**Mechanics**

Forced air convection necessary



**2) Input current-Smoothing Option (On request)**



To smooth down the input sine current (2xf0), which is caused by very high input capacity a choke can be connected input sided.

- 1) Relay change-over contact
- 2) N.C.
- 3) DIG-IN-1
- 4) DIG-IN-2
- 5) X
- 6) X
- 7) X
- 8) X