

1Ph/2Ph Sine Output  
up to 1800VA / 2100VA dyn.

**Battery- Inverter**  
for Batterys 24/36/72/110V DC



- For applications on rolling stock
- Electrical safety acc. EN60950  
VDE 0805, CE acc. EN50121-3-2
- Short circuit proof (dynamic / continuous)
- Synthetic sinus wave output
- Disortion factor <1,5%
- Stable regulation for any kind of loads  
(capacitive, inductive, complex)
- Processor controlled / regulated
- High frequent isolation
- Efficiency up to >92%

for Railway and Special technology



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## Series WER.H4

### Main points:

#### Input:

- 24/36/72/110V Battery
- EMC / Disturbances EN50121-3-2
- Defined turn-on point with amplitude-time hysteresis
- Integral power run-up
- No-load power approx. 20W
- Power-Sleep mode <2mA ( $\Sigma$ -Inhibit) floating / polarity independent / surge proof 10 - 154V / 2mA = ON (open=OFF)
- AC-OFF: 10-90V/2mA (open=ON), surge proof
- Fuse external (customer sided) low 100Hz current ripple to the input side
- Connection:  
24V / 36V-type: Würth screw terminal M8  
72 - 220V-type: Wago-spring clamp 16mm<sup>2</sup>

#### Outputs:

- Auxiliary voltage 24V / 0,6A floating for external loads<sup>2)</sup> (0,4A when stronger fans)
- 1Ph/2Ph-sinus-voltage
- EMC / Disturbances EN50121-3-2
- Tolerance  $\pm 2\% = f(U_i/I_o/T_a)$
- $U_o - 7\%$  at  $U_i < 0,7 \times U_{nom}^1$
- Dynamic over load 5s / re-start 45s<sup>3)</sup>
- Monitoring of rms-current
- I<sup>2</sup>t-load protection of dynamical over load<sup>3)</sup>
- Response time  $\Delta I = 50\% < 2$  ms
- Disortion factor <1,5%
- No-load and short circuit proof
- U or f/U run-up characteristic (standard: U run-up)
- Connections:  
Power: Wago-spring clamp 4mm<sup>2</sup>  
Auxiliary: Phoenix MC 1,5/2-STF-3,81  
communication: Phoenix MSTB 2,5/6 STF-5,08  
 $\Sigma$ -Inhibit/Fan-Error: Phoenix MC 1,5/4-STF-3,81

#### General:

- Error signalling (communication)
- Status display LED (7 pc.)
- Speed/temperature controlled fans >55°C
- Test button for fan operation
- Over temperature switch-off<sup>3)</sup>
- 3) Locked turn-off after 5 x autostart-tries (in 60s)  
New run-up only with  $\Sigma$ -Inhibit or U<sub>i</sub>-off/on
- Isolation test voltage:  
Input - Output: 2,5 kV<sub>AC</sub> 1 min  
Input - Ground: 1,5 kV<sub>AC</sub> 1 min  
Output - Ground: a) N on Ground 1Ph-System  
optional: b) floating 2Ph-System
- Ambient temperature T<sub>a</sub>: -25/+70°C  
Option: -40/+70°C
- Derating >65°C / 2%/°C
- MTBF on request
- CE-conformation acc. EN50121-3-2
- Shock/Vibration acc. EN61373, Kat. 1, class B  
50m/s<sup>2</sup>-30ms / 7,9m/s<sup>2</sup><sub>rms</sub> all directions
- Weight: approx. 14 kg
- Dimension: (348 x 345 x 170)mm
- Ground connection: M5 thread bolt

Input	Output	Power	Model number
<u>U<sub>i</sub>-range</u>	<u>U<sub>i</sub> nom</u>	<u>U<sub>o</sub> rms</u>	<u>P<sub>o</sub> cont./dyn.</u>
V DC	V DC	V AC	VA
18 - 32 16,8 - 34 dyn. <sup>1)</sup>	24	230 / 50Hz	1400/1700 WER.H4.24.230.140/170
25 - 47 21,6 - 51 dyn. <sup>1)</sup>	36	230 / 50Hz	1700/2050 WER.H4.36.230.170/205
50 - 94 43 - 101 dyn. <sup>1)</sup>	72	230 / 50Hz	1700/2050 WER.H4.72.230.170/205
77 - 143 66 - 154 dyn. <sup>1)</sup>	110	230 / 50Hz	1800/2100 WER.H4.10.230.180/210

1) U<sub>o</sub> drops to 0,93 x 230V AC by reaching the dyn. minimum input voltage

Mechanical adaptation: on request

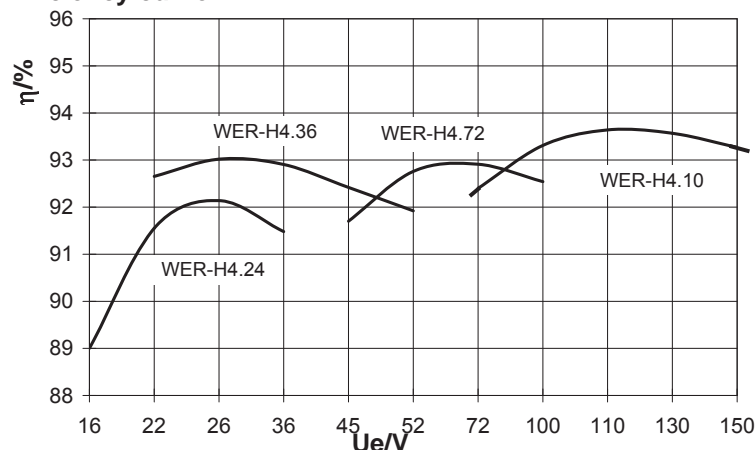
Single projecting costs: on request

Modifikation cost for possible changes above parameters: on request

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

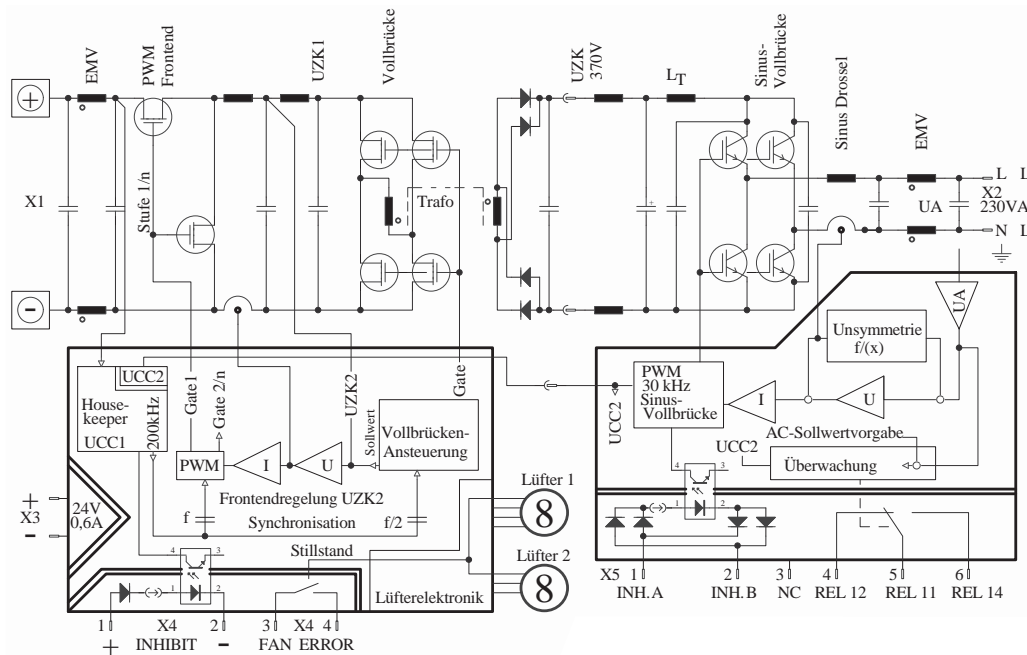
\* on request

### Efficiency curve WER.H4



1ph/2ph inverters operate on battery networks in vehicles to supply kitchen equipment, pumps, fans, tools, passenger sockets or similar applications. The new **WER.H4** series generates a synthetic, regulated and short circuit proof 230V sinus output with an output power up to 1800VA continuous and 2100VA dynamic.

This inverter solution for mobile applications is designed in a modular style (DC/DC plus DC/AC-step) with high frequent protective isolation. The inverter family is defined by the use of latest power components, wide input voltage range, over voltage and transient protection, high efficiency and smart mechanical design etc. High frequent chopping currents are only processed by ceramic capacitors and foil capacitors. Low frequent currents and re-feeding is realised with high quality electrolytic capacitors. This unproblematic and flexible operating power component is characterised by the following main points: input and output sided EMC-filters, monitoring and signaling functions, crystal stable output frequency, low disortion factor, voltage regulated output, dynamic and continuous short circuit protection, allowed ambient temperature up to 55°C without fan operation and up to 65°C without derating.



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