

Single phase output

300W/420W-100ms / 420VA

Battery inverter

for battery network 24/72/110VDC



- For on-board electrical systems
- Active over voltage absorption
50V-50ms, 70V-2ms
- Active inrush current limitation
- Active, very fast cross plugging protection
- Cold start and re-feeding resistant
- Preservation of sine wave at overload
- EMC VG95373, MIL Std 461
- On-board electrical systems acc.
VG96916 T5, MIL-Std-1275
- Ambient MIL Std 810
- DWR IP67 / RWR IP20

for Defence, railway, heavy machinery



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Series DWR.U On-board-Inverter

Main points:

Input:

- Turn-on point with hysteresis <17V
- Timed restart delayed
- Turn-off point at under voltage <16V
- Transients 50V/50ms 70V/2ms
Option 100V/100ms acc. MIL-Std 1275
without current reflexion
- Cross plugging protection prevents
energy dissipation at start sequence
- Sleep mode <0,5mA
- Inhibit 2mA / 5-36V + transients
independent of polarity and floating
- Fuse as emergency protection
- Connection: Amphenol ECTA 1331 103

Output:

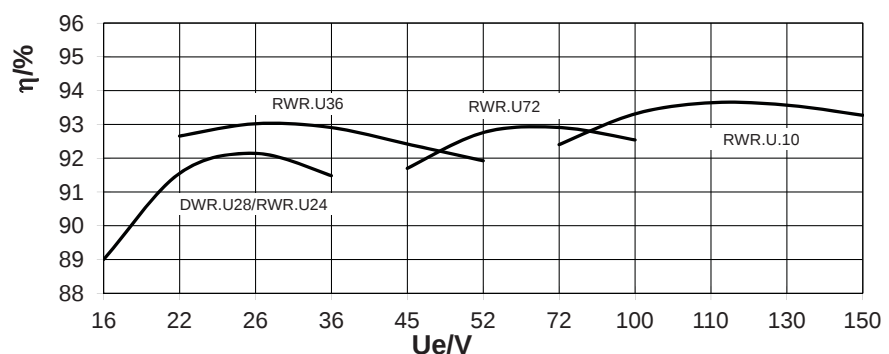
- Synthetic sine wave at
overload and under voltage
- Distortion factor <1%
- Accuracy $\pm 1,5\% = f(U_{in}/I_{out}/T_a)$
- Capacitive/inductive/complex load capable
- f-stable 50Hz $\pm 0,1\text{Hz}$ f(Ta)
- Continuous power
300W + 300VAR $\Sigma 700\text{VA}$
- Dyn. load 420W / 100ms
- Dyn. over current limitation
- Temperature range -40...+70°C
- Connection: Amphenol ECTA 1331 303

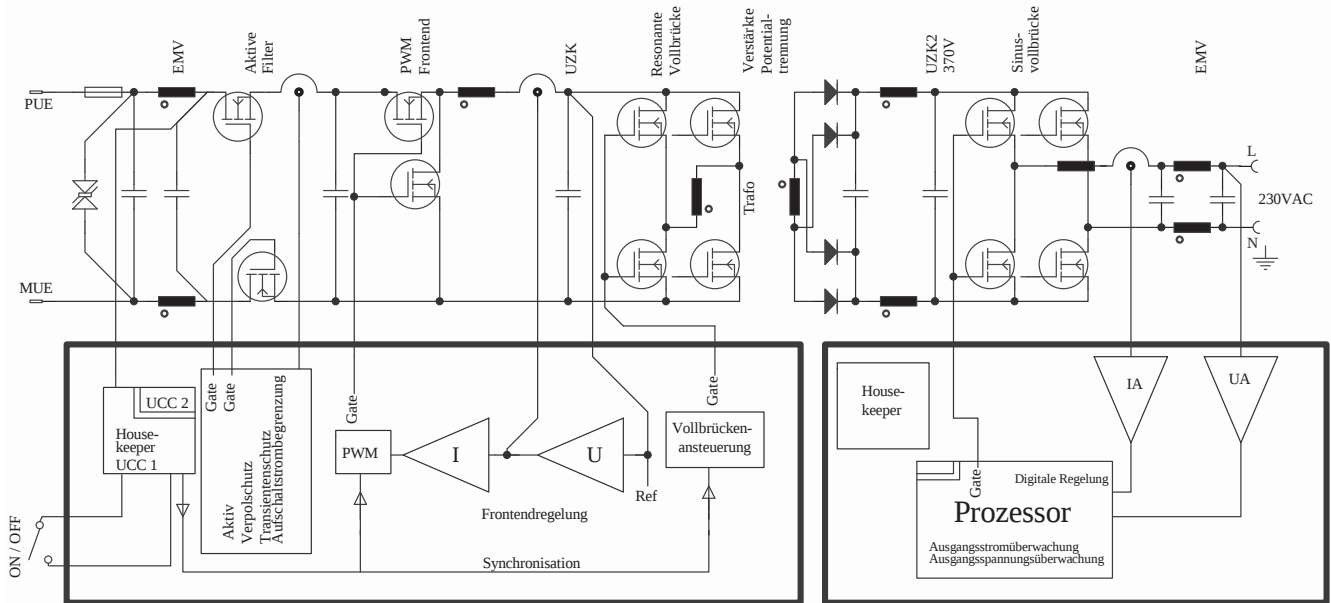
In general:

- Protection class I with PE connection
- Efficiency 91% (40-100% load)
- Isolation coordination EN50124
Input-output: 8 mm
Input-ground: 2,5 mm
Output-ground: 4 mm
- Safety EN60950 and EWG
- CE-conformity on request
- Protection IP65 (IP20 on request)
- Dimension: (252 x 136 x 80)mm
- Weight approx. 2kg
- Ground bolt M6 Helicoil

Input		Output	Power	Model number
<u>U_{in}</u>	<u>nom</u>		<u>P_o stat./dyn.</u>	
V DC	V DC		VA	
16 - 36	28	230V / 50Hz	250/300	DWR.U.28.230.50.300
50V / 50ms		115V / 60Hz	250/300	DWR.U.28.115.60.300
70V / 2ms		115V / 400Hz	250/300	DWR.U.28.115.40.300
16 - 34	24	230V / 50Hz	300/350	RWR.U.24.230.50.350
14,4 dyn.				
25 - 47	36	230V / 50Hz	300/350	RWR.U.36.230.50.350
21,6 - 50,4 dyn. ¹⁾				
50 - 94	72	230V / 50Hz	300/350	RWR.U.72.230.50.350
43 - 101 dyn. ¹⁾				
77 - 143	110	230V / 50Hz	300/350	RWR.U.110.230.50.350
66 - 154 dyn. ¹⁾				
115V / 60Hz:				on request
Mechanical adaption:				on request
Single projecting costs:				on request
Modification costs for possible changes above values:				on request
Output frequency 60Hz / 400Hz / 115Veff:				on request
* on request				

Efficiency curve





For applications in mobile areas such as Defence, Avionic (rolling stock) the battery inverter family DWR.U (RWR.U) was modified and especially designed as IP67 (IP20) unit according to the on-board network specification VG96916 T5 (EN50155). Active cross plugging protection for continuous and very fast reverse polarity connection by hand or caused by on-board disturbances or energy removal at engine start sequences as well as transient protection for long term over voltages (transient kill) and input sided inrush current limitation or dU/dt -inrush current limiter are implemented.

The multiple stage concept – EMC, cross plugging protection, transient protection, front end stage, U/I-resonant push-pull stage and double phase bridge with synthetic sine wave shape generation – realise extreme high functionality, very high efficiency and increased isolation (EN50124). The output sine wave is preserved even at over load and up the turn-off point. SYKO implemented a thermal management, which prevents hot spots.

Mechanic (Series DWR)

