3-phase output
with DC-intermediate circuit

3Ph sine wave inverter
on high voltage battery 250/450V
on traction line 600/750/1200V

SYKO®

for mobile applications, ship, special technology

- **Cascaded two-stage-topology**
- **Double-Regenerator pre-stage to UZK ≦$U_{in\ min}$**
- **Use direct on traction line/high voltage battery**
- **Extreme transient strength**
- **Wide input voltage range**
- **Synthetic sine wave output**
- **Access to UZK for further power stages**
- **Input and output EMC-filter**
- **Low rated air ventilation from TU > 50°C**
- **Efficiency > 95%**
- **f/u-Control, I²t-limitation**

Patent pending

Series DRR 02.U
without isolation

Main points:

Input
- External fuse (customer)
- Input-EMC-filter
- Double Regenerator for high input voltages and long-term transients
- Auxiliary voltage 24/110V +-40%
- Low input capacity
- Integral power run-up Intermediate circuit / 3ph-sine wave
- Under and over voltage switch-off
- Delayed re-start
- Power connection: WAGO Cage Clamp 4mm²
- Signal connection: Phoenix plug 2,5mm²
- Auxiliary connection: WAGO Cage Clamp 2,5mm²

Output intermediate circuit
- No-load, short circuit proof
- UZK-regulation = f (Tu/Iout/Uin) ±2%
- For external loads up to 30 % of sum-power
- Isolated auxiliary voltage
- Clamp: WAGO Cage Clamp 4mm²

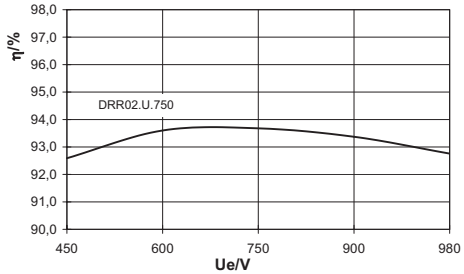
Output 3 Ph-voltage
- 3 ph-synthetic sine wave
- I²t and dyn. over load protection
- Run-up with f/U-control
- No-load, short circuit proof
- Stability ±3 % = f (TU/Iout)
- Failure signalling (diverse)
- Acceleration control df/dt
- Clamp: WAGO Cage Clamp 4mm²

General:
- On/off-application for UZK
- 5V auxiliary output
- Set point value 0 – 5 V @ 0 – fmax or (5 – 34) V @ 0 - 100% PWM
- Start/Stop-function for 3ph-sine voltage
- Failure signal Uout
- Boost operation~1,2 x UZK @ 0 - 60 HZ
- Status displays
- Test voltage to ground 2,5kV AC
- Ambient temperature –25/+70°C
- Flange heat sink's cooling to be clarified
- Temperature-monitoring heat sink and electronic
- Dimension: approx (400 x 550 x 130)mm
- Weight approx. 29kg
- CE-Conformity on request

Input	**Output**			
Uin	UZK	Uout	Pout stat/dyn	Model
V DC	VDC	Vrms	KVA	number
150-380	360	230	2,0/3,0	DRR02.U220.360.230.20/30
550 / 10ms	360	230	3,0/5,0	DRR02.U220.360.230.30/50
220V-battery				
310 - 585	360	230	3,0/5,0	DRR02.U450.360.230.30/50
1060 dyn.	360	230	5,0/8,0	DRR02.U450.360.230.50/80
450V fuel cell				
	630	400	3,0/5,0	DRR02.U450.630.400.30/50
	630	400	5,0/8,0	DRR02.U450.630.400.50/80
460 - 900	630	400	3,0/5,0	DRR02.U660.630.400.30/50
1060 dyn.	630	400	5,0/8,0	DRR02.U660.630.400.50/80
660V intermediate circuit				
430 - 1050	630	400	3,0/5,0	DRR02.U750.630.400.30/50
1950 / 10ms	630	400	5,0/8,0	DRR02.U750.630.400.50/80
750V traction line				
840-1680	630	400	3,0/5,0	DRR02.U120.630.400.30/50
2100 / 10ms	630	400	5,0/8,0	DRR02.U120.630.400.50/80
1200V traction line	***(Warning: motor test voltage / 3Ph-transformer)***			***on request***
In preparation: **1000VAC/16,3Hz 1500VAC/50Hz 1500VDC**	630	400	2,5/4,0	PDR.01 with isolation
Modification costs for possible changes above values:				On request
One time-project costs:				On request

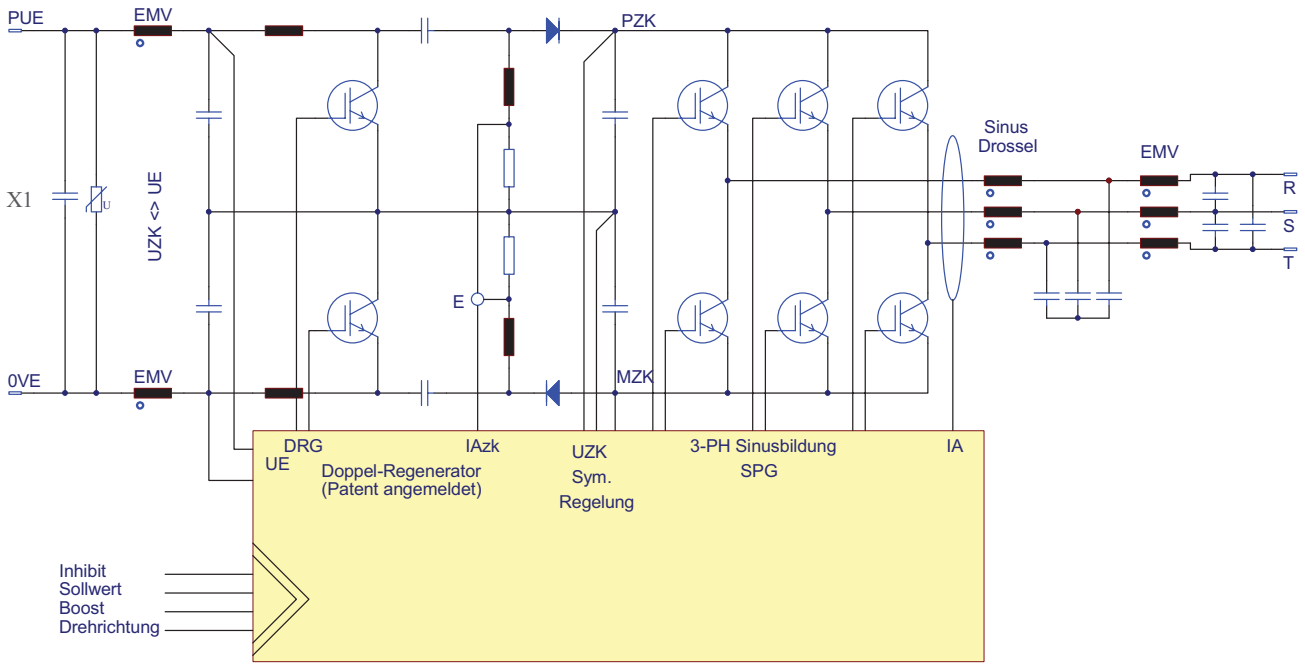
In the Boost-Mode optionally the intermediate circuit's UZK is 1,2 x U_{nom} higher and the 3Ph-voltage rises up to 1,2 x Uout / up to 60 Hz.

Efficiency



Stand: 04/07

SYKO Gesellschaft für Leistungselektronik mbH • Phone +49(0)6182/9352-0 • Fax +49(0)6182/9352-15 • www.syko.de • email: info@syko.de



3ph-sine wave inverters of the ***DRR 02.U*** series have been developed for the supply compressed air compressors, de-central driver's cab air-conditioning, circulating air and emergency ventilation etcetera. The source can be high voltage batteries, 3phase intermediate voltages or traction line voltages with the according tolerance range and long-term transient strength. The inverter itself works without input to intermediate voltage to 3ph-output isolation (with according isolation test voltage in the motor).

The patented Double-Regenerator concept, which can generate a regulated, short circuit proof intermediate voltage, modern semiconductors, the choice of components and the according control-functions lead to very high functionality by an efficiency of up to >95%. Forced air convection is not necessary in the most cases - but it belongs to the heat sink's thermal connection. A load-stable 3-phase output voltage is generated, which can be adjusted with an isolated set-point value (analogue or PWM), because of the cascaded topology Double-Regenerator/3phase bridge with a regulated and short circuit proof intermediate circuit (UZK), synthetic 3-phase-sine voltage and EMC-filtering.

Soft start, f/U-control and I²t-monitoring make it economic to use de-central inverters with weight and energy saving opportunities. Optionally further loads as 1ph/3ph inverters, battery chargers or system supplies can be connected to the intermediate circuit.

Mechanics