Single output
up to 1500 Watt

High voltage converters
with isolation

SYKO®

for railway / car applications / high voltage batteries

- **Use on traction line 600/750V_{DC}**
- **Nominal voltage 1200V_{DC}, 2400V_{DC}**
- **Burst/Surge EN 61000-4-4/5 level X**
- **Over voltages acc. to IEC1287 Level 2**
- **Noise suppression EN 55022.A + 20dB**
- **20 mm air and creepage distances / OV2**
- **acc. to EN50124-1 / PD2**
- **LES-DB / Railway EN 50155 / 121**
- **Battery charging / system supply**
- **Power factor correction 16/50Hz (optional)**
- **DC and AC input 1000/1500V PFC**

Series ABS07

Main points:

Output:
- Regulation Σ (U_{in}+I_{out}+T_U)<±2%
- Accuracy absolute ± 2%
- Ripple <200 mV_{pp} (over T_U)
- Spikes <300 mV_{pp} (T 1:1/50MHz)
- Response time ΔI=50% ≤ 3 ms
- Constant current limitation < 1,2 $I_{out\ max}$
- Output spike filter (C - L^2 - C)
- No-load, over load, short circuit proof
- *Options*:
  U-out change over charg.end voltage(KV4)
  I-short circuit change over (KV5)
- Switch off at over load <0,7 x Uout
- Dynamical over load 30s[1)] (optional)
- Relay, closing from approx. 0,8 x Uo nom
- Screw terminal M4

Input:
- No-load power approx. 17 Watt
  Input filter EN 55022.A +20db
- Disturbances (6kV mathematical)
  Burst EN 61000-4-4 level 4
  Surge EN 61000-4-5 6kV / 2Ω / 50µs
- Input fuse 1,2kV 8x50 mm
  with adapted melt flow characteristic
- Inrush current + run-up current limitation
- No external high frequency interference
- Reverse pol. protection with
  bridge rectifier
- Power factor control at AC (sin, sq, tr)
- Screw terminal M4

In general:
- Auto run-up with input voltage Uin
- Efficiency typ. 88%
- Clock frequency > 80 kHz
- Cascaded Regenerator-topology (Patent)
- Isolation test voltage 4,8 KV_{AC} 10s / 100%
- 20 mm air and creepage distances
  (PCB/transformer)
- Ambient temperature -25°C / +70°C
  forced air convection (Rücksprache)
- Option: -40°C / +85°C
- Derating 1,2% / °C >60°C
- MTBF on request
- Shock/vibration acc. to EN50155
- Weight approx. 9 kg
- Dimension 420 x 338 x 140 mm³
- CE-conformity certificate on request

Uin	Pout	Uout	Iout	Model
V	W	V	A	number
400 - 1050 DC	1000	24	42	ABS 07.U750.024.420
1950V / 2ms	1500	36	42	ABS 07.U750.036.420
750V DC-traction line		72	21	ABS 07.U750.072.210
		110	13,6	ABS 07.U750.110.136
440 - 950 DC	1000	24	42	ABS 07.U700.024.420
1200V / 10ms	1500	36	42	ABS 07.U700.036.420
750V traction line with		72	21	ABS 07.U700.072.210
limited transients		110	13,6	ABS 07.U700.110.136
800 - 3280 DC	1000	24	42	ABS 07.U1224.024.420
5000V / 2ms	1500	36	42	ABS 07.U1224.036.420
1,2/2,4 kV traction line		72	21	ABS 07.U1224.072.210
		110	13,6	ABS 07.U1224.110.136
900 - 2500 DC	1000	24	42	ABS 07.U1500.024.420
5000V / 2ms	1500	36	42	ABS 07.U1500.036.420
1,2 / 1,5 kV DC-Netz		72	21	ABS 07.U1500.072.210
single isolation		110	13,6	ABS 07.U1500.110.136
720 - 1500 AC	1000	24	42	ABS 07.U10AC.024.420
5000V / 2ms		36	28	ABS 07.U10AC.036.280
1,0kV AC-Netz 16,3 - 60 Hz		72	14	ABS 07.U10AC.072.140
sinus, rectangular, trapeze		110	9	ABS 07.U10AC.110.090
1050 - 2150 DC/AC	1000	24	42	ABS 07.U15AC.024.420
1,5kV DC/AC-network 16,3 - 60 Hz		36	28	ABS 07.U15AC.036.280
sinus, rectangular, trapeze		72	14	ABS 07.U15AC.072.140
		110	9	ABS 07.U15AC.110.090

Start-up operation		on request
Battery charging to charging end voltage		on request
Version H	-40°C up to 85°C	additional charge
Modification costs for possible changes above values:		on request

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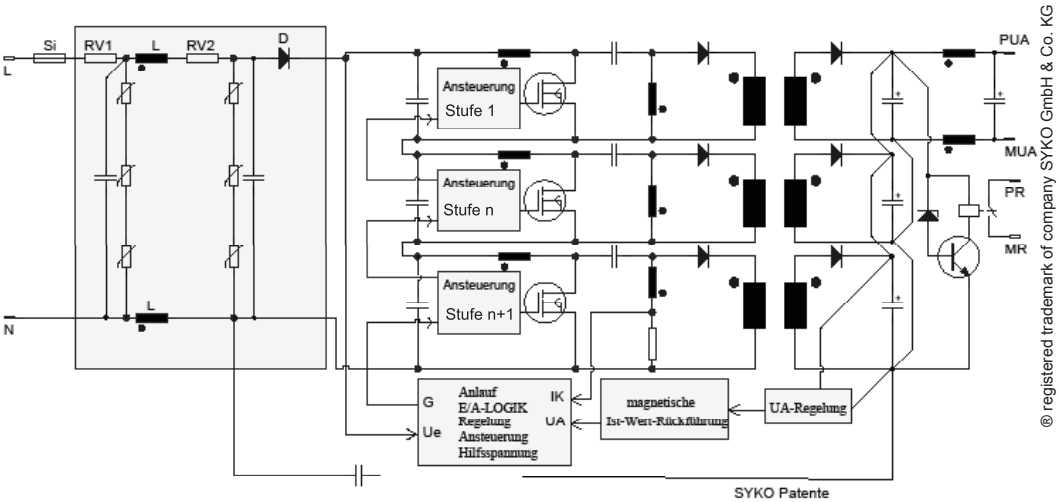
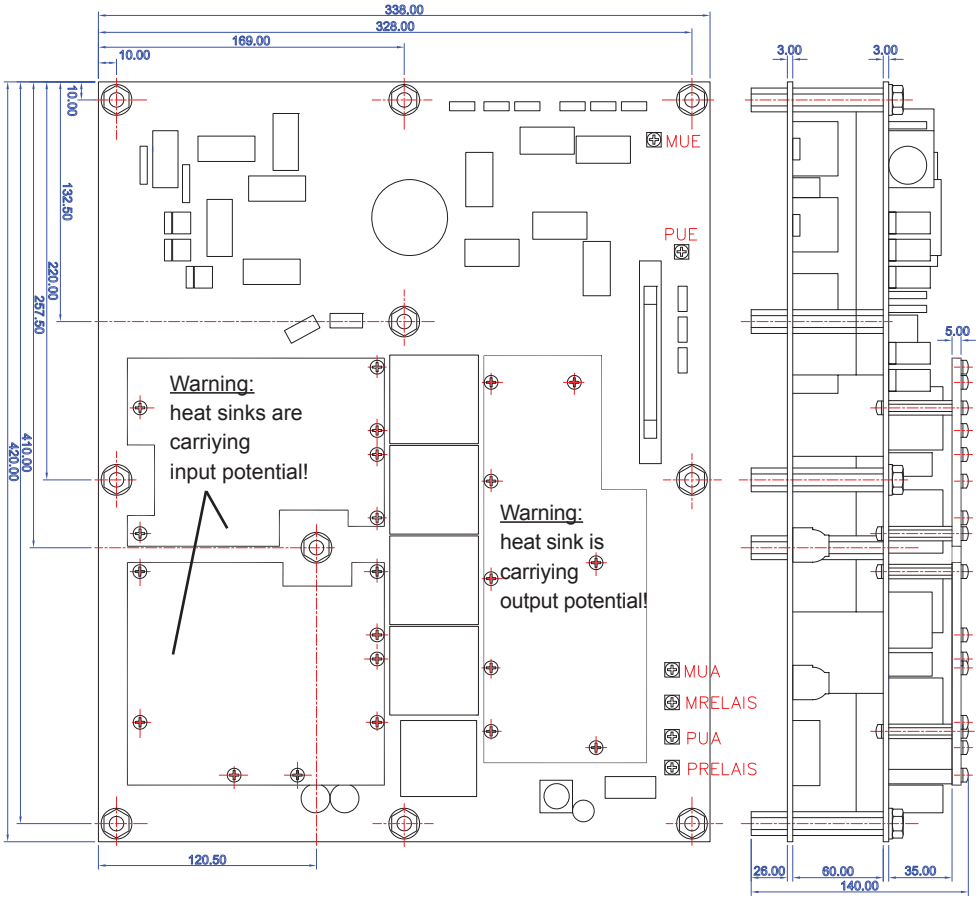
The ***ABS07*** series is designed for the mobile and stationary use especially for traction line and high voltage battery applications with an output power of 1500W.

The patented switching topology allows extremely high input-output isolation with 20 mm air and creepage distances on the PCB and in the transformer. The robust and stable mechanical build-up for extreme shock and vibration demands is ideal for traffic applications e.g. trams, hybrid-vehicles and long distance trains.

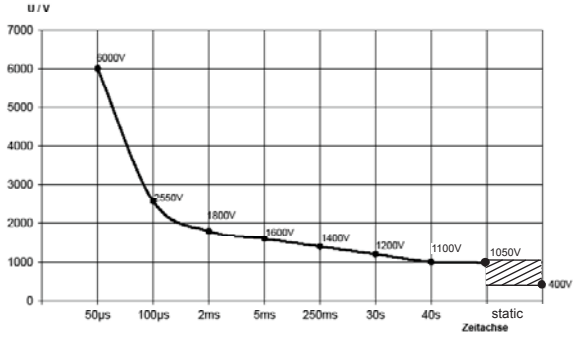
This standard power supply is protected and filtered against over voltages and disturbances at the input and output side. The power supply produces a regulated, short circuit proof, no-load proof and isolated low voltage with the according maximum dynamical power directly out of the high voltage network. This low voltage can be used for system supplies or battery charging. The output voltage can be switched-over from the nominal voltage to the maximum charging end voltage (customs demand) for batteries. An external output length diode is necessary in the case of output sided re-voltages (e.g. battery) and prevents the energy re-flow or allows the parallel connection for security reasons / power increase.



Mechanics



Dynamical over voltages on 750V traction line



Efficiency