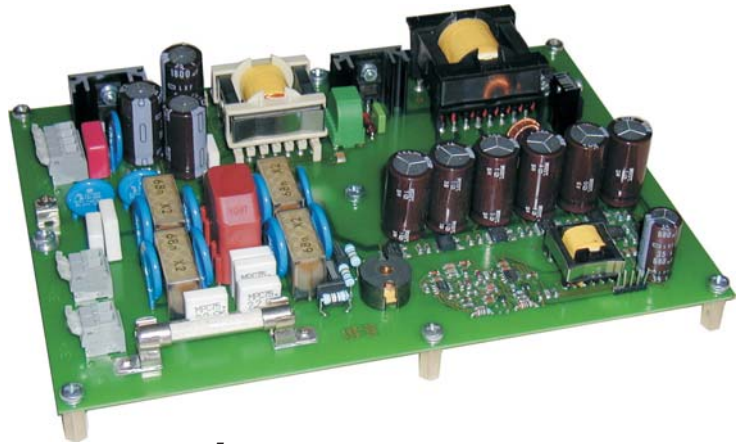


for railway- / vehicle applications / high voltage batteries

- Input voltage range 400 - 1050 V stat.
- Burst/Surge EN 61000-4-4/5 Level. X
- Over voltage IEC1287 and 2,5kV/5s - 5kV 52 Joule / 6kV/50µs
- Input filter EN 55011.B
- 12 mm air- and creepage distances
- LES-DB / Railway EN 50155 / 121
- Power failure bridging



© registered trademark of company SYKO GmbH & Co. KG

## Series ABS05.U

### Traction line- / Start-up power supply

#### Main points:

#### Output:

- Regulation  $\Sigma (U_{in} + I_{out} + T_{ambient}) < \pm 2\%$
- Accuracy absolute  $\pm 2\%$
- Ripple  $< 200 \text{ mV}_{pp}$  (over  $T_{ambient}$ )
- Spikes  $< 300 \text{ mV}_{pp}$  (T 1:1/50MHz)
- Regulation time  $\Delta I = 50\% \leq 2 \text{ ms}$
- Constant current limitation  $< 1,2 I_{out \text{ max}}$
- Output spike filter (C - L<sup>2</sup> - C)
- No load-, over load-, short circuit proof
- Output length diode  
The Output diode can be bridged to reduce power loss (KV2)
- Switch over  $U_{out \text{ nom}} / U_{charging \text{ end voltage}}$  (KV1)
- Dead battery / start-up characteristic
- Wago plug terminal type 255-401

#### Input:

- No-load power approx. 2,5 Watt
- Input filter in acc. EN 55011.B
- Disturbances  
EN 61000-4-4 Level 4 Burst  
EN 61000-4-5 Level X Surge  
Surge 6 kV on  $2\Omega / 50\mu\text{s}$   
plus long term transients
- Input fuse 1,2kV 8x50 mm  
with adapted melt flow characteristic
- Run-up and Inrush current limiting
- Reverse polarity protection with length diode surge proof (positive and negative)
- Over and under voltage switch off with Hysteresis and re-start delay
- Wago plug terminal type 255-401
- Input voltage ripple ( $U_{in}$ -ripple) of  $> 10\%$  must be announced

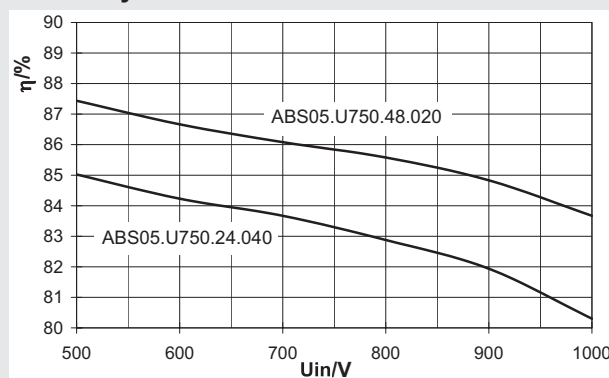
#### General:

- Efficiency typ. 86%
- Clock frequency  $> 80 \text{ kHz}$
- Triple voltage-cascaded topology
- Isolation test voltage  $4 \text{ kV}_{AC} 1 \text{ min}$
- $\geq 12 \text{ mm}$  air and creepage dist. (pcb/transformer)
- Ambient temperature  $-25^\circ\text{C} / +70^\circ\text{C}$
- Option:  $-40^\circ\text{C} / +85^\circ\text{C}$  (LES-DB)
- Derating 1,3% /  $^\circ\text{C} > 70^\circ\text{C}$
- MTBF on request
- Shock/vibration in acc. to EN50155
- Weight approx. 750 g
- Dimensions approx.  $235 \times 170 \times 40 \text{ mm}^3$
- Fastening with 9 x distant bolts  
with inside thread M4x8 / 2 Nm
- Ground connection screw UNC6-32x1/4  
1,4 Nm (for M3 ring cable lug)
- CE-Conformity on request
- Hold-up time based on nominal voltage

$U_{in}$ V	$P_{out}$ W stat. / dyn.	$U_{out}$ V	$I_{out}$ A stat. / dyn.	Model- number
135 - 330 660 V / 5s	66 / 85	12	5,5 / 7,0	ABS 05.U220.12.070
	75 / 100	24	3,0 / 4,0	ABS 05.U220.24.040
	75 / 100	48	1,5 / 2,0	ABS 05.U220.48.020
400 - 1050 2500 V / 5s	66 / 85	12	5,5 / 7,0	ABS 05.U750.12.070
	75 / 100	24	3,0 / 4,0	ABS 05.U750.24.040
	75 / 100	48	1,5 / 2,0	ABS 05.U750.48.020
600 - 1600 2500 V / 5s	66 / 85	12	5,5 / 7,0	ABS 05.U1000.12.070
	75 / 100	24	3,0 / 4,0	ABS 05.U1000.24.040
	75 / 100	48	1,5 / 2,0	ABS 05.U1000.48.020
Version H	-40°C ... 85°C			additional charge

Modification costs for possible changes above values: on request

#### Efficiency:

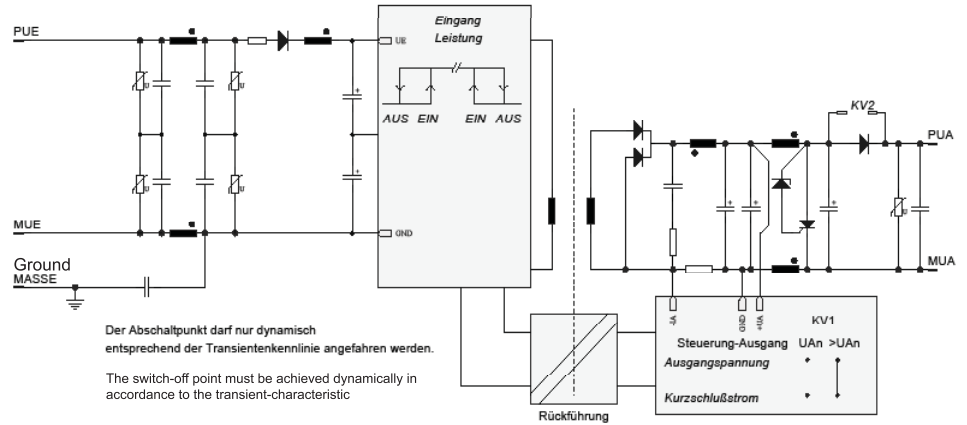


The **ABS05** series is designed for the mobile and stationary use especially for traction line and high voltage battery applications with an output power of 75 W (dyn. 100 W).

The special switching topology allows extremely high input-output isolation with 12 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. trolley-cars, subway-cars, busses and ships.

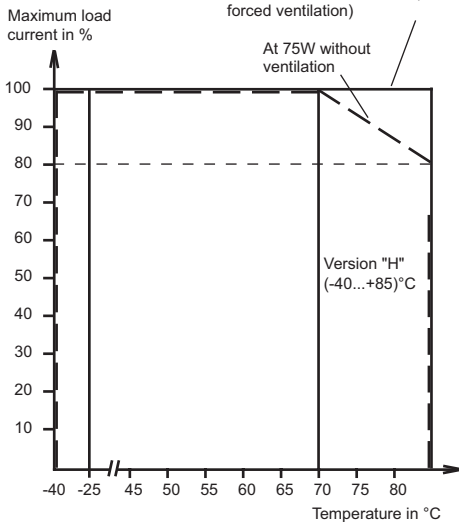
For very high demands the ABS05 series can be integrated in a special housing with IP65 protection level.

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 a maximum dynamical power of 100W 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. The output length diode prevents the energy re-flow and allows the parallel connection for security reasons.

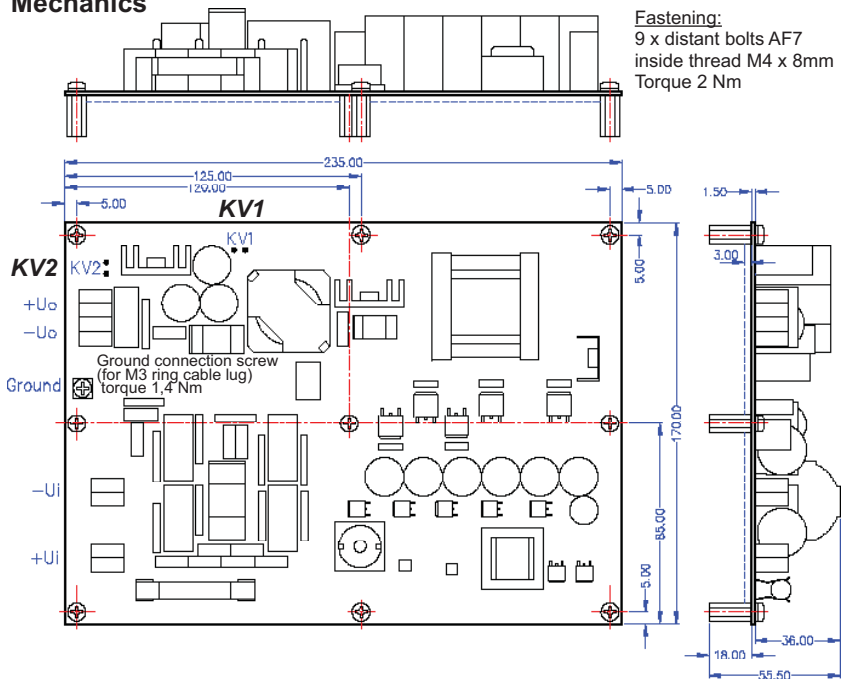


**Derating-curve**

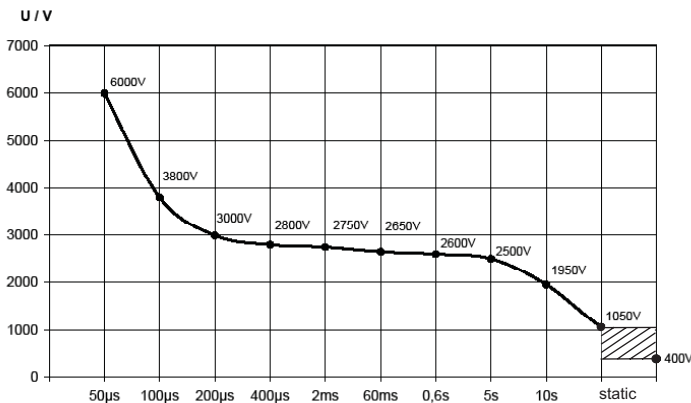
At 75W statically, according to the LES-DB-definition  $T_U \leq 85^\circ\text{C}$  in the converter's direct ambient (with forced ventilation)



**Mechanics**



**Allowed dynamical transient characteristic for 750V-traction line**



**Measurement of conducted radio interferences**

