

- **U<sub>in</sub> from 4,5V**
- **Input range up to > 1:10**
- **U<sub>in</sub> lower and higher as U<sub>out</sub>**
- **Security relevant topology**
- **Over voltage protection (Thyristor)**
- **Very high life time**
- **Especially for mobile use**
- **Open build-up  
dimension 80 x 70 x 17 mm<sup>3</sup>**
- **100% function test of all parameters**
- **Noise suppression better EN 55022.B**

Vehicles applications (14/28/42 V-Netz) / Railway applications

US Pat. no. 6.094.366  
D Pat. no. 195 05 417



Input range 4,5 - 45 V DC !!!

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## Series GSR-V

### Main points:

#### Output:

- Accuracy absolute  $\pm 1\%$
- Regulation  $\Sigma(U_{in} + I_{out} + T_U) < \pm 1,5\%$
- Ripple  $< 40 \text{ mV}_{pp}$  (typ.  $20 \text{ mV}_{ss}$ )
- Spikes  $< 100 \text{ mV}_{pp}$  (T 1:1/50MHz)
- Regulation time  $\Delta I = 50\% \leq 2 \text{ ms}$
- No-load-, static over load- and static short circuit protected
- Short circuit current  $\leq 1,2 I_{outmax}$
- Over voltage protection (Thyristor)
- Parallel operation possible

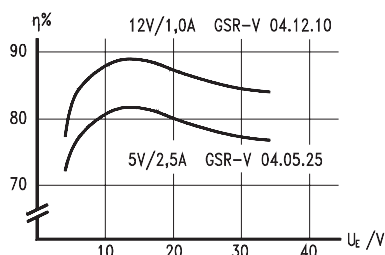
#### Input:

- No-load power approx. 0,4 Watt
- ON-OFF-Remote (Inhibit)
- Input filter EN 55022, curve B
- Input fuse on PCB
- Reverse polarity protection (Square diode, fuse)
- Transient adapted

#### General:

- Ambient temperature  $-25^\circ\text{C} / +70^\circ\text{C}$ ,  
Option:  $-40^\circ\text{C} / +85^\circ\text{C}$  (H)  
Derating  $2\%/^\circ\text{C} > 70^\circ\text{C}$
- Air convection cooled
- Common 0V input - output
- MTBF on request
- Open build-up for PCB-mounting
- Dimension  $80 \times 70 \times 18 \text{ mm}^3$
- Shock/vibration see annex
- EMC see application
- Metal cover

#### Efficiency:



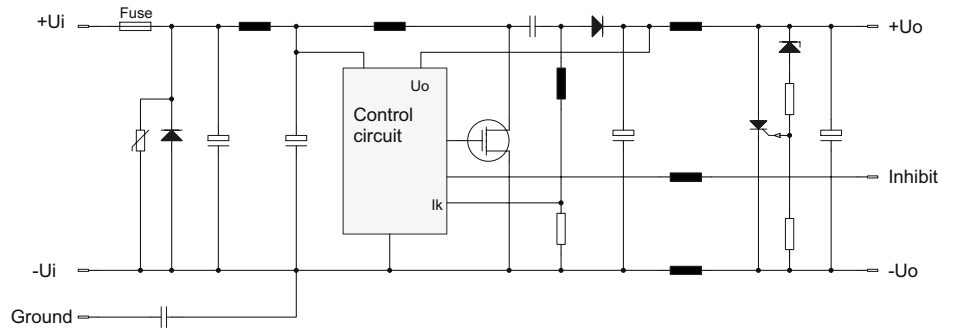
<u>U<sub>in</sub></u> V	<u>U<sub>out</sub></u> V	<u>I<sub>out</sub></u> A	Model number
<b>4,5 - 38</b> 45 Vs	5,1	2,5	GSR-V 04-05-25
	12	1,0	GSR-V 04-12-10
	15	0,8	GSR-V 04-15-08
	24	0,5	GSR-V 04-24-05
<b>9 - 38</b>	12	1,6	GSR-V 20-12-16
	15	1,5	GSR-V 20-15-15
	24	0,8	GSR-V 20-24-08
<b>9 - 72</b>	12	1,2	GSR-V 85-12-12
	15	1,0	GSR-V 85-15-10
	24	0,6	GSR-V 85-24-06
<b>19 - 85</b>	24	0,8	GSR-V 50-24-08
(H)	-40°C up to +85°C		Additional charge
	Aluminium-cover incl. mounting		Additional charge
Modification costs for possible changes above values:			on request

SYKO extended the family of the Regenerator-converters with the **GSR.V** series. It works as a step-up/step-down converter (The input voltage can be lower and higher as the output voltage) and is available in the power range up to 20 W.

These PCB-modules are designed for the use on multiple different battery voltages, to regenerate the extreme fluctuation on-board network. In accordance to the component's failure reasons this topology is security relevant. That means that a breakthrough of the input voltage to the converter's output and visa versa is not possible, even in the case of a chopper-circuit-semiconductor's defect.

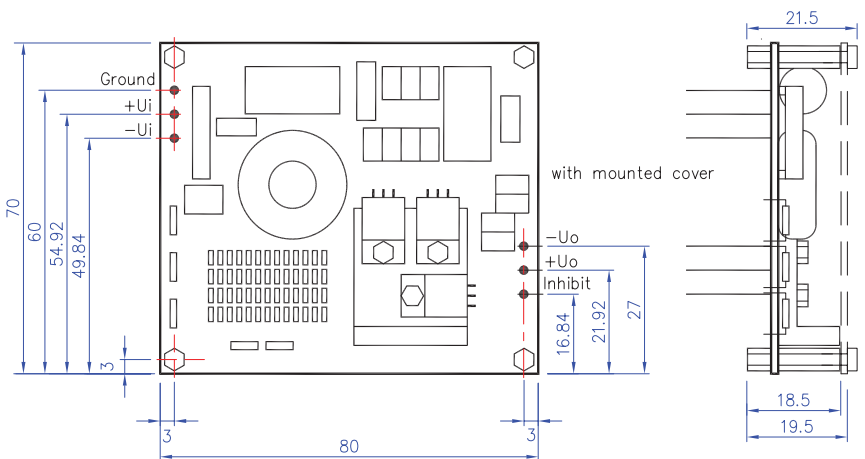
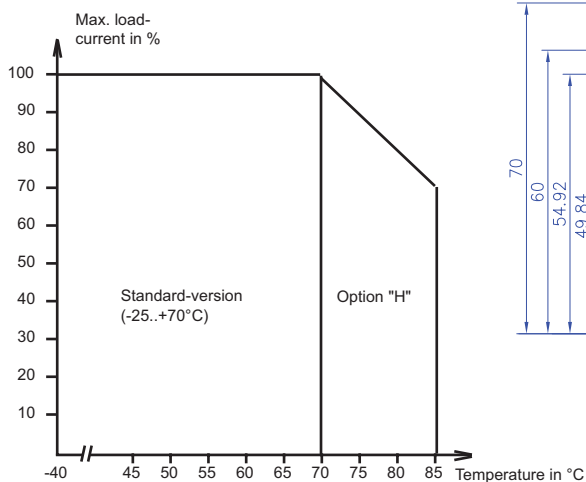
This series was brought to the series status with an input voltage range from >4,5 Volt DC especially for the use in trucks and cars. This gives the possibility to supply electronic devices, even when the battery is discharged or at the vehicle's cold-start situation. It is also possible to use a universal-input range of 9-72V, which covers all three on-board networks 14/28/42V.

All electrical parameters are 100%-tested. The result is a stable, high quality level and very high functional security.



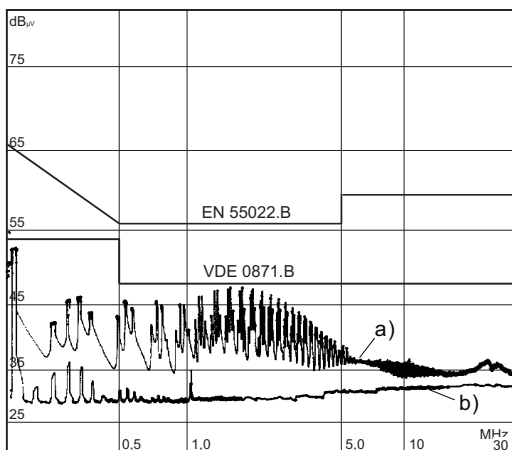
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### Derating-curve



### Measurement radio interference

- a) without external filter
- b) with external filter



### Application (Noise suppression / multiple outputs)

