

- On-board network frontend supply
- Safety relevant topology¹⁾
- No breakthrough of input-output-input
- U_i -range >1:4 continuous / >1:8 dyn.
- Active Transient protection filter¹⁾
- Active cross plugging protection
- VG 96916 T5, Option: MIL-Std 1275
- Dyn. and stat. short circuit proof
- EMC VG 95373 Level. 3(2)
- Nato EMC standard AECTP-500(4)
- Shock/vibration MIL Std 810

Special technology / Vehicles / Avionics / Off-shore



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Series GTR.V

Patented Topologies

US Pat. No. 5.991.166 + 6.094.366
D Pat. No. 195 15 210 + 195 05 417
Pat. No. DE 3804 074 C2 / EP 0402 367 B1

Main points:

Output:

- No load proof / short circuit proof
- Radio suppr. VG95373 SA02/LA01 level 3(2)
- Accuracy absolute $\pm 1,5\%$
- Regulation factor $\Sigma(U_i+I_o+T_a) \pm 1,5\%$
- Ripple <20 mV_{pp} (T 1:1/200MHz/50 Ω)
- Spikes <20 mV_{pp} (T 1:1/200MHz/50 Ω)
- Short circuit current <1,1I_{max}
- Response time ≤ 3 ms
- Dyn. regulation offset 2,5-8A: 450mV
- Run-up delay <1,5s
- GND Output = GND Input
- Connector VG95234 B1-14S-6SN (female)

Input:

- Fuse external by customer
- Radio suppr. VG95373 SA02/LA01 Level 3(2)
- Active input cross plugging protection
- Active Inrush current limitation (Patent AFI)
- Integral run-up current limitation¹⁾
- Dynamical current limitation dU/dt¹⁾
- Inhibit (Option) Sleep mode <1mA
- Disturbance protection VG 95373
- Transient proof VG 96916 T5¹⁾
- 50V-50ms/70V-2ms (Option: 100V/50ms)
- Connector VG95234 B1-10SL-3PN (male)

General:

- Current cascaded power stages¹⁾
- Radio suppression VG95373 Level 3(2)
- Nato EMC standard AECTP-500(4)
- Ambient temperature Ta -40°C / +70°C
- Option H: -40°C / +85°C
- Derating: 1,5%/°C >70°C
- Heat sink limit temperature 95°C KK-*
- Isolation test voltage:
Input/output - housing: 80V_{DC} (ϕ -C)
- Efficiency: typ. 90%
- Stable ground connector M6
- Weight approx. 1,7 kg
- Dimension 220 x 130 x 45 mm³
- Stable Aluminium housing with EMC barrier
- Protection level IP65 / colour RAL 6031 F9
- 6 flange mounting points for M5
- Shock / vibration MIL Std 810

U_i Battery V	P_o W stat. / dyn.	U_o V	I_o stat./dyn. A	Model number 2)
9 - 16 8 - 27 / 100ms VG 96916 T5 50V-50ms / 70V-2ms nom. 12	85 / 105	12	7,0 / 8,8	GTR.V12.12.088
		15	5,7 / 7,0	GTR.V12.15.070
		24	3,5 / 4,4	GTR.V12.24.044
		48	1,7 / 2,1	GTR.V12.48.021
9 - 34 VG 96916 T5 50V-50ms / 70V-2ms nom. 12/24	85 / 105	12	7,0 / 8,8	GTR.V20.12.088
		15	5,7 / 7,0	GTR.V20.15.070
		24	3,5 / 4,4	GTR.V20.24.044
		48	1,7 / 2,1	GTR.V20.48.021
16,8 - 34 10V dyn. VG 96916 T5 50V-50ms / 70V-2ms nom. 24	100 / 120	12	8,3 / 10	GTR.V24.12.100
		15	6,7 / 8,0	GTR.V24.15.080
		24	4,2 / 5,0	GTR.V24.24.050
		48	2,0 / 2,5	GTR.V24.48.025

Modification costs for possible changes above values: on request

1) The points are given by the following patents:

Regenerator Topology: US Pat. No. 5.991.166 + 6.094.366 / D Pat. No. 195 15 210 + 195 05 417
Active transient protection: Pat. No. DE 3804 074 C2 / EP 0402 367 B1

2) Optionally the internal power card can be offered without housing for the customer sided integration on an existing heat sink.

Modification:

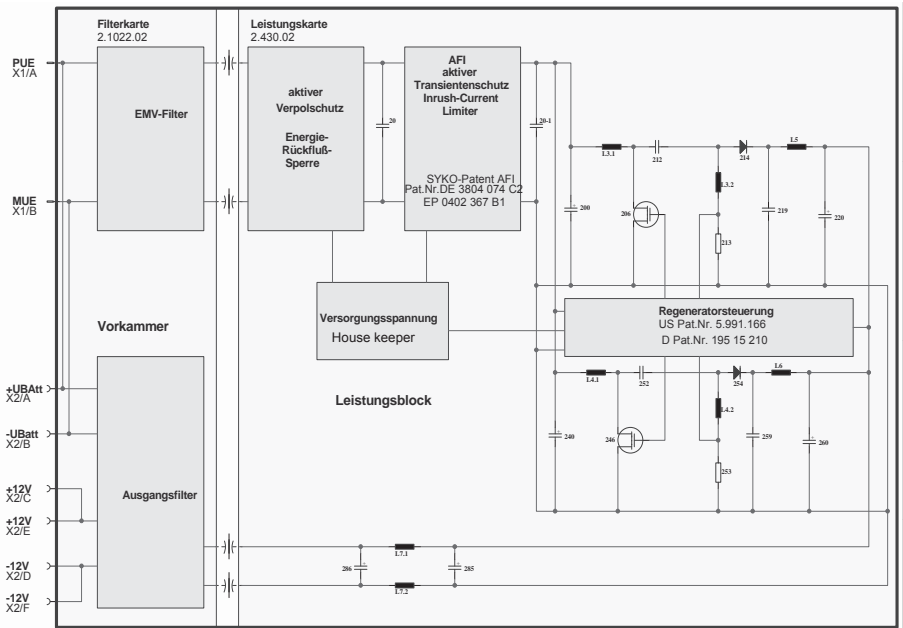
Optionally for applications, which are supplied over contact ring, the converter can be offered to regenerate the rough on-board network including an active hold-up time of 100ms.

Modification costs: on request

The **GTR.V** series is designed to generate an accurate supply voltage level from a land vehicle's on-board network with extreme disturbances based on the patented Regenerator topology and the patent of an active transient protection filter with current cascading and active cross plugging protection. The converter covers one or more nominal battery voltage levels with the input voltage range's dynamical tolerance.

The Regenerator topology works safety relevant and prevents the punch-through of the input to the output side when an external fuse is implemented.

The input voltage can be lower, equal or higher than the non isolated and regulated or adaptable as well as short circuit proof output voltage. (Regeneration of on-board network).



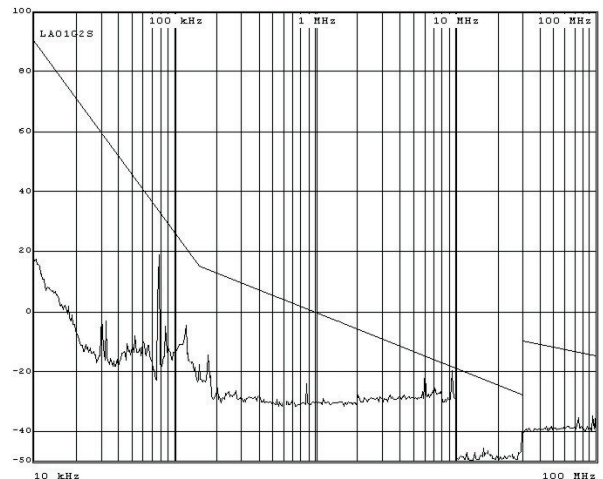
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Measurement radio interference

The patented topology's current cascading realises an accurate current splitting to each single power stages and unneeded stress for the components is prevented. High chopping currents are processed by ceramic capacitors and high quality electrolytic capacitors are just used for the static support. For the input and output the VG 95373 level 3(2) limits are realised by the mechanical construction details and EMC efforts.

Please hand over your customised demands when the function of CAP-charging or lead battery charging to charging end voltage or optionally the modification of an intelligent temperature regulated battery charging must be realised.

By the use of an optional Sleep-mode-Inhibit function the converter is inactive and the current consumption is <0,5mA. When a voltage signal is connected to this input (4,5 – 36 V plus transients) the converter is activated by a constant signal current of 2mA.



Mechanic

