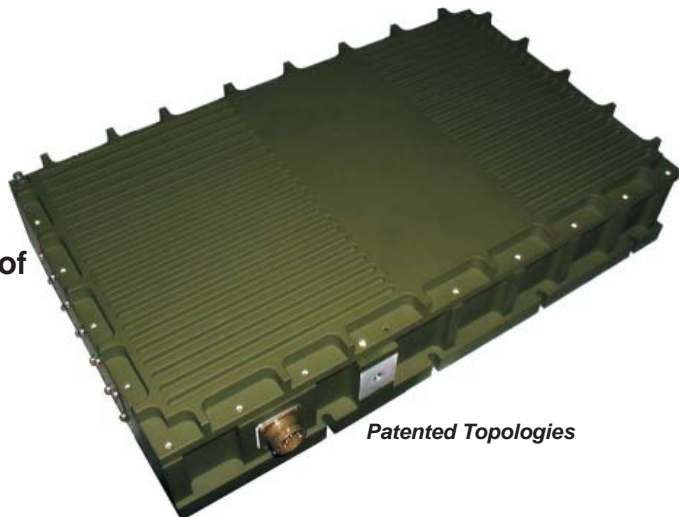


- On-board network front-end supply
- Ui-range >1:4 stat./>1:8 dyn.
- Active Hold-up time (10ms)
(operation over slip-ring)
- Active Transient protection filter ¹⁾
- Active cross plugging protection
- VG 96916 T5, Option: MIL-Std 1275
- Dyn. and continuous short circuit proof
- EMC VG 95373 (level 2)
- Nato EMC standard AECTP-500(4)
- Shock/vibration MIL Std 810

Special applications / Vehicles / Avionic / Off-shore



Patented Topologies

© registered trademark of company SYKO GmbH & Co. KG

Series FBV.U

Main points:

Output:

- No-load proof / short circuit proof
- Accuracy absolute $\pm 1,5\%$
- Regulation factor $\Sigma(U_i+I_o+T_a) \pm 1,5\%$
- Ripple <10 mVpp ($T: 1:1/200\text{MHz}/50\Omega/I_o > 400\text{mA}$)
- Spikes <25 mVpp ($T: 1:1/200\text{MHz}/50\Omega$)
- Short circuit current <1,1Imax
- Response time $\leq 50\text{ ms}$ ($>>C_o$)
- Dyn. regulation off-set $\Delta I = 40-90\% \pm 3\%$
- Start delay / run-up time <1,4s / 400ms
- Isolation test voltage $\pm 200\text{V}$ ($\phi-C$)
- EMC VG95373 Level 2
- Connector CA3102E20-23S-B-01

Input:

- Fuse external (customer sided)
- Input cross plug. protection dynamical by active diode
- active inrush current limitation (Patent AFI) <80A (24V-version)
- Integral run-up current limitation 1)
- Dynamical current limitation dU/dt 1)
- Active hold-up time 10ms
- Inhibit (Option) Sleep mode <0,5mA
- No-load current 260mA (at $U_i=24\text{V}$)
- Disturbance protection VG 95373 LF01G; LF02G; LF03G; LF05G; RS03/SF03G; SA06S; SF01S;
- EMC VG95373 SA02/LA01 level 2
- Transient strength VG 96916 T5 1) 50V 50ms / 70V 2ms
- Option: 100V / 50ms (MIL 1275 B)
- Connector CA3102E20-23P-B-01

General:

- Current cascaded power steps 1)
- Radio suppression VG95373 level 2 LA01G; SA02G; SA04G (on request)
- Nato EMV-Standard AECTP-500(4)
- Ambient temperature $T_a: -40^\circ\text{C} / +70^\circ\text{C}$
- Option H: $-40^\circ\text{C} / +95^\circ\text{C}$ (*-limit temperature)
- Derating:
without forced ventilation
1,2%/°C >50°C / 1,0%/°C >60°C
with forced ventilation
1,0%/°C >60°C / 1,5%/°C >70°C
- Massive ground connector M6
- Weight approx. 12 kg
Dimension 426 x 260 x 84,5 mm³
- Massive Al-housing incl. EMC-barrier
- Protection level IP65 / RAL 6031 F9
- 8 flange mounting points for M6
- Shock / vibration MIL Std 810

U_i Battery V	P_o W	U_o V	I_o A	Model number 2)
9 - 16 8 - 27 dyn. nom. 12	500	12	42	FBV.U12.12.420
		15	33	FBV.U12.15.330
		24	21	FBV.U12.24.210
9 - 34 VG 96916 T5 50V/50ms 70V/2ms nom. 12/24	400	12	33	FBV.U20.12.330
		15	27	FBV.U20.15.270
		24	17	FBV.U20.24.170
		48	8,5	FBV.U20.48.085
16,8 - 34 10V dyn. VG 96916 T5 50V/50ms 70V/2ms nom. 24	500	12	42	FBV.U24.12.420
		15	33	FBV.U24.15.330
		24	21	FBV.U24.24.210
		48	10,5	FBV.U24.48.105

Modification costs of possible changes above values:

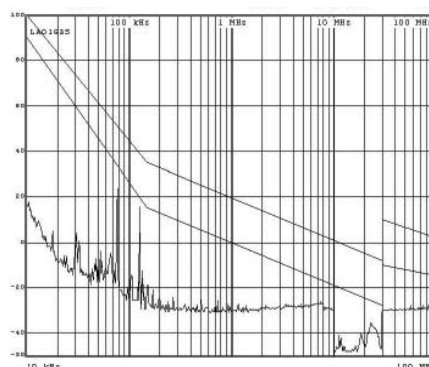
on request

1) These points are based on following Patents:

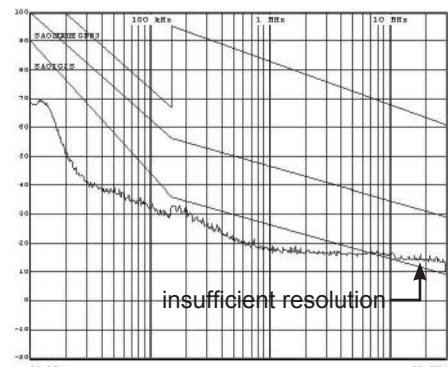
Regenerator-Topology: US Pat. No. 5.991.166 u. 6.094.366 / D Pat. No. 195 15 210 u. 195 05 417
Active transient protection: Pat. No. DE 3804 074 C2 / EP 0402 367 B1

2) Optionally the internal power PCB can be delivered without housing for customer sided system integration

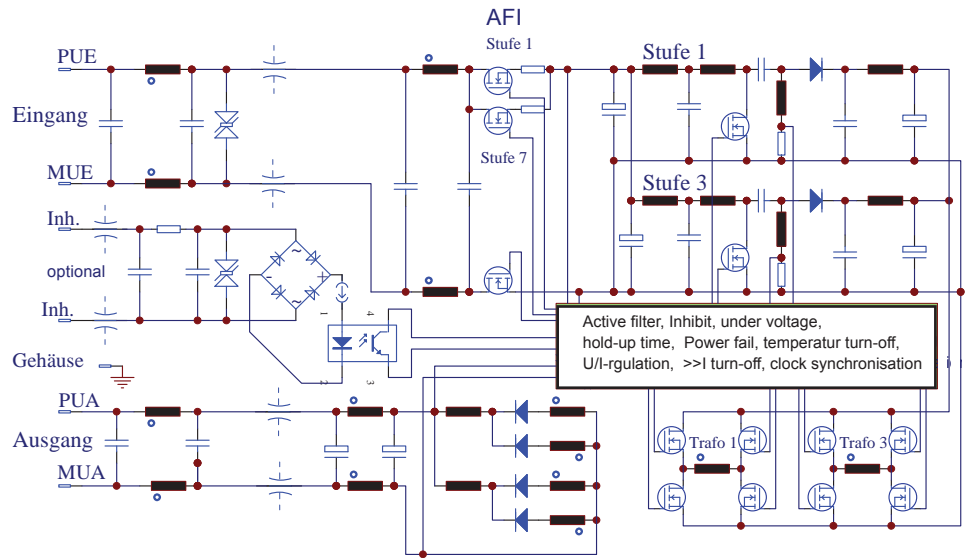
Measurement of radio interference LA01G narrow band



SA02G Broad band



The **FBV.U** series is designed to realise an isolated system supply voltage out of wide fluctuating on-board vehicle voltages including extreme disturbances. The concept is based on the patented Regenerator Topology and the AFI-Patent of an active Transient Protection Filter with current cascading. The wide input voltage range allows the operation on one or more nominal vehicle battery voltages including extremely wide varying ranges. Additionally it is possible to bridge network voltage drops by using a low-loss cross plugging protection in combination with an active hold-up time of 10ms = $f(\Delta C, \text{aging}, T_a)$. The output voltage is constant at full load even by a network interruption from minimum input voltage. It is easily possible to extend the hold-up time to 50ms with an external additional module.



© registered trademark of company SYKO GmbH & Co. KG

By using the patented current cascaded topology a high-precision current split-up to the single power steps is possible and unnecessary stress operation of components is prevented. The over all very high chopping currents are processed by the use of ceramic capacitors. High quality electrolytic capacitors are just used for static support.

Based of the mechanical construction and the EMC-actions the VG 95373 level 2 requirements for input and output lines are kept. Optionally it is possible to charge High-Cap or lead-Batteries with charging end-voltage. Further the modification to implement intelligent battery management as function of the battery's temperature can optionally be offered. Please send your specification.

By using an optional Sleep-mode-Inhibit the converter is in-active with a currents consumption of <0,5mA. The activating is done by connecting 4,5 - 36V plus transients with a constant current of 2mA to this floating input.

Mechanic

