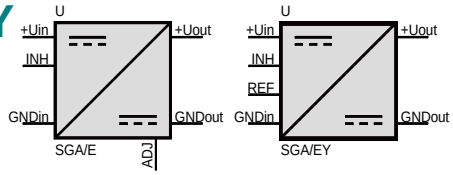
DIN EN ISO 9001 certified

Autronic

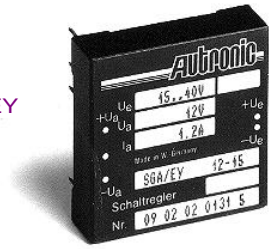
Steuer- u. Regeltechnik GmbH & Co KG D-74343 Sachsenheim

Switching regulator SGA/E and SGA/EY Output power up to 15 Watts

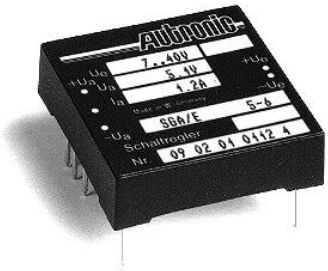
Non isolated - Single output
PCB mounting



SGA/EY



SGA/E



Technology

- MOSFET design
- SMD design

Special Features

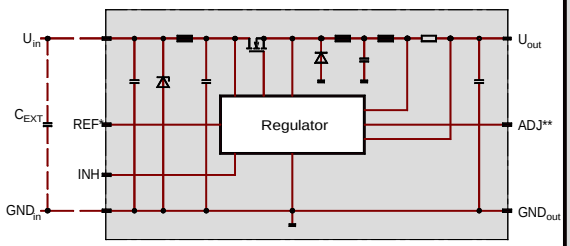
- Series meets Generic Immunity Standard according to EN 50082-2:1995 with additional improvements:
  - Burst transients: Input and output filtering according to EN 61000-4-4: 1995 (class 3): 2 kV
  - Surge: Input and output filtering according to EN 61000-5-5: 1995 (class 1): 0,5 kV symmetric
- Conducted RFI:
  - Input filtering according to EN 55022:1994, class A with additional input fiilter class B
  - Output filtering according to Vfg 243/1991
- Remote off (inhibit) for the SGA/E converter with TTL - L-signal or by grounding INH or for the SGA/EY converter with TTL-H-signal or by grounding INH to a reference voltage.
- Reverse polarity protection by external fuse
- Constant current limit
- Zero load operation and short circuit protected
- Adjustment (ADJ) output voltage at SGA/E
- Vibration resistant and indifferent to humidity due to encapsulated case

Specifications

at ϑ_{amb} =25°C, $U^*_{in\ nom}$, $I_{out\ nom}$

Temperature		
Ambient air**	ϑ_{amb}	= -40...+85°C
Storage	ϑ_S	= -40...+100°C
Rise in case	$\Delta\vartheta_C$	≤ 22K
Output Voltage		
Tolerance ΔU_{out} /%		≤ ±0,5**
Output ripple u_{rms} /mV		≤ 3,5
Output ripple peak-peak u_{pp} /mV		≤ 30
Rise time at $I_{out\ nom}$: t_{on} /ms		≤ 10
Regulation		
Line regulation ΔU_{out} /mV for 100% ΔU_{in}		≤ 5
Load regulation ΔU_{out} /mV for 0,1...0,9 I_{out}		≤ 5 static
at <300 µs		≤ ± 200 dynamic
Temperature coefficient TC/%/K		≤ 0,02
Remote on/off contol		
SGA/E: Inhibit voltage U_{inh} /V for U_{out}= "off"		≤ 1
Inhibit current I_{inh} /µA		≤ 500
SGA/EY: Inhibit voltage U_{inh} /V for U_{out}= "on"		≥ 3,5
Inhibit current for U_{inh}= 5V: I_{inh} /µA		≤ 500
Auxiliary voltage U_{ref} /V		= 5±0,25
Admissible current I_{ref} /mA		≤ 5
Input current in Standby-Mode I_{in} /µA		≤ 12
Weight M/g		= 29

Block diagram



C_{EXT} = 100 µF connected near to the converter

* = REF not at SGA/E

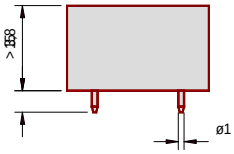
** = ADJ not at SGA/EY

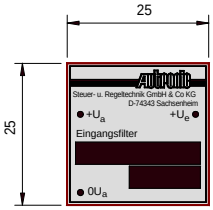
* 12V and 24V

** At 5V: 1%

Drawings

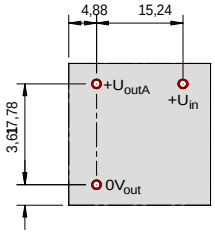
Dimensions in mm with a outside dimensions tolerance of +0,7 mm

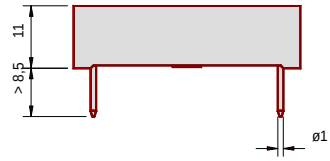


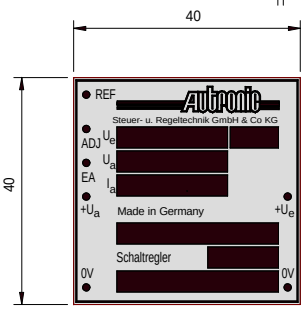


Filter

Hole pattern component side

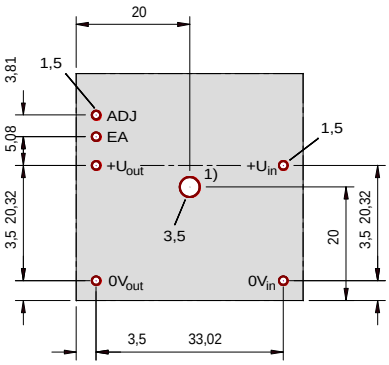




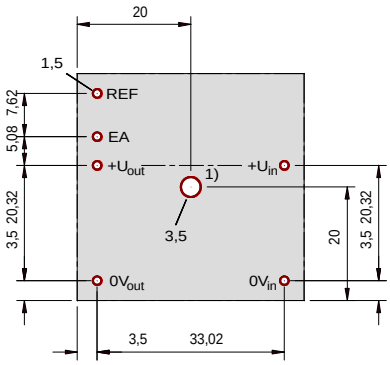


SGA/E and SGA/EY

SGA/E



SGA/EY



1) = Hole in regulator 9 mm depth for tapping screw 2,9 DIN 7981/7982

Mountig/Operating Instructions

Installation: The converters have to be installed according to the guidelines currently in force, like other open electronic component assemblies. Attention must be paid to sufficient ventilation, fastening and protecting against accidental contact!

Reverse polarity protection: If reverse polarity connection of the input voltage can not be excluded, an external time-lag fuse must be installed. Size: $I_{rat} = 1{,}5I_{in\,max}$ (max. 3,15A). Pay attention on sufficient current of current source in case of short-circuit (t_f < 300ms)!

External shut down (inhibit): U <1V at pin "INH" at SGA/E and respectively >3,5V (max. 40V) at SGA/EY switches off the output.

Current limiting: $I_{lim} = 1{,}1...1{,}5I_{out\,nom}$ with quasi-constant current characteristic. In case of short-circuit: I_s <1...1,3$I_{out\,nom}$.

Adjustment (at SGA/E): Connection of the pin "ADJ" and "OV" increases the output voltage of about 8%. Intermediate values are obtained by means of a resistor. By connecting pin "ADJ" with the positive output pin over a resistor, the output may be lowered by max. 8%. In the same manner the minimum input voltage increases or decreases. At SGA/EY no adjustment is possible.

RFI Suppression: RFI Suppression can be improved to EN 55022 class B by connecting an external filter to the input. Up to U_{in} = 40V: Order number 09 01 00 0011 3. Up to U_{in} = 60V: order number 09 01 00 0021 6

Standard regulators SGA/E and SGA/EY

U_{out} V	I_{out} A	$U_{in\,nom}$ V	$U_{in\,range}$ V	$I_{in\,max}$ A	η *** %	f kHz	Order Number SGA/E	Order Number SGA/EY
5*	1,2**	12/24	7...40	1,1	81	200	09 02 01 0112 4	09 02 01 0131 6
12	1,2	24	15...40	1,1	92	200	09 02 02 0112 3	09 02 02 0131 5
15	1,0	24	18...40	0,9	92	200	09 02 03 0112 2	09 02 03 0131 4
24	0,6	48	28...60	0,6	91	200	09 02 04 0112 1	09 02 04 0131 3

* Adjusted to 5,1V. Converter switches on at U_{in}>8V.
** Operation at U_{in}< 8V requires 3,5% baseload.
*** At $U_{in\,nom}$

Specifications subject to change without notice

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