

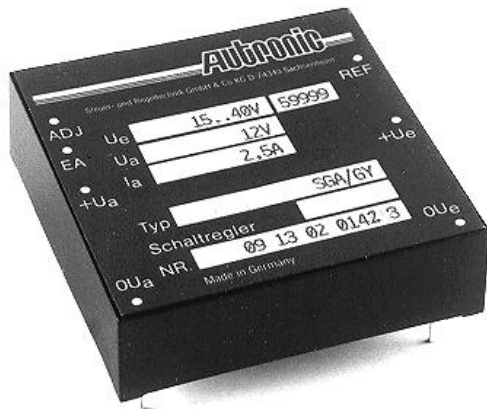
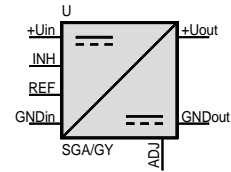
DIN EN ISO 9001
certified

Autronic

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

Switching regulator SGA/GY Output power up to 30 Watts

Non isolated - Single output
PCB mounting



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 61000-4-5: 1995 (class 2): 1 kV symmetric
- Conducted RFI:
 - Input filtering according to EN 55022:1994, class B
 - Output filtering according to Vfg 243/1991
- Remote off (inhibit) with TTL - H-signal or by connecting with an auxiliary voltage
- Constant current limit
- Zero load operation and short circuit protected
- Overvoltage protection in the output circuit, even in case of external supply (OVP)
- Shielded case bottom
- Extremely low thermal stress of sensitive components due to high efficiency
- Vibration resistant and indifferent to humidity due to encapsulated case.

Specifications

at $\vartheta_{amb} = 25^{\circ}\text{C}$, U_{in}^{*} , $I_{out\ nom}$

Temperature

Ambient air**	$\vartheta_{amb} = -40...+85^{\circ}\text{C}$
Storage	$\vartheta_S = -40...+100^{\circ}\text{C}$
Rise in case	$\Delta\vartheta_C \leq 27\text{K}$

Output Voltage

Tolerance $\Delta U_{out} / \%$ at 0,5 I	$\leq \pm 1^*$
Output ripple u_{rms} / mV	$\leq 3,5$
Output ripple peak-peak u_{pp} / mV	≤ 20
Rise time at $I_{out\ nom}$: t_{on} / ms	≤ 10

Regulation

Line regulation $\Delta U_{out} / \%$ for 100% ΔU_{in}	$\leq 0,5$
Load regulation $\Delta U_{out} / \text{mV}$ for 0,1...0,9 I_{out}	≤ 115 static
at $< 100 \mu\text{s}$	$\leq \pm 300$ dynamic
Temperature coefficient $TC / \%$ K	$\leq 0,02$

Remote on/off control

Inhibit voltage U_{INH} / V for $U_{out} = \text{"off"}$	$= 2...40$
U_{INH} / V for $U_{out} = \text{"on"}$	$\leq 0,8$ or open
Inhibit current at $U_{INH} = 5\text{V}$: $I_{INH} / \mu\text{A}$	≤ 25

Auxiliary voltage U_{REF} / V

Intern. resistance: at 5V regulator $R_i / \text{k}\Omega$	$= 47$
at 12V regulator $R_i / \text{k}\Omega$	$= 75$

OVP

Starting point $U_{out\ nom} / \%$	≤ 130
admissible continuous ext. current I_{ext} / A	≤ 2

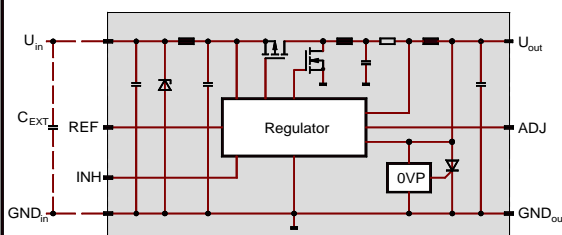
Input current in Standby-Mode $I_{in} / \mu\text{A}$

$\leq 1,5$

Weight M/g

$= 75$

Block diagram

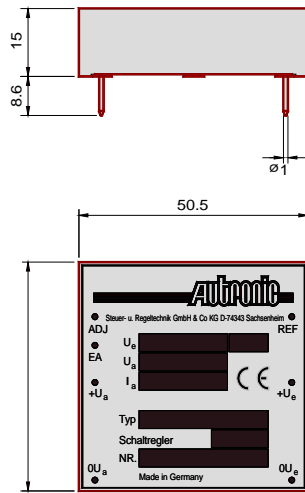


$C_{EXT} = 47\mu\text{F}$ near to the converter

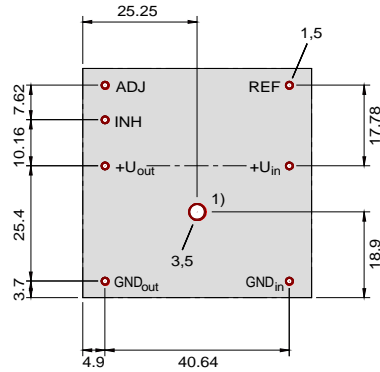
* 12V and 24V

Drawings

Dimensions in mm with a outside dimensions tolerance of +1 mm



Hole pattern component side



1) = for screw M3, thread depth 4 mm

Mounting/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: $I_{\text{rat}} = 1,5 I_{\text{in,max}}$ (max. 4A). Pay attention on sufficient current of current source in case of short-circuit ($t_f < 300\text{ms}$)!

Overvoltage protection: Externally or internally caused overvoltage at the output lead to a thyristor-controlled short-circuit of the output. Elimination of short-circuit is carried out by short interruption of voltage supply or switch-off by inhibit.

External shut down (inhibit): $U > 2\text{V}$ at pin "INH" (max. 40V) switches off the output.

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

Adjustment: Connection of the pin "ADJ" and "GND_{in}" 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.

Standard converters SGA/GY

$\frac{U_{\text{out}}}{\text{V}}$	$\frac{I_{\text{out}}}{\text{A}}$	$\frac{U_{\text{in,nom}}}{\text{V}}$	$\frac{U_{\text{in,range}}}{\text{V}}$	$\frac{I_{\text{in,max}}}{\text{A}}$	$\frac{\eta}{\%}$ **	$\frac{f}{\text{kHz}}$	Case	Order Number
5*	3	12/24	7...40	2,5	89	70...240	GY	09 13 01 0142 4
12	2,5	24	15...40	2,1	95			09 13 02 0142 3

* Adjusted to 5,1V

** At $U_{\text{in,nom}}$

Specifications subject to change without notice

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