

**PRESENTATION** : equipped with special screw terminals compatible with high input and output currents (up to 50A), this half-brick type Buck-Boost mini regulator can reach a power of 2.8kW with an efficiency of 96%.

Capable of operating at constant voltage or constant current, this regulator simplifies the engineer's design work, because its input accepts any generator, provided it delivers a voltage between 8V and 60V, and even as low as to 6.5V (when already in operating mode).

In addition, the setting ① of the output voltage, from 0 to 60V (very simple), either manual with "0 to 5kΩ" "RVset" resistor or automatic with "0 to 10V" control, allows the supply of conventional or special loads at low voltage, or requiring a large variation of the applied voltage, from zero to  $V_{max} \leq 60V$ .

Moreover, the loads are safely powered, at variable or constant current, since the supply can be limited from 0 to 50A, thanks to a simple and linear adjustment ②, either manual by quasi-linear resistor "Riset" or automatic with a control by "0 to 10V".

For special applications, on request, the standard control voltage "0 to 10V" can be isolated, reduced, increased or shifted. Example: 4V to 8V (isolated or not) → 2V to 48V.

**INPUT VOLTAGE  $V_{in}$** : 8V to 60V ; 6.5V *min* after start ; ideal amplitude for the almost integral conversion, for example of the energy collected by any super capacitors charged at  $\leq 60V$ .

### INPUT CURRENT $i_{in}$

- $\leq 500mA$  at no-load, depending on  $V_{in}$  and  $V_{out}$  ; ( $< 2mA$  / "OFF")
- 50A max, in charge, regardless of  $V_{in}$

**OUTPUT VOLTAGE  $V_{out}$** : 0 to 60V (+ sense: optional ③B)

Manual setting by "0 to 5kΩ" RVset ①B or by "0 to 10V" voltage control ①A

**OUTPUT CURRENT  $i_{out}$** : variable at constant  $V_{out}$ , or constant, automatically, at variable  $V_{out}$  ; settable current limit: from 0 to 50A.

Manual limitation by Riset ②B or automatic linear limitation by "0 to 10V". ②A

**ISOLATION** : no; terminals "- $V_{in}$ " and "- $V_{out}$ " internally connected

### POWER

- input:  $V_{in}$  voltage x current 50A maximum (3kW max)
- output: input power x efficiency (2.88kW maximum)
- parallel mounting, up to 6 regulators: connect "i share" terminals

**LINE and LOAD**:  $10^{-2}$  of  $V_{out}$  and  $< -48mV / A$

**RESIDUAL** :  $\leq 300mV$  ; switching frequency:  $\approx 275kHz$

**RISE TIME** at full load: 40ms + 4ms/volt

**ON/OFF FUNCTION ③A**:  $\leq 0.8V$  for "ON" and  $\geq 3.5V$  for "OFF"; delay  $< 40ms$

### PROTECTIONS and AUTOMATIC FUNCTIONS

- UVP: below voltage  $< 6V$  on the input
- OVP: overvoltage 65V, on  $V_{in}$  or  $V_{out}$  (please reset)
- OCP: overcurrent 55A, on the input or output
- OTP: abnormal environment:  $> 85^{\circ}C$
- CCG: change from constant  $V_{out}$  to constant  $i_{out}$ , and vice versa

### THERMAL CHARACTERISTICS

- storage and operation:  $-50^{\circ}C$  to  $125^{\circ}C$  and  $-40^{\circ}C$  to  $+85^{\circ}C$
- thermal resistance of the case:  $7^{\circ}C / W$  ( $\frac{1}{2}$  brick type base)
- optional heatsink: 172 x 120 mm,  $1^{\circ}C / W$

### OTHER CHARACTERISTICS

- IP67 sealing; upon request: overmolded wires 50cm
- input and output capacitors: integrated in the housing

### CASE

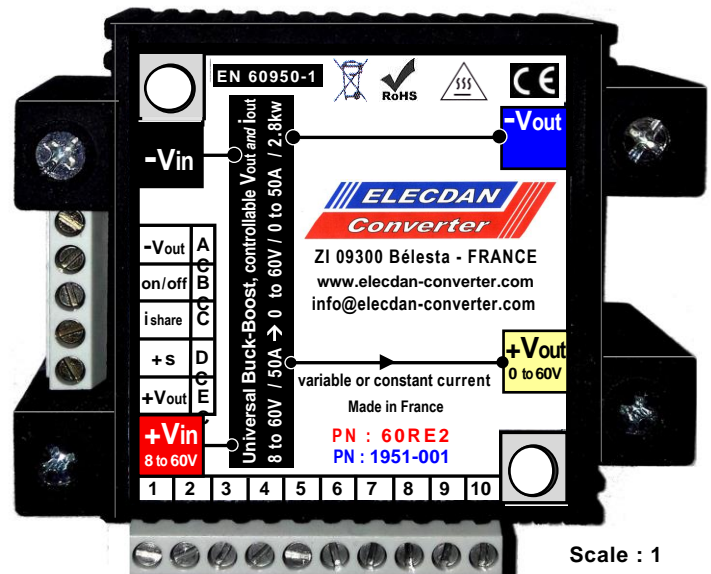
- 86 x 67 (or 86) x 30 mm (overall dimensions); weight: 330g
- screw terminal block: " $V_{in}$ " and " $V_{out}$ " (50mm<sup>2</sup>), choices and controls (1.8mm<sup>2</sup>)
- mounting: 2 holes  $\varnothing 3.2mm$  front; 2 M3 back; c.t.c. distances: 48.2 x 50.8 mm

### STANDARDS and SPECIFICATIONS

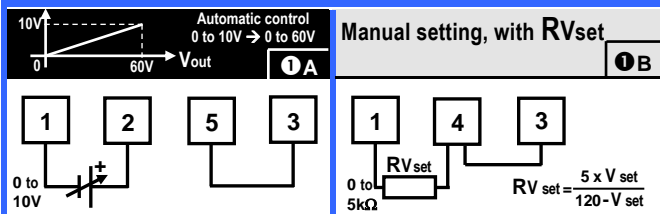
- EN / UL / CSA / 60950-1 / RoHS
- MTBF:  $> 10^6$  hours, base at  $45^{\circ}C$

Please consult us  
for quantity prices

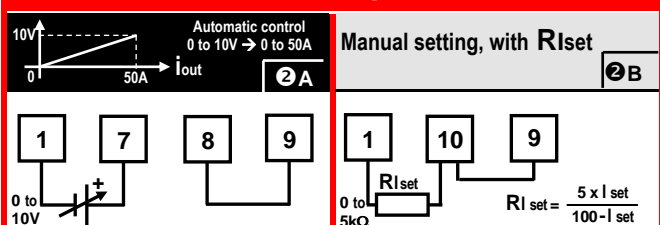
Please ask for our applications and advice datasheets



### ① Automatic linear or manual setting of $V_{out}$ (Vset)



### ② Automatic linear or manual setting of the current limitation $I_{set}$



### ③A (negative logic) on/off ← REMOTE → sensing ③B



Efficiency at full load	96%		92%		88%
V input	48V	24V	60V	12V	8V
V output	24V	48V	12V	60V	60V

Choice of 4 references, depending on the type of setting for  $V_{out}$  and  $i_{out}$   
External (see diagrams) / Built-in trimmer (axis 10 rounds  $\varnothing 3mm$ ) / Custom (factory setting)

Ref.	Voltages (V) input output	$i_{out}$ max (A)	Settings Vout (V) $i_{out}$ (A)	Type of settings	Case	Unit price excl tax (€)
60RE2	8 to 60 0 to 60	50	0 to 60 $\leq 50$	Ext / automatic	E4 / 30 / 15	
60RA	8 to 60 0 to 60	50	0 to 60 $\leq 50$	automatic	E4 / 30 / 15	
60Ri2	8 to 60 0 to 60	50	0 to 60 $\leq 50$	built-in "10 rounds"	E4 / 30 / 5	
60RC2	8 to 60 to be specified		in factory	custom	E4 / 30 / 5	
60RD...	8 to 60 functions to be specified			on demand	E4 / 30 / ..	

For additional informations : please see sheet "5040"

**Additional advantage** : even when not powered, this regulator bears any positive voltage up to 60V at its output, while absorbing only 0 to 4mA. This feature allows, for example, the direct charging of a battery, without the regular and energy-consuming intermediate non-return diode.