

# Features

## Regulated Converters

- built in active PFC
- Efficiency up to 88%
- Isolated Output 3kVAC / 1 min
- SCP, OLP Protection
- Operating Temperature Range -20°C to +60°C
- Universal Input 90-264VAC/120VDC-370VDC

**RECOM**  
AC/DC Converter

## RACG100

100 Watt  
Single  
Output



**UL**  
c **UL** **us**  
E196683

UL60950-1 Certified

### Description

These industrial grade power supplies have been designed to give many years of trouble-free life. Despite their low cost, they use high grade electrolytic capacitors and are certified to heavy industry performance levels, working reliably over an extended temperature and world-wide input voltage range. The RACG series are more compact than the standard industry size, yet offer higher performance with full output protection (SCP, OLP), active power factor correction and improved input surge, hold-up time and efficiency ratings. The power supplies can be mounted horizontally or vertically and are fully certified to CE, UL and Class B EMC standards. Typical uses are industrial, commercial and high reliability applications. The RACG series come with a 3 year warranty.

### Selection Guide

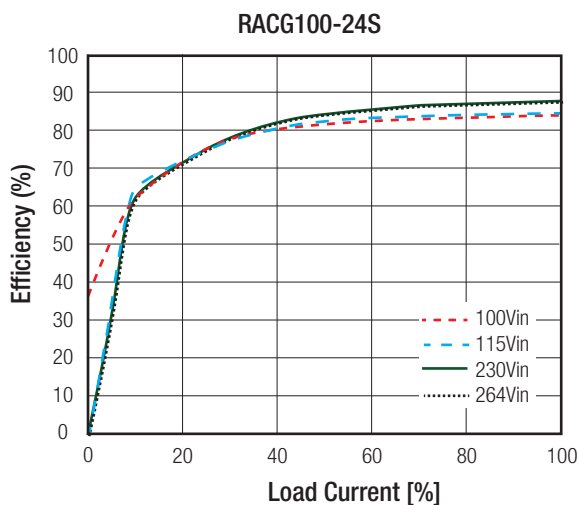
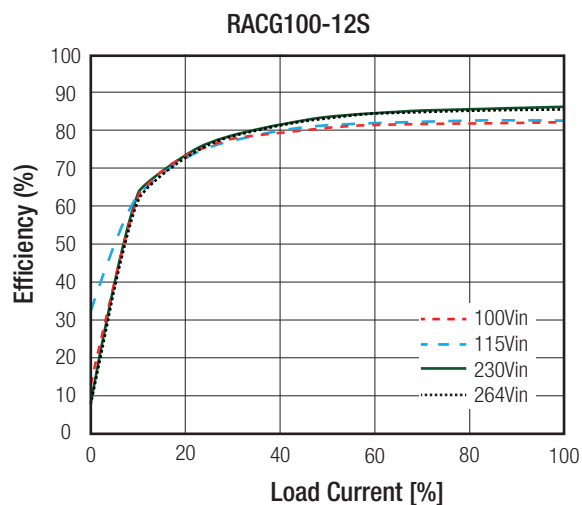
Part Number	nom. Input Voltage Range (VAC)	Input Current max. (A)	Output Voltage (VDC)	Adj. Output Voltage (VDC)	Output Current max. (A)	Efficiency (@230VAC) typ. (%)
RACG100-05S	120-240	1.5	5	3.3-5.5	20	84
RACG100-12S	120-240	1.5	12	10-15	8.5	87
RACG100-24S	120-240	1.5	24	21-27	4.5	88
RACG100-48S	120-240	1.5	48	43.2-52.8	2.2	88

### Specifications (measured at T<sub>a</sub>= 25°C, nominal input voltage (230VAC), full load and after warm-up)

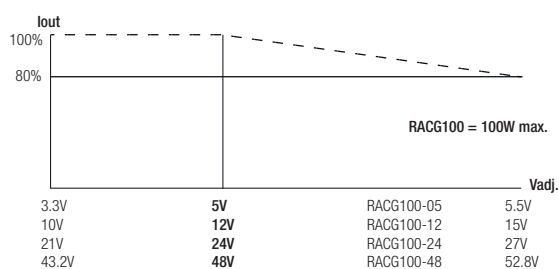
BASIC CHARACTERISTICS					
Parameter	Condition		Min.	Typ.	Max.
Input Voltage Range			90VAC 120VDC		264VAC 370VDC
Inrush Current	cold start, 115VAC cold start, 230VAC				30A 50A
No load Power Consumption				3W	
Input Frequency Range			47Hz		63Hz
Set-up time	115VAC 230VAC				4s 2s
Hold-up time	230VAC			20ms	
Output Voltage adjust				±10%	
Minimum Load				0%	
Power Factor	115VAC 230VAC			0.98 0.93	
Output Ripple and Noise <sup>(1)</sup>	0°C to +60°C	All		150mVp-p	
	-20°C to 0°C	5Vout, 12Vout, 24Vout		150mVp-p	
		48Vout		200mVp-p	
<b>Notes:</b>					
Note1: Measured @ 20MHz Bandwidth with a 0.1µF parallel capacitor.					
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**Specifications** (measured at  $T_a = 25^\circ\text{C}$ , nominal input voltage (115/230VAC), full load and after warm-up)

### Efficiency vs. Load



### V<sub>adj.</sub> Derating



### REGULATIONS

Parameter	Condition	Value
Output Voltage Accuracy	5V <sub>out</sub> , 12V <sub>out</sub>	±2% max.
	24V <sub>out</sub> , 48V <sub>out</sub>	±1% max.
Line Voltage Regulation	low line to high line, full load	±0.5% max.
Load Voltage Regulation	5V <sub>out</sub> , 12V <sub>out</sub>	±2% max.
	24V <sub>out</sub> , 48V <sub>out</sub>	±1% max.

### PROTECTIONS

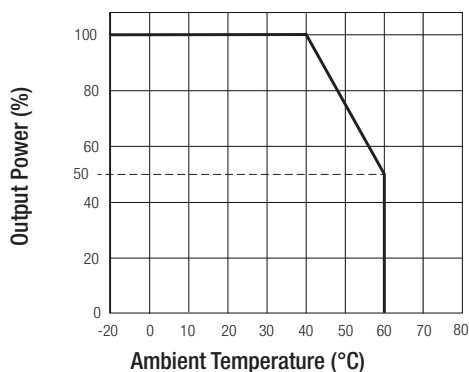
Parameter	Type	Value
Input Fuse	internally	T5A, slow blow
Short Circuit Protection (SCP)		continuous, Hiccup and auto recovery
Over Load Protection (OLP)		110% - 150% of rated output current, Hiccup and auto recovery
Isolation Voltage	I/P to O/P	3kVAC/ 1 minute
	I/P to Case	1.5kVAC/ 1 minute
	O/P to Case	500VAC/ 1 minute
Isolation Resistance		100MΩ min.
Leakage Current	I/P to O/P	0.25mA max.
	I/P to Case	3.5mA max.

**Specifications** (measured at  $T_a = 25^\circ\text{C}$ , nominal input voltage (115/230VAC), full load and after warm-up)

### ENVIRONMENTAL

Parameter	Condition	Value
Operating Temperature Range	with derating	$-20^\circ\text{C}$ to $+60^\circ\text{C}$
Temperature Coefficient		0.03%/°C
Operating Humidity	non-condensing	20% - 90%, RH max.
Moisture Protection		conformally coated PCB
Operating Altitude		5000m
MTBF	MIL-HDBK-217F, ground benign, $+25^\circ\text{C}$	$200 \times 10^3$ hours

### Derating Graph



### SAFETY AND CERTIFICATIONS

Certificate Type	Report / File Number	Standard
UL General Safety	E196683	UL60950-1
CAN/CSA General Safety	E196683	C22.2 No. 60950-1
Certificate Type (designed to meet)		Standard
IEC/EN General Safety		IEC/EN60950-1
EMC Compliance	Conditions	Standard / Criterion
EMI Standard	internal filter	EN55022, Class B
		FCC Part 15, Class B
Harmonic Current		EN61000-3-2, Class A

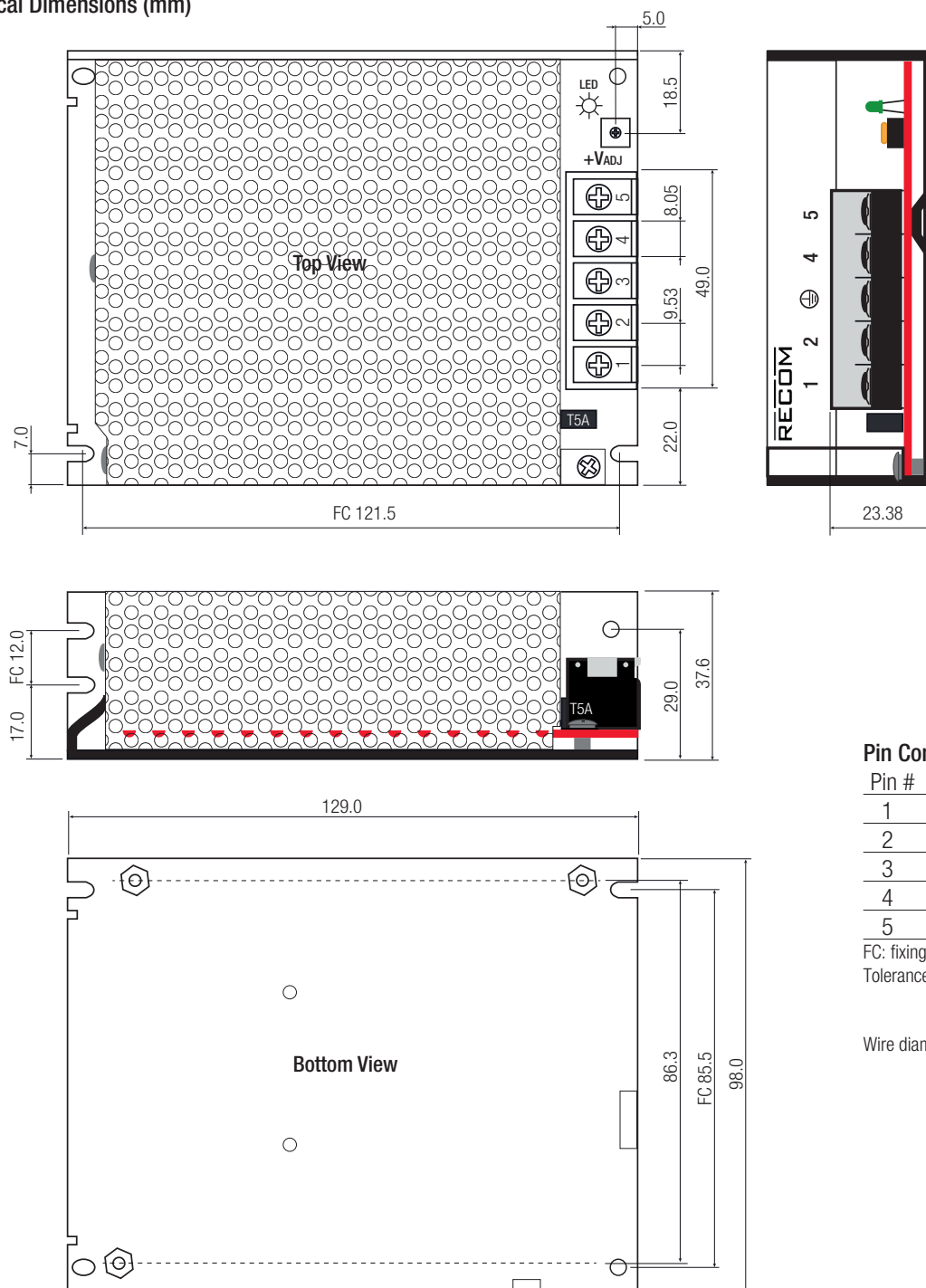
### DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Case Material		Aluminium
Package Dimension (LxWxH)		129.0 x 98.0 x 38.0mm
Package Weight		432g typ.

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**Specifications** (measured at  $T_a = 25^\circ\text{C}$ , nominal input voltage (115/230VAC), full load and after warm-up)

### Mechanical Dimensions (mm)



### Pin Connections

Pin #	Single
1	VAC in (L)
2	VAC in (N)
3	GND
4	-Vout
5	+Vout

FC: fixing center

Tolerance: xx.x=  $\pm 0.5\text{mm}$   
xx.xx=  $\pm 0.35\text{mm}$

Wire diameter: 0.75 to 3.0mm<sup>2</sup>

### PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	Cardboard box	138 x 100 x 45mm
Packaging Quantity		1pcs
Storage Temperature Range		-30°C to +85°C
Storage Humidity	non-condensing	10% - 90%, RH max.

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