Features

Regulated Converters

- Long 5 Year Warranty
- 2MOPP/250VAC
- Suitable for built in Class II Applications
- Wide Input Voltage Range (85-264VAC)
- Low Leakage Current (<75µA)
- 5000m Operation
- Active Power Factor Correction
- Connector Set available

RECOM
AC/DC Converter

RACM100

100 Watt Enclosed Case Style Single Output

Description

The RACM100 is a compact 3"x2" high efficiency AC/DC power supply with 2xMOPP safety approval for medical applications. These space saving enclosed power supplies have an universal input voltage range (85-264VAC), 4kVac isolation, require no minimum load and can be used at ambient temperatures of between -25°C and +85°C. The 12V, 15V, 24V or 48V output voltages are fully protected and have tolerances of less than ±0.2% over the entire input voltage range and less than ±0.5% over the entire load range. The RACM100 series is certified to medical safety standard IEC/ES/EN-60601-1 3rd Edition and feature BF rated outputs with less than 100µA leakage current. It has a built-in Class B EMI filter and comes with a five year warranty.

Selection Guide

Part Number	Input Voltage Range (VAC)	Output Voltage (VDC)	Output Current (A)	Input Power @ No Load (W)	Efficiency typ. (%)
RACM100-12S	85-264	12	8.34	0.3	91
RACM100-15S	85-264	15	6.67	0.3	92
RACM100-24S	85-264	24	4.17	0.3	92
RACM100-48S	85-264	48	2.09	0.3	91

2MOPP
250VAC

E314885

EN-55011 Certified
EN-55022 Certified
ES-60601 Certified
IEC/EN-60601 Certified

Specifications (measured at T_A= 25°C, 250VAC, full load and after warm-up)

BASIC CHARACTERISTICS				
Parameter	**Condition**	**Min.**	**Typ.**	**Max.**
Input Voltage		85VAC 120VDC		264VAC 370VDC
Input Current	115VAC, fulll load 230VAC, full load			1.15A 0.55A
Absolute max. Input Current	cold start, 230VAC			60A
Input Frequency	AC Input	47Hz		63Hz
Start-up Time				1 Second
Rise Time			20ms	
Hold up Time	115VAC, full load	16ms		
Minimum Load				0%
Power Factor		0.95		
Switching Frequency			60kHz	
Output Ripple and Noise (measured @ 20MHz BW)	12VDC, with 10µF/25V MLCC 15VDC, with 10µF/25V MLCC 24VDC, with 1µF/50V MLCC 48VDC, with 0.1µF/100V MLCC		120mVp-p 150mVp-p 160mVp-p 340mVp-p	

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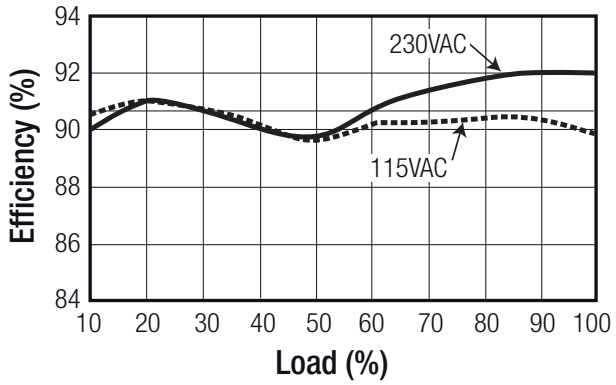
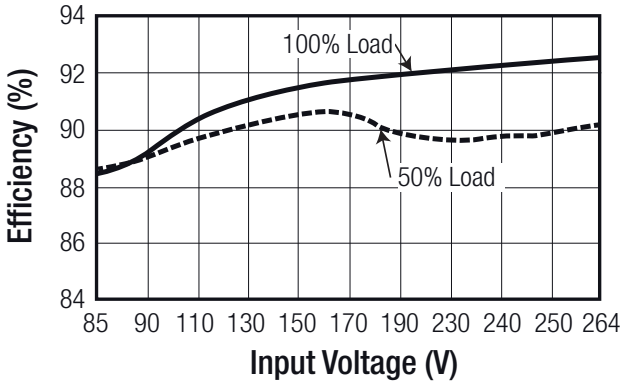
Refer to Applications Notes

Specifications (measured at T_A= 25°C, 250VAC, full load and after warm-up)

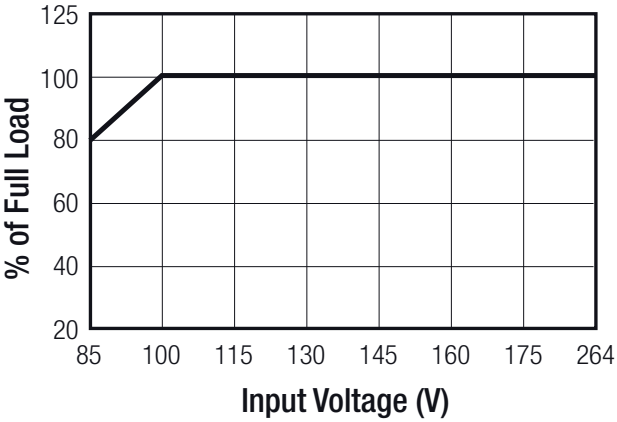
Efficiency vs. Load



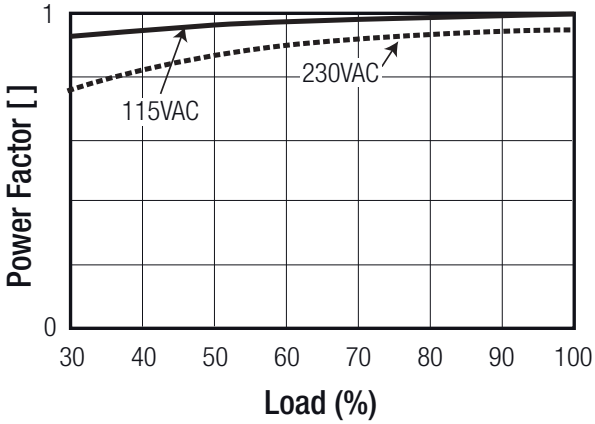
Efficiency vs. Input Voltage



Load vs. Input Voltage



Powr Factor vs. Load



REGULATIONS

Parameter	Condition	Type	Value
Output Voltage Accuracy	230VAC, full load		±1%
Line Voltage Regulation	low line to high line, full load		±0.2%
Load Voltage Regulation	0% to 100% load 10% to 100% load		±0.5% max. ±0.4% max.
Output Voltage Trim			±10%
Transient Peak Deviation	load step from 50% - 75% change at 2.5A/µs		3% Vout max.
Transient Recovery Time	load step from 50% - 75% change at 2.5A/µs		500µs typ.

PROTECTIONS

Parameter	Condition	Value
Input Fuse	internal line and neural	T3.15A / 250VAC, slow blow type
Short Circuit Protection (SCP)		continuous, auto-recovery
Over Load Protection (OLP)	% of Iout rated	Hiccup Mode, 115% min. / 150% ,ax.
Over Voltage Protection (OVP)	% of Vout nominal	Latch Mode, 115% min / 135% max.
Isolation Voltgage (2MOPP insulation)	I/P to O/P I/P to Chassis O/P to Chassis working voltage	4kVAC / 1 minunte 1.5kVAC / 1 minute 1.5kVAC / 1 minunte 250VAC / continuous

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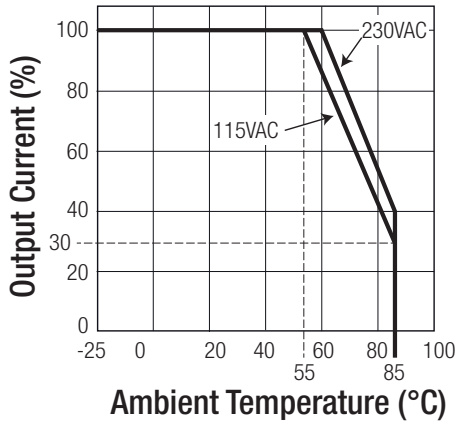
Specifications (measured at T_A= 25°C, 250VAC, full load and after warm-up)

Leakage Current	264VAC	75µA max.
Clearance Creepage	I/P to O/P I/P to O/P	6.5mm 8mm
Isolation Resistance	500VDC	100MΩ min.

ENVIRONMENTAL

Parameter	Condition	Value
Relative Humidity	non-condensing	5% to 95% RH
Temperature Coefficient		±0.02% / °C
Operating Temperature Range	with derating	-25°C to +85°C
Storage Temperature Range		-40°C to +85°C
Operating Altitude		5000m max.
MTBF (+25°C)	according to MIL-HDBK-217F, full load	7903 x 10^5 hours

Derating Graph



SAFETY AND CERTIFICATIONS

Certificate Type	Report / File Number	Standard
IEC/EN Medical Safety		IEC/EN-60601-1 Medical Report + ISO14971 Risk Assessment
ANSI/AAMI Medical Safety	E314885	ES60601-1
CAN/CSA Medical Safety	E314885	C22.2 No. 60601-1

Certificate Type (Environmental)	Condition	Standard / Criterion
ESD	Air ±8kV; Contact ±6kV	EN61000-4-2, Criteria A
Radiated Immunity	20V/m	EN61000-4-3, Criteria A
Fast Transient	±2kV	EN61000-4-4, Criteria A
Surge	DM ±1kV and CM ±2kV	EN61000-4-5, Criteria A
Conducted Immunity	20Vr.m.s	EN61000-4-6, Criteria A
Power Frequency Magnetic Field	10A/m	EN61000-4-8, Criteria A
Harmonic Current	full load	EN61000-3-2; Class A and D
Voltage Flicker		EN61000-3-3, PASS
Thermal Shock		MIL-STD-810F
Shock		IEC68-2-27
Vibration		IEC68-2-6
Dip and Interruptions, 230VAC 50Hz	30% 500ms 60% 100ms >95% 10ms >95% 5000ms	EN60601-1-2, Criteria A EN60601-1-2, Criteria A EN60601-1-2, Criteria A EN60601-1-2, Criteria B

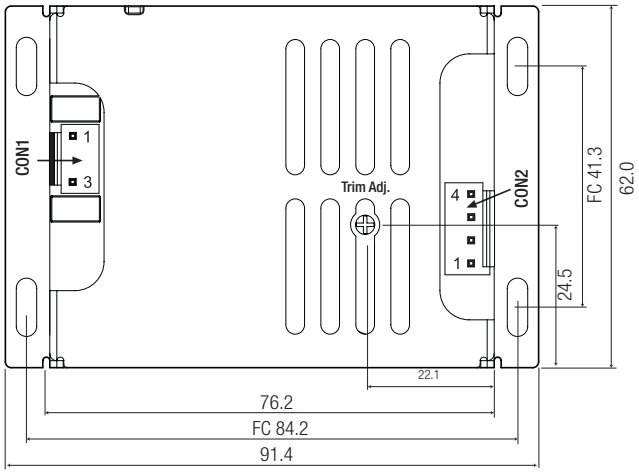
RACM100 Series

Specifications (measured at T_A= 25°C, 250VAC, full load and after warm-up)

DIMENSIONS and PHYSICAL CHARACTERISTICS		
Parameter	**Type**	**Value**
Material	Case	Aluminium
Package Dimensions (LxWxH)		91.4 x 62.0 x 39.2mm
Package Weight		210g
Packaging Dimensions (LxWxH)	Cardboard Box	418 x 258 x 105mm
Packaging Quantity	Cardboard Box	10pcs

Mechanical Dimensions (mm)

Top View



Side View

Bottom View

CON1 - Input

Pin1 Line
Pin3 Neutral

Mates with
JST housing: VHR-3N
JST crimp terminals: SVH-21T-P1.1

CON2 - Output

Pin1,2 -Vout
Pin3,4 +Vout

Mates with
JST housing: VHR-4N
JST crimp terminals: SVH-21T-P1.1

Tolerance: ±0.5mm
FC: fixing center