

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

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 |

Specifications (measured at TA= 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, full 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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RECOM
AC/DC Converter

RACM100

100 Watt
Enclosed
Case Style
Single Output

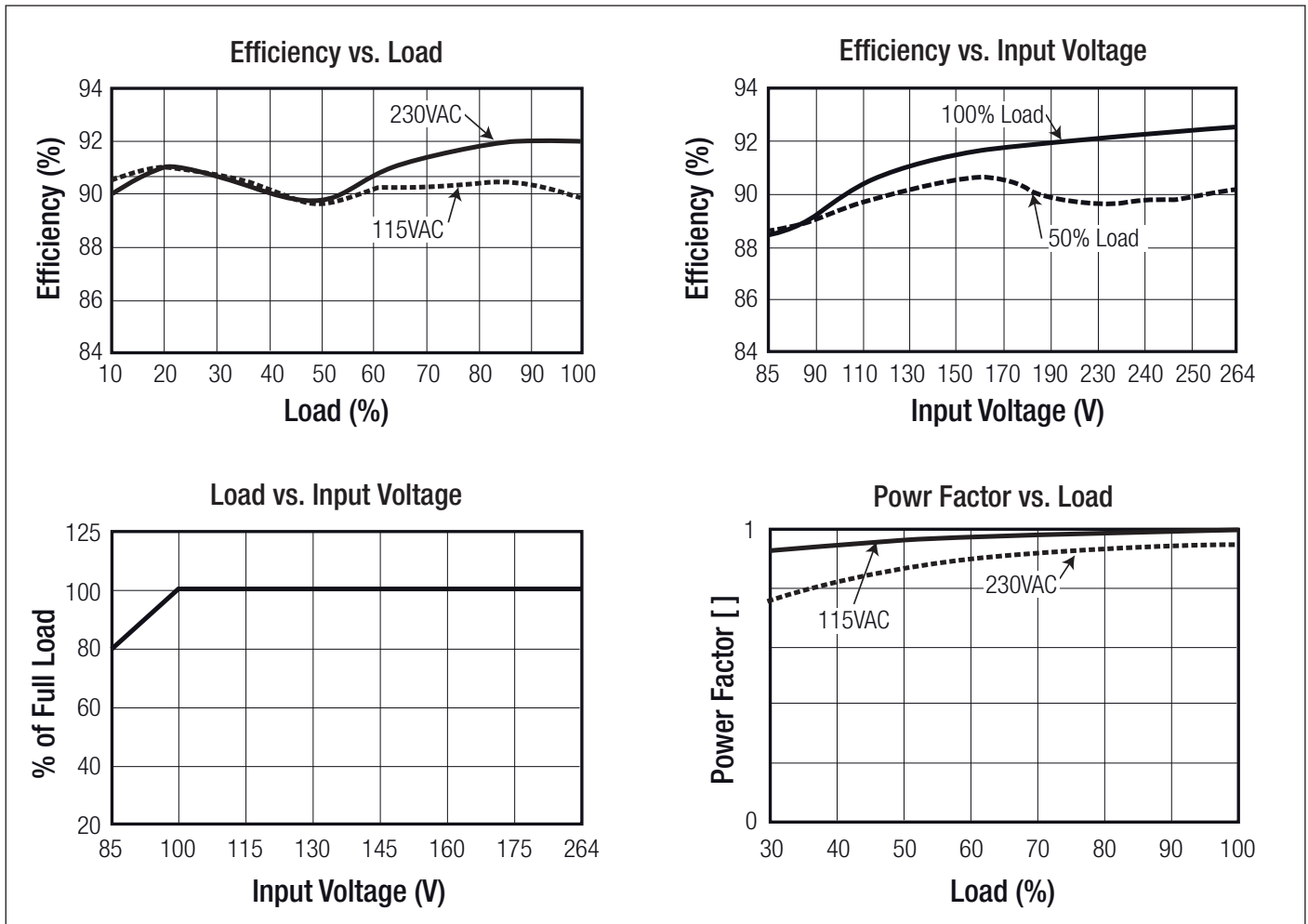


2MOPP
250VAC



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

Specifications (measured at $T_A = 25^\circ\text{C}$, 250VAC, full load and after warm-up)



| REGULATIONS | | | |
|--------------------------|--|------|------------------------|
| Parameter | Condition | Type | Value |
| Output Voltage Accuracy | 230VAC, full load | | $\pm 1\%$ |
| Line Voltage Regulation | low line to high line, full load | | $\pm 0.2\%$ |
| Load Voltage Regulation | 0% to 100% load | | $\pm 0.5\%$ max. |
| | 10% to 100% load | | $\pm 0.4\%$ max. |
| Output Voltage Trim | | | $\pm 10\%$ |
| Transient Peak Deviation | load step from 50% - 75% change at 2.5A/ μs | | 3% V_{out} max. |
| Transient Recovery Time | load step from 50% - 75% change at 2.5A/ μs | | 500 μs 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 I_{out} rated | Hiccup Mode, 115% min. / 150% ,ax. |
| Over Voltage Protection (OVP) | % of V_{out} nominal | Latch Mode, 115% min / 135% max. |
| Isolation Voltage (2MOPP insulation) | I/P to O/P | 4kVAC / 1 minunte |
| | I/P to Chassis | 1.5kVAC / 1 minute |
| | O/P to Chassis | 1.5kVAC / 1 minunte |
| | working voltage | 250VAC / continuous |

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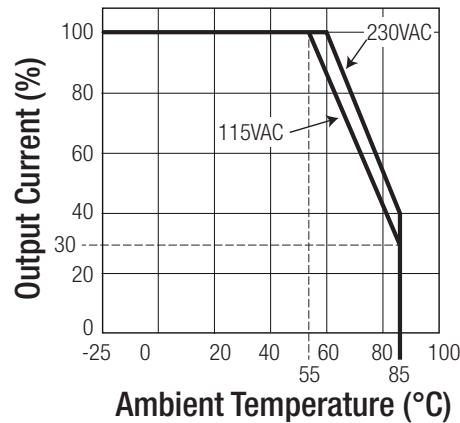
Specifications (measured at $T_A= 25^{\circ}\text{C}$, 250VAC, full load and after warm-up)

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

ENVIRONMENTAL

| Parameter | Condition | Value |
|--------------------------------|---------------------------------------|--|
| Relative Humidity | non-condensing | 5% to 95% RH |
| Temperature Coefficient | | $\pm 0.02\%$ / $^{\circ}\text{C}$ |
| Operating Temperature Range | with derating | -25°C to $+85^{\circ}\text{C}$ |
| Storage Temperature Range | | -40°C to $+85^{\circ}\text{C}$ |
| Operating Altitude | | 5000m max. |
| MTBF ($+25^{\circ}\text{C}$) | according to MIL-HDBK-217F, full load | 7903×10^5 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 $\pm 8\text{kV}$; Contact $\pm 6\text{kV}$ | EN61000-4-2, Criteria A |
| Radiated Immunity | 20V/m | EN61000-4-3, Criteria A |
| Fast Transient | $\pm 2\text{kV}$ | EN61000-4-4, Criteria A |
| Surge | DM $\pm 1\text{kV}$ and CM $\pm 2\text{kV}$ | 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 |

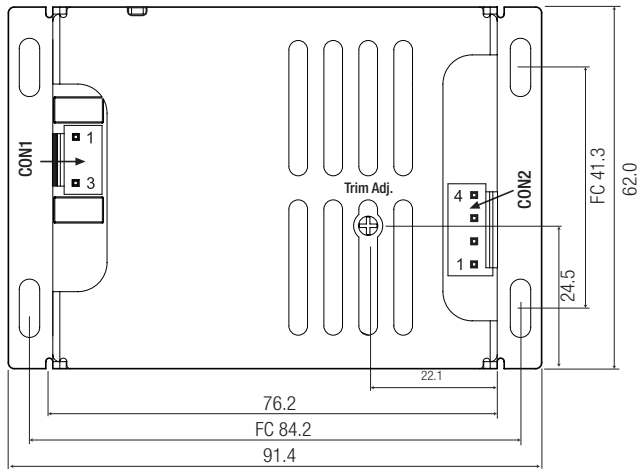
Specifications (measured at $T_A = 25^\circ\text{C}$, 250VAC, full load and after warm-up)

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



CON1 - Input

- Pin1 Line
- Pin3 Neutral

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

Side View



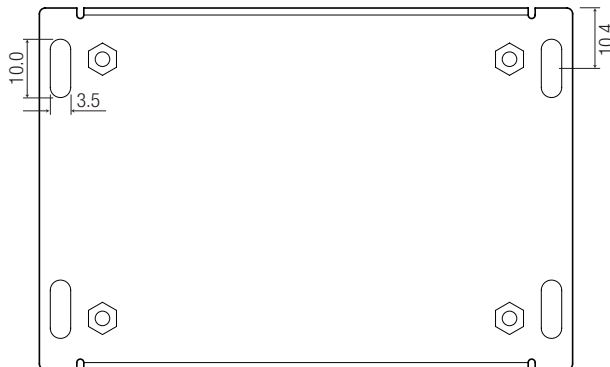
CON2 - Output

- Pin1,2 -Vout
- Pin3,4 +Vout

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

Tolerance: $\pm 0.5\text{mm}$
FC: fixing center

Bottom View



The product information and specifications are subject to change without prior notice. All products are designed for non-safety critical commercial and industrial applications. The buyer agrees to implement safeguards that anticipate the consequences of any failures that might cause harm, loss of life and/or property damage.