# **Features**

# Regulated Converters

- 60 Watt Open Frame AC-DC Class II Power Supply
- Universal Input Voltage Range
- compact 4" x 2" size
- 3kVAC Isolation
- OCP, OVP, SCP
- Standby Power ErP conform (<0.5W)</li>

#### **Description**

The RAC60/OF series offers compact AC/DC open frame power supplies with universal AC input (90-265VAC) and fully protected DC outputs which are trimmable to compensate for voltage drops on the output connections. The power supplies are CB, UL, and CE certified and ErP conform. Uses include industry controls, test and measurement systems and energy efficient products.

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|------|-------|-------|
|      |       |       |

| Part<br>Number | Input<br>Range<br>(VAC) | Output<br>Voltage<br>(VDC) | Output<br>Current Range<br>(A) | Voltage<br>Adj. Range *<br>(V) | Output<br>Power<br>(W) | Efficiency<br>typ. |
|----------------|-------------------------|----------------------------|--------------------------------|--------------------------------|------------------------|--------------------|
| RAC60-05S/0F   | 90-264                  | 5                          | 0-10                           | 4.5-5.5                        | 50                     | 80                 |
| RAC60-12S/0F   | 90-264                  | 12                         | 0-5                            | 10-13                          | 60                     | 83                 |
| RAC60-15S/0F   | 90-264                  | 15                         | 0-4                            | 13.5-18                        | 60                     | 84                 |
| RAC60-24S/0F   | 90-264                  | 24                         | 0-2.5                          | 22-27                          | 60                     | 85                 |

<sup>\*</sup> refer to "Package Style and Pinning"

#### Specifications (typical at 25°C and 230VAC)

| Input Voltage Range                                 |                         | 90-265VAC or 127-370VDC           |
|---|-------------------------|-----------------------------------|
| Rated Power   |                         | 60 Watts max.                     |
| Input Frequency Range (for AC Input)                |                         | 47-63Hz                           |
| Input Current (full load)                           | 115VAC                  | 1.5A max.                         |
|   | 230VAC                  | 1A max.                           |
| Inrush Current (Cold Start)                         | 115VAC                  | 30A typ.                          |
|   | 230VAC                  | 60A typ.                          |
| No Load Power Consumption                           |                         | <0.5W                             |
| Start-up Time (at cold first start)                 | 115VAC/230VAC           | 500ms                             |
| Rise Time   | Full Load               | <30ms                             |
| Hold Time   | 115VAC, Full Load       | 13ms typ.                         |
|   | 230VAC, Full Load       | 60ms typ.                         |
| Leakage Current                                     | 240VAC                  | <0.75mA                           |
| Output Voltage Accuracy                             | 24VDC                   | ±1%                               |
| (includes Line-, Load-regulation and Set-up Toleran | ce) 05, 12, 15VDC       | ±2%                               |
| Output Ripple and Noise (20MHz limited)             | 5VDC                    | 80mVp-p max.                      |
|   | 12VDC                   | 120mVp-p max.                     |
|   | 15VDC                   | 150mVp-p max.                     |
| (measured with 0.1µF & 47µF parallel capacitor)     | 24VDC                   | 200mVp-p max.                     |
| Isolation Voltage                                   | I/P to O/P              | 3kVAC / 1 minute                  |
|   | I/P to FG               | 1.5kVAC / 1 minute                |
|   | O/P to FG               | 0.5kVAC / 1 minute                |
| Isolation Resistance                                | 500VDC                  | 100 MΩ                            |
| Short Circuit Protection                            |                         | Hiccup Mode, Automatic Restart    |
| Over Voltage Protection                             | 5VDC                    | 5.75-6.5VDC                       |
|   | 12VDC                   | 13.5-15VDC                        |
|   | 15VDC                   | 16.9-18.75VDC                     |
| Latch Mode, re-power on to recover                  | 24VDC                   | 27-30VDC                          |
| Over Voltage Category                               |                         | TBD                               |
| Over Load Protection 115-                           | 150% rated output power | r, Hiccup Mode, Automatic Restart |

# **POWERLINE**

AC/DC-Converter with 3 year Warranty



# 60 Watt Single Output Open Frame







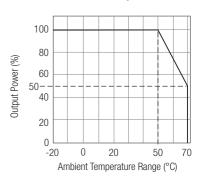


CB-Report UL-60950-1 (Pending) EN-60950-1 (Pending) EN-55022 Certfied EN-55024 Certified

RAC60/OF

# **Derating Graph**

(Ambient Temperature)



**Refer to Application Notes** 

continued on next page

# **POWERLINE**

# AC/DC-Converter

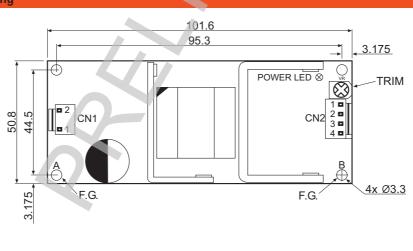
# RAC60-xx/OF Series

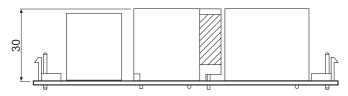
| <b>Specifications</b> (typical at 25°C and 23 | 30VAC)   |                       |   |
|---|--|-----------------------|---|
| Operating Temperature Range                   | Full Load without derating   |                       | -20°C to +50°C                              |
|   | with derating  |                       | -20°C to +70°C                              |
| Storage Temperature Range                     |  |                       | -40°C to +80°C                              |
| Operation Humidity                            | non-condensing   |                       | 20% - 90% RH                                |
| Storage Humidity                              |  |                       | 10% - 90% RH                                |
| Vibration                                     |  |                       | 10-500Hz, 2G, 10 Min. along X, Y and Z      |
| Weight  |  |                       | 145g  |
| Dimensions (LxWxH)                            |  |                       | 101.6 x 50.8 x 30mm                         |
| Package Quantity                              |  |                       | 30pcs / carton                              |
| Package Dimensions Carton (LxWxH)             |  |                       | 325 x 270 x 220mm                           |
| MTBF  | (using MIL-HDBK-217F, 25°C)  |                       | >450 x 10 <sup>3</sup> hours                |
| Certifications: (designed to meet)            |  |                       |   |
| General Safety                                |  |                       | UL-60950-1 2nd                              |
|   |  |                       | EN-60950-1 2nd                              |
| EMC   | Conducted and Radiated   | Report: HA080035-SCCE | EN55022, Class B                            |
|   | Immunity   | Report: HA080035-SCCE | EN55024                                     |
|   |  | Report: HA080035-SBFD | FCC, Part 15, Class B                       |
|   | Harmonics  | Report: HA080035-SCCE | EN61000-3-2                                 |
|   |  |                       | EN61000-3-3                                 |
|   |  |                       | EN61000-4-2, 3, 4, 5, 6, 8, 11, Critertia A |
|   | Emission   | Report: HA080035-SCCE | EN61000-6-3                                 |
| ErP   | complies to European Directive for Energy Related Products 2004/125/EC |                       |   |
| Notes   |  |                       |   |

#### **Package Style and Pinning**

Note1:

Mounting holes A, B must be grounded for EMI (Filter Ground)





| AC Input Connector (CN1): WST M3-139606S or equivalent |                |                   |  |
|--|----------------|-------------------|--|
| Pin#   | Terminal       | Mating Housing    |  |
| 1 AC/N   | WST 139606PS-2 | WST P4-139606PS-2 |  |
| 2 AC/L   | or equivalent  | or equivalent     |  |

| DC Output Connector (CN2): WST M4-139606 or equivalent |                |                   |  |
|--|----------------|-------------------|--|
| Pin#   | Terminal       | Mating Housing    |  |
| 1, 2 V+  | WST 139606PS-2 | WST P4-139606PS-2 |  |
| 2, 3 V-  | or equivalent  | or equivalent     |  |

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 damage property.