

# Features

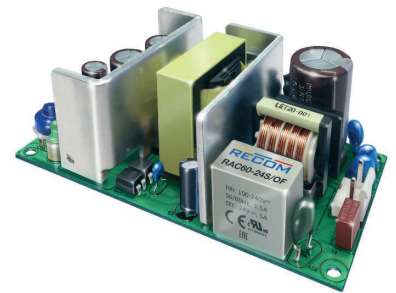
# Regulated Converter

- Connector set available
- Class II power supply
- Universal input voltage range
- Compact 4" x 2" size
- 3kVAC Isolation
- OCP, OVP, SCP
- Standby power ErP conform (<0.5W)



# RAC60/OF

**60 Watt  
Single  
Output,  
Open Frame**



CAN/CSA-C22.2 No. 60950-1 certified  
 UL no. 60950-1 certified  
 IEC/EN60950-1 certified  
 EN55032 compliant  
 EN55024 compliant

## Description

The RAC60/OF series offers compact AC/DC open frame power supplies with universal AC input (90-264VAC) and fully protected DC outputs which are trimmable to compensate for voltage drops on the output connections. The power supplies are UL, and CE certified and ErP conform. Uses include industry controls, test and measurement systems and energy efficient products.

## Selection Guide

Part Number	Input Voltage Range [VAC]	Output Current Range [A]	Output Voltage [VDC]	Voltage Adj. Range [VDC]	Output Power [W]	Efficiency typ. (1) [%]	Max. Cap. Load (2) [µF]
RAC60-05S/OF	90-264	0-10	5	4.8-5.2	50	80	18800
RAC60-12S/OF	90-264	0-5	12	11.4-12.6	60	83	18800
RAC60-15S/OF	90-264	0-4	15	14.2-16	60	84	12700
RAC60-24S/OF	90-264	0-2.5	24	23-25	60	85	4700

### Notes:

- Note1: Efficiency is tested at nominal input and full load at +25°C ambient  
 Note2: Max Cap Load is tested at nominal input and full resistive load

## Model Numbering



### Ordering Examples:

- RAC60-12S/OF 12Vout Single Output Open Frame  
 RAC60-24S/OF 24Vout Single Output Open Frame

## Specifications (measured @ Ta= 25°C, nom. Vin)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range (3,4)	nom. Vin = 230VDC	90VAC 127VDC		264VAC 370VDC
Input Current	115VAC 230VAC			1.5A 1A
Inrush Current	cold start at 25°C	115VAC 230VAC	30A 60A	
No load Power Consumption				0.5W
Input Frequency Range	AC Input	47Hz		63Hz
Start-up Time	115VAC/230VAC		500ms	

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### Specifications (measured @ Ta= 25°C, nom. Vin = 230VAC)

BASIC CHARACTERISTICS					
Parameter	Condition		Min.	Typ.	Max.
Rise Time					30ms
Hold-up Time	115VAC 230VAC			13ms 60ms	
Internal Operating Frequency				65kHz	
Output Ripple and Noise <sup>(5)</sup>	20MHz BW	5VDC 12VDC 15VDC 24VDC			80mVp-p 120mVp-p 150mVp-p 200mVp-p
<b>Notes:</b> Note3: The products were submitted for safety files at AC-Input operation Note4: Refer to "Line Derating" Note5: Measurements are made with a 1.0µF MLCC across output (low ESR)					

REGULATIONS		
Parameter	Condition	Value
Output Accuracy <sup>(6)</sup>	5, 12, 15VDC 24VDC	±2.0% max. ±1.0% max.
<b>Notes:</b> Note6: Includes Line-, Load Regulation and Set-up Tolerance		

PROTECTIONS			
Parameter	Type		Value
Short Circuit Protection (SCP)			Hiccup mode, automatic restart
Over Voltage Protection (OVP)	re-power on to recover	5VDC 12VDC 15VDC 24VDC	latch mode 5.75-6.5VDC 13.5-15.0VDC 16.9-18.75VDC 27.0-30.0VDC
Over Current Protection (OCP)	rated output power		115% - 150%, Hiccup mode, automatic restart
Isolation Voltage	tested for 1 minute	I/P to O/P I/P to FG O/P to FG	3.0kVAC 1.5kVAC 0.5kVAC
Isolation Resistance	500VDC		100MΩ
Leakage Current	240VAC		0.75mA max.
<b>Notes:</b> Note7: Refer to local safety regulations if input over-current protection is also required			

ENVIRONMENTAL			
Parameter	Condition		Value
Operating Temperature Range	@ natural convection 0.1m/s	full load	-20°C to +50°C
		refer to derating graph	-20°C to +70°C
Operating Humidity	non-condensing		20% - 90% RH max.

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**Specifications** (measured @ Ta= 25°C, nom. Vin = 230VAC)

ENVIRONMENTAL		
Parameter	Condition	Value
Vibration		10-500Hz, 2G, 10 Min. along X, Y and Z
MTBF	according to MIL-HDBK-217F, G.B. +25°C	>450 x 10 <sup>3</sup> hours

Derating Graph	Line Derating
(@ Chamber and natural convection 0.1 m/s)	

SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E196683	CAN/CSA-C22.2 No. 60950-1 UL No. 60950-1
	11037315 001	EN60950-1:2006 + A2:2013 IEC60950-1:2005 2nd Edition + A2:2013
EAC Safety of Low Voltage Equipment	RU-AT.49.09571	TP TC 004/2011
RoHS2		RoHS-2011/65/EU + AM-2015/863

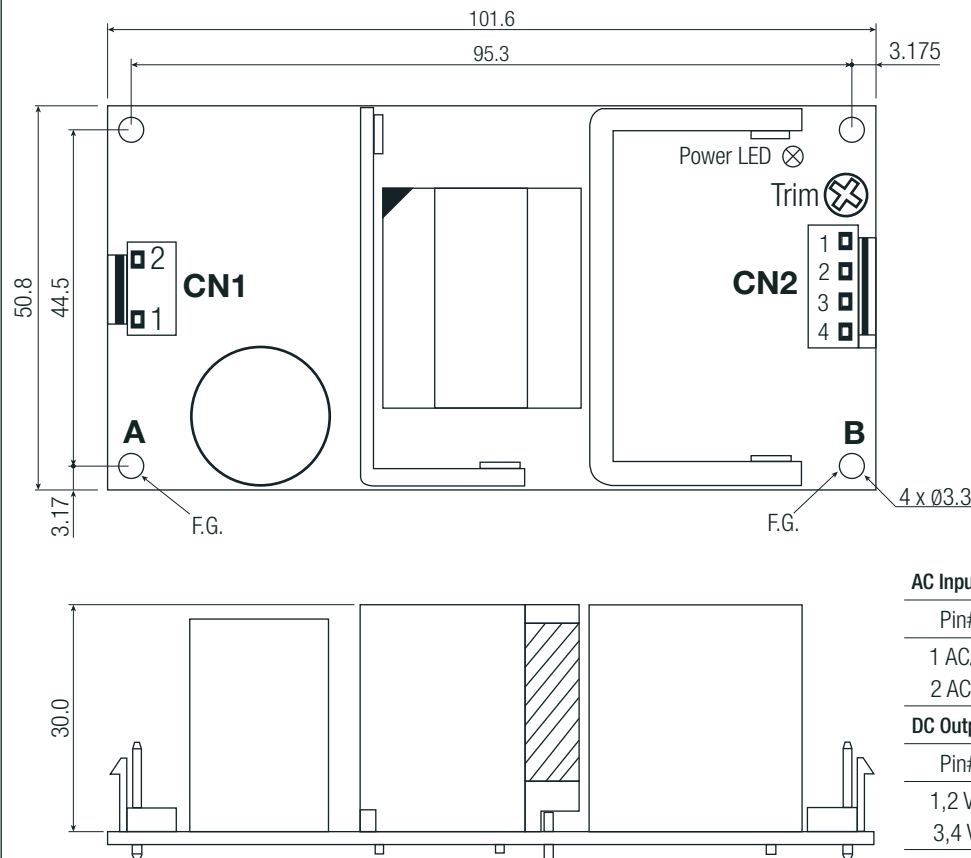
EMC Compliance <sup>(8)</sup>	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment – Emission Requirements		EN55032; Class B
Information technology equipment - Immunity characteristics - Limits and methods of measurement		EN55024
ESD Electrostatic Discharge Immunity Test	air ±2.0, 4.0, 8.0kV contact ±2.0,4.0kV	IEC61000-4-2:2008; Criteria A
Radiated, Radio-Frequency, Electromagnetic Field Immunity Test	3V/m	IEC61000-4-3:2006 + A2:2010; Criteria A
Fast Transient and Burst Immunity	AC Power Port: ±1.0kV	IEC61000-4-4:2012; Criteria A
Surge Immunity	AC Power Port: L-N ±0.5, 1.0kV L-PE, N-PE ±0.5, 1, 2.0kV	IEC61000-4-5:2014; Criteria A
Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields	AC Power Port 3.0V	IEC61000-4-6:2013; Criteria A
Power Magnetic Field Immunity	50Hz, 1A/m	IEC61000-4-8:2009; Criteria A
Voltage Dips and Interruption	Voltage Dips > 95%	IEC61000-4-11:2004; Criteria A
	Voltage Dips > 30%	IEC61000-4-11:2004; Criteria B
	Voltage Interruptions > 95%	IEC61000-4-11:2004; Criteria B
Limits of Harmonic Current Emissions		EN61000-3-2:2014, Class A
Limits of Voltage Fluctuations & Flicker		EN61000-3-3:2013
Limitations on the amount of electromagnetic interference allowed from digital and electronic devices		47 CFR FCC Part 15 Subpart B 2010-01-07, Class B

**Specifications** (measured @ Ta= 25°C, nom. Vin = 230VAC)

**DIMENSION AND PHYSICAL CHARACTERISTICS**

Parameter	Type	Value
Dimension (LxWxH)		101.6 x 50.8 x 30.0mm
Weight		145.0g typ.

**Dimension Drawing (mm)**



**AC Input Connector (CN1)**

Pin#	Terminal	Mating Housing
1 AC/N	WST I39606PS-2	WST P3-I39606
2 AC/L	or equivalent	or equivalent

**DC Output Connector (CN2)**

Pin#	Terminal	Mating Housing
1,2 V+	WST I39606PS-2	WST P4-I39606
3,4 V-	or equivalent	or equivalent

Detail information about the connectors on [www.wst.com.tw](http://www.wst.com.tw)

**Notes:**

Note9: Mounting holes A,B must be grounded for EMI (Filter Ground)

**PACKAGING INFORMATION**

Parameter	Type	Value
Packaging Dimension (LxWxH)	carton	325.0 x 270.0 x 220.0mm
Packaging Quantity		30pcs
Storage Temperature Range		-40°C to +80°C
Storage Humidity	non-condensing	10% - 90% RH max.

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