

Features

Regulated Converters

- 40mW max. No Load Power Consumption
- High Efficiency up to 76%
- Isolated Output 3kVAC / 1 min
- SCP, OVP Protection
- Wide Operating Temperature Range:
-40°C to +85°C
- Universal Input 85-305VAC

Description

The modules of the RAC03-SER/277 series are regulated AC/DC converters with 3kVAC isolation and a round, flat shape. This series has been designed to offer low stand-by consumption and an ultra-wide input voltage range. Uses include a variety of applications in building automation, security systems and communication systems.

Selection Guide

Part Number	Input Voltage Range (VAC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)	Max. Capacitive Load
RAC03-3.3SER/277	85-305	3.3	900	68	22000µF
RAC03-05SER/277	85-305	5.0	600	70	7500µF
RAC03-12SER/277	85-305	12	250	74	1000µF
RAC03-24SER/277	85-305	24	125	76	200µF

Specifications (measured at TA= 25°C, nominal input voltage, full load and after warm-up)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range		85VAC 120VDC		305VAC 430VDC
Input Current	full load, 115VAC full load, 230VAC		70mA 45mA	
absolute max. Input Current	cold start at 25°C, 115VAC cold start at 25°C, 230VAC			15A 30A
No load Power Consumption	85-305VAC, 47-440Hz			40mW
Input Frequency	AC Input	47Hz		440Hz
Leakage Current	85-305VAC, 47-440Hz			10µA
Hold-up time	full load		18ms	
Operating Frequency	100% load at nominal Vin		55kHz	
Efficiency			see Selection Guide	
Minimum Load			10%	
Output Ripple and Noise	3.3Vout all others		250mVp-p 200mVp-p	

RECOM
AC/DC Converter

RAC03-SER/277

**3 Watt
Single
Output**



UL
E224736

Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to Application Notes

Refer to Applications Notes

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

REGULATIONS		
Parameter	Condition	Value
Output Voltage Tolerance ⁽²⁾	3.3Vout 5Vout 12, 24Vout	$\pm 4\%$ typ. / $\pm 8\%$ max. $\pm 3.5\%$ typ. / $\pm 5\%$ max. $\pm 3\%$ typ. / $\pm 4\%$ max.
Line Voltage Regulation	low line to high line, full load	$\pm 0.7\%$ typ. / $\pm 1\%$ max.
Load Voltage Regulation	10% to 100% load; 3.3Vout 10% to 100% load; 5Vout 10% to 100% load; 12, 24Vout	$\pm 5.5\%$ typ. / $\pm 9\%$ max. $\pm 5\%$ typ. / $\pm 7.5\%$ max. $\pm 4\%$ typ. / $\pm 5.5\%$ max.
Notes: Note2: Includes initial voltage accuracy, thermal drift, line regulation and load regulation at rated input voltage and load conditions.		

PROTECTIONS		
Parameter	Type	Value
Short Circuit Protection (SCP)		continuous, automatic recovery
Over Voltage Protection (OVP)	Zener Diode clamp	120% - 190%
Over Current Limit		105% - 150%
Isolation Voltage		3kVAC / 1 Minute
Isolation Resistance		1G Ω min.

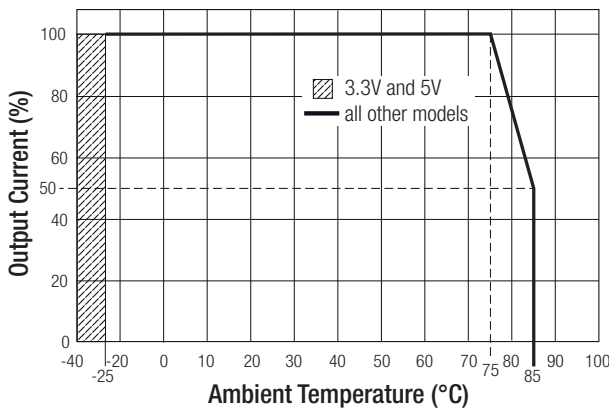
ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range	230VAC, natural convection and with derating	-40°C to +85°C
Storage Temperature Range		-40°C to +85°C
Humidity	non-condensing	95%, RH max.
MTBF ⁽³⁾	MIL-HDBK-217F, 115VAC, +25°C MIL-HDBK-217F, 230VAC, +25°C	3554 x 10 ⁶ hours 3219 x 10 ⁶ hours

Notes:

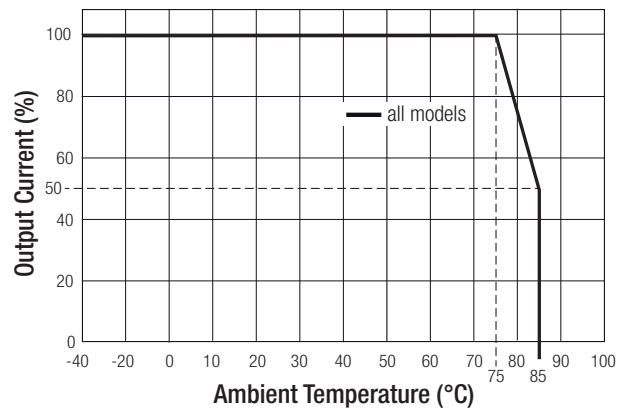
Note3: MTBF is referring RAC03-05SER/277

Derating Graph

@ 115VAC



@ 230VAC



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

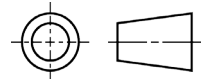
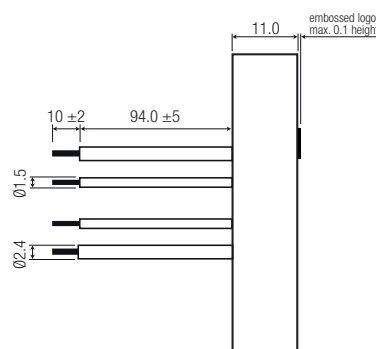
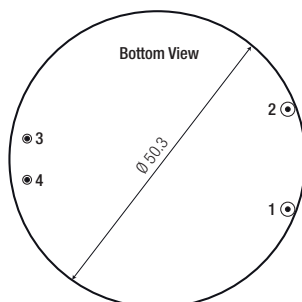
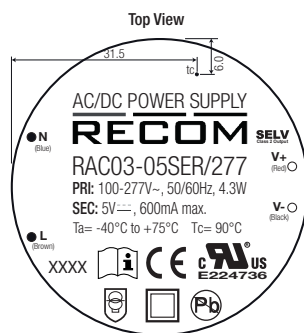
SAFETY AND CERTIFICATIONS

Certificate Type	Report / File Number	Standard
EN General Safety	SPCLVD1208051	EN-60950-1, 2nd Edition
UL General Safety	E224736	UL-60950-1, 2nd Edition
Certificate Type (Environmental)	Report / File Number	Standard / Criterion
ESD		EN61000-4-2, Criteria B
Radiated Immunity		EN61000-4-3, Criteria A
Fast Transient		EN61000-4-4, Criteria B
Surge		EN61000-4-5, Criteria B
Conducted Immunity		EN61000-4-6, Criteria A
Voltage dips and variations		EN61000-4-8, Criteria A
Voltage flicker		EN-61000-3-3
EMI Standard	Report: 1502CE17	EN55022, Class B EN55024

DIMENSIONS and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	Case Potting	UL94V-0, black plastic UL94V-0, Silicone
Dimensions (LxWxH)		50.3 x 50.3 x 11.0mm
Weight		41g typ.
Packaging Dimensions (LxWxH)	Tube	520 x 32 x 27mm
Packaging Quantity		12 pcs.

Mechanical Dimensions (mm)



Wired Connections

Wired Color	Type	Single
1, brown	UL-1015, AWG#22	+Vin (L)
2, blue	UL-1015, AWG#22	-Vin (N)
3, red	UL-1430, AWG#22	+Vout
4, black	UL-1430, AWG#22	-Vout

Tolerance: $\pm 0.5\text{mm}$

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.