



## AC-DC POWER SUPPLIES

### UNIVERSAL INPUT RANGE, FULL-BRICK, UP TO 500 WATTS

RUGGED ENVIRONMENTS AND INDUSTRIAL APPLICATIONS  
*RONUI500 SERIES*

#### FEATURES

- 3,000Vac Reinforced Insulation
- No Minimum Load Required
- Power Good Signal
- Remote ON/OFF
- Current Share Function
- Low Standby Power
- Over Current Protection
- Over Temperature Protection
- Over Voltage Protection
- Short Circuit Protection
- OVC III
- Safety Meets: IEC/ EN/ UL 62368-1
- RoHS and REACH Compliant

#### SELECTION GUIDE

All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

Input Range Vac	Output Voltage Vdc	Output Current @ 230VAC Conduction Cooling A	Input Power @ No Load W	Efficiency %	Maximum Capacitor Load µF	Model Number
85 ~ 264	12	42	0.8	91	16,000	RONUI500-12S
85 ~ 264	15	33.5	0.8	91	10,000	RONUI500-15S
85 ~ 264	24	21	0.8	93	2,000	RONUI500-24S
85 ~ 264	28	18	0.8	93	1,000	RONUI500-28S
85 ~ 264	48	10.5	0.8	93	470	RONUI500-48S
85 ~ 264	54	9.4	0.8	93	470	RONUI500-54S

#### LOAD SHARE OPTIONS:

- **None:** Standard-No Suffix
- **Load Share:** Use Suffix "S"

#### PREFIX:

- **For Enclosed Type, Use Pre-fix RECNUI500**

## RONUI500 SERIES

Input Specifications			Output Specifications		
Operating input voltage range	85 Min., 264 Max.	AC input	Output power, W	500 Max.	Conduction cooling @ 230VAC*
	88 Min., 370 Max.	DC input	Voltage accuracy, %	-1 Min., 1 Max.	230VAC and Full Load
Input frequency, Hz	47 Min., 63 Max	AC input	Line regulation, %	-0.2 Min., 0.2 Max.	Low Line to High Line at Full Load
			Load regulation, %	-0.5 Min., 0.5 Max.	No Load to Full Load
Input current, A	6.3 Max.	100VAC and Full Load		-0.4 Min., 0.4 Max.	10% Load to 90% Load
	2.7 Max.	240VAC and Full Load	Voltage adjustability, %	-10 Min., 10 Max.	Maximum output deviation is inclusive of remote sense
No load input factor, W	0.8 Typ.	230VAC		-5 Min., 5 Max.	Only For Load Share Models (-S suffix)
			Remote sense, %	10 Max.	% of Vout(nom), If remote sense is not being used, Sense pins should be connected to corresponding polarity OUTPUT pins.
Power factor	0.9 Min.	230VAC and Full Load	Minimum load, %	0 Typ.	
			Ripple and noise, mVp-p		Measured by 20MHz bandwidth
Start up time, ms	2,000 Max.			200 Typ.	With a 1 $\mu$ F/50V 1206 X7R MLCC, 12Vout
				200 Typ.	With a 1 $\mu$ F/50V 1206 X7R MLCC, 15Vout
Rise time, ms	20 Typ.			240 Typ.	With a 1 $\mu$ F/50V 1206 X7R MLCC, 24Vout
				280 Typ.	With a 1 $\mu$ F/50V 1206 X7R MLCC, 28Vout
Hold up time, ms	16 Typ.	115VAC and Full Load		480 Typ.	With a 1 $\mu$ F/100V 1206 X7R MLCC, 48Vout
			540 Typ.	With a 1 $\mu$ F/100V 1206 X7R MLCC, 54Vout	
Input inrush current, A	30 Typ.	230VAC and Full Load	Temperature coefficient, %/°C	-0.02 Min, 0.02 Max.	
			Transient response peak deviation, $\mu$ s	3 Typ.	Load step from 50 ~ 75% change at 2.5A/ $\mu$ s
Input protection	T10A/250VAC		Transient response recovery time, $\mu$ s	600 Typ.	Recovery within 1% Vout
			Over voltage protection, Vdc	115 Min., 135 Max.	% of Vout(nom); Latch mode
			Over load protection, %	140 Typ.	% of maximum lout rated; Hiccup mode
			Short circuit protection	Continuous, automatics recovery	
			Remote ON/OFF	0 ~ 0.8Vdc or Open	External power supply is required, Output ON
				4.5 ~ 12.5Vdc	Between +Ctrl and -Ctrl, Output OFF
			Main output Power Good signal	20mA Max.	Input current
				Low	Referenced to "-Vout" Power good
				Open collector	Power off
			Load Share (-S suffix)	Active droop current share models	The converter can parallel to increase output current. It has internal load share function in this converter.
			Current Share Function (-S suffix), %	4 Typ.	No Load to Full Load
			Load Share accuracy (-S suffix), %	20 Typ.	Full Load

\*Please refer to the derating curve for detailed rating.

## RONUI500 SERIES

### General Specifications

Isolation voltage, Vac	1 minute (Reinforced insulation), Input to Output	3,000 Min.		
	Input (Output) to F.G.	2,000 Min.		
Isolation resistance, GΩ	500Vdc	0.1 Min.		
Switching frequency, kHz	230Vac, Full load		180 Typ.	

### Environmental Specifications

Operating base-plate temperature, °C	With derating	-40 Min.		100 Max.
Storage temperature range, °C		-55 Min.		105 Max.
Over temperature protection, °C	Internal thermistor, Hiccup mode			115 Typ.
Operating altitude, m				5,000 Max.
Shock	IEC60068-2-27			
Vibration	IEC60068-2-6			
Relative humidity	5% to 95% RH			

### Physical Specifications

Design meet safety standard	IEC/ EN/ UL 62368-1
Dimensions	4.6 × 2.4 × 0.5 inches (116.8 × 61 × 12.7 mm)
Case material	Aluminum base-plate with plastic case
Potting material	Silicone (UL94 V-0)
Weight	Open Type, 580g (20.45oz)
	Enclosed Type, 640g (22.56oz)
MTBF	2,500 × 10 <sup>5</sup> hrs, MIL-HDBK-217F, Full load

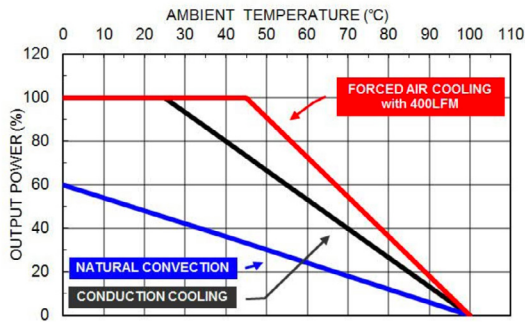
### EMC Specifications

Specifications	Conditions	Level
EMI	EN55032 and FCC Part 15	Conducted Class B
		Radiated Class A
Harmonic currents	EN61000-3-2	Full Load Class D
Voltage flicker	EN61000-3-3	
EMS	EN55035	
ESD	EN61000-4-2	Perf. Criteria A
Radiated immunity	EN61000-4-3	20 V/m Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV Perf. Criteria A
Surge	EN61000-4-5	DM ± 1kV and CM ± 2kV Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	30A/m Perf. Criteria A
Dip and interruptions	EN61000-4-11	

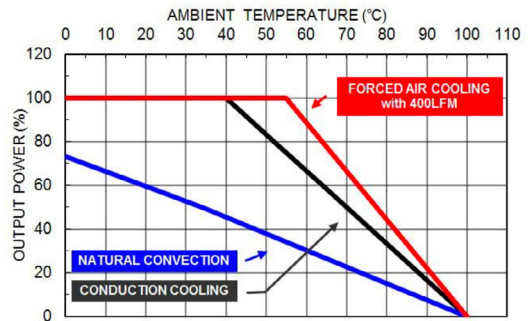
**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

**RONUI500 SERIES**

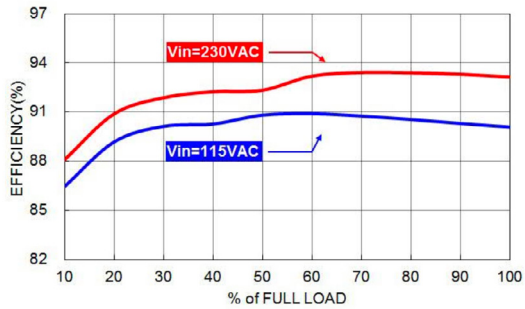
**Characteristic Curve**



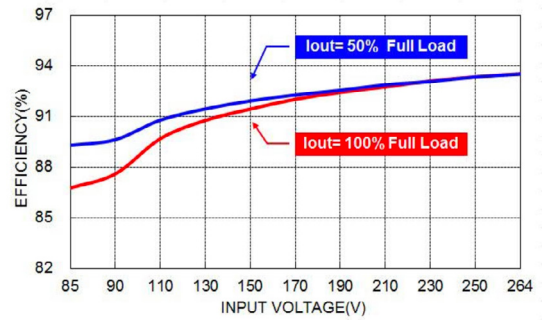
Derating Curve vs. Ambient Temperature  
Vin=115VAC Open type / Enclosed type  
Conduction cooling tested by 482.6x222.2x2mm plate



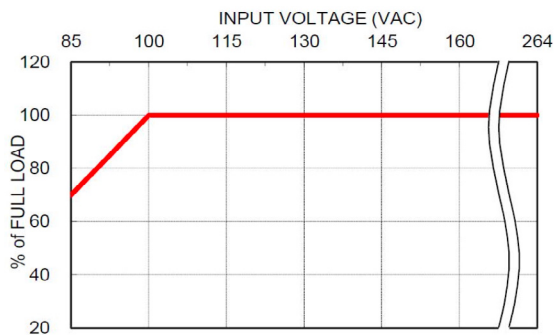
Derating Curve vs. Ambient Temperature  
Vin=230VAC Open type / Enclosed type  
Conduction cooling tested by 482.6x222.2x2mm plate



RONUI500-24S Efficiency vs. Output Load



RONUI500-24S Efficiency vs. Input Voltage

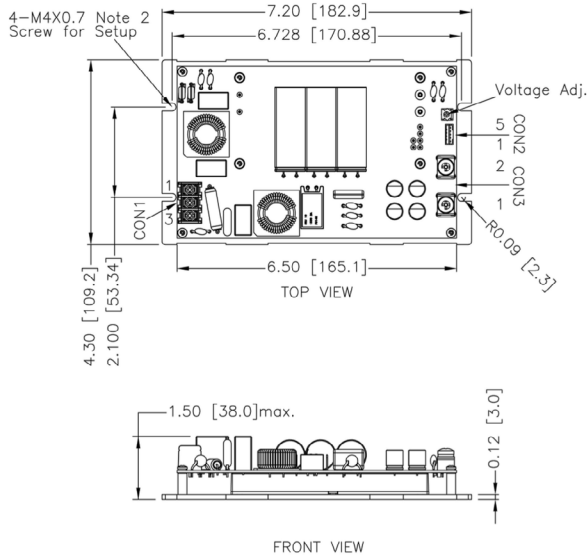


Derating Curve vs. Input Voltage

# RONUI500 SERIES

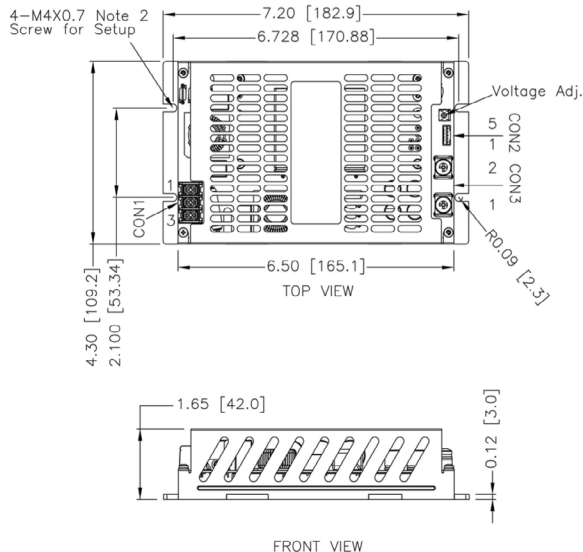
## Mechanical Drawing

### OPEN TYPE



1. All dimensions in inches (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)  
x.xxx±0.01 (x.xx±0.25)
3. The screw locked torque: MAX 10.4Kgf-cm/1.02N-m

### ENCLOSED TYPE



1. All dimensions in inches (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)  
x.xxx±0.01 (x.xx±0.25)
3. The screw locked torque: MAX 10.4Kgf-cm/1.02N-m

### CONNECTORS CONNECTIONS

#### CON1 - Input Connector

NO.	Dual
1	Line
2	Neutral
3	FG

#### Mates with

KST ring terminal: RV1-3.2

Screw locked torque: MAX 8.1Kgf.cm/0.8N.m

#### CON2 -Aux Connector

NO.	Dual
1	+PG
2	+V Sense
3	-V Sense
4	+Control
5	-Control

#### Mates with

Landwin housing: 2001S

Landwin crimp terminals: 2005T

#### CON3 - Output Connector

NO.	Dual
1	+Vout
2	-Vout

#### Mates with

KST ring terminal: RV5-5

Screw locked torque: MAX 16.8Kgf.cm/1.65N.m