

# Features

- Universal AC Input (85-264VAC)
- Long 7 Year Warranty
- Protections: SCP, OVP, OCP, OLP, OTP
- 100% Full Load burn-in test
- DC OK Indicator LED (optional with relay output)
- cooling by free air convection, 5000m operation
- UL, CSA & CE certified with CB Report

## Description

This DIN-rail mounted power supply uses high reliability components to give a long, trouble-free life. The power supply can be end mounted to save space or side mounted for use in low-profile cabinets. Relay contacts simplify and the units can be deliver 60W start-up power. The REDIN series is fully certified for industrial use and carries a 7-year warranty.

## Selection Guide

Part Number	Input Voltage Range (VAC)	Output Voltage (VDC)	Output Trimming Voltage (VDC)	Rated Current (mA)	Efficiency typ. (%)
REDIN45-12	85-264	12	12-15	3.75	84
REDIN45-24	85-264	24	24-28	1.875	86

\* add suffix /NR for versions without relay

## Specifications (measured at T<sub>A</sub>= 25°C, 230VAC, rated load)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	all operating conditions	85VAC 120VDC		264VAC 250VDC
max. Input Voltage	max. 1 second			300VAC 375VDC
Output Voltage Adjustment (Factory Setting) <sup>(1)</sup>	12Vout 24Vout		12-15VDC (12V±5%) 24-28VDC (24V±5%)	
Input Current	full load, 115VAC full load, 230VAC			1.35A 0.75A
Inrush Current	cold start at 25°C, 115VAC cold start at 25°C, 230VAC			40A 60A
No Load Power Consumption	standard (with Relay) /NR option (no Relay)			<1000mW <500mW
Leakage Current	240VAC		<1.0mA	
Start Up time	cold start, 230VAC		500ms	1000ms
Rise time	cold start, 230VAC		20ms	
Hold-up time	full load, 115VAC full load, 230VAC		20ms 50ms	
Input Frequency		47kHz		63kHz
Efficiency		see Selection Guide		
Output Ripple and Noise <sup>(2)</sup>	12Vout 24Vout		60mVp-p 75mVp-p	
Over Load	all operating conditions		140% for 5 seconds max.	
<b>Notes:</b>				
Note1:	For more details refer to Vadj. Derating Graph			
Note2:	Ripple and Noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire terminated with 0.1µF & 47µF parallel capacitor.			
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**RECOM**  
AC/DC Converter

## REDIN45

45 Watt  
DIN-Rail  
Power  
Supply

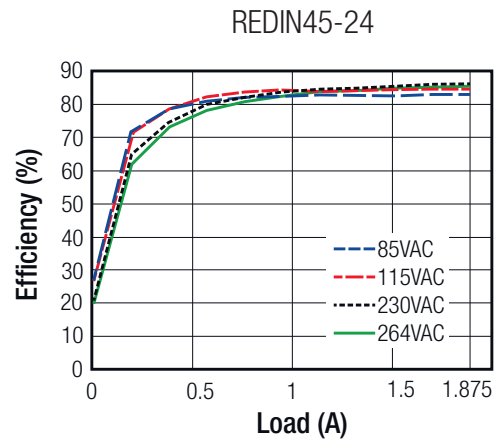
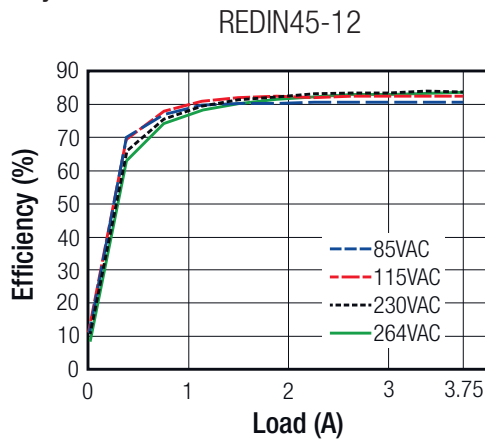


CB-Report  
UL-60950-1 Certified  
UL-508 Certified  
IEC-60950-1 Certified  
EN-60715 Compliant  
EN-50022 Compliant  
CSA C22.2 No. 60950-1-07 Certified

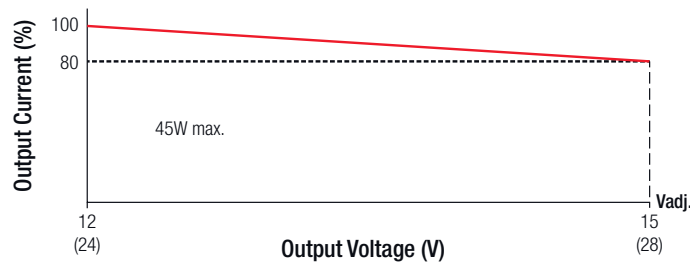
Refer to Applications Notes

Specifications (measured at  $T_A = 25^\circ\text{C}$ , 230VAC, rated load)

### Efficiency vs. Load



### Vadj. Derating



### REGULATION

Parameter	Condition	Value
Line Regulation		$\pm 0.1$ typ. / $\pm 1\%$ max.
Load Regulation		$\pm 0.1$ typ. / $\pm 1\%$ max.
Transient Response <sup>(3)</sup>	12Vout (step load change: 1.875A - 3.75A) 24Vout (step load change: 0.937A - 1.875A)	$\pm 5\%$ typ. $\pm 5\%$ typ.
Dwell Time		100Hz & 1kHz 50% duty
Slew Rate		0.5A / $\mu\text{s}$

#### Notes:

Note3: Transient Response + E-CAP loading 3300 $\mu\text{F}$ . Other specs with resistive load only.

### PROTECTION

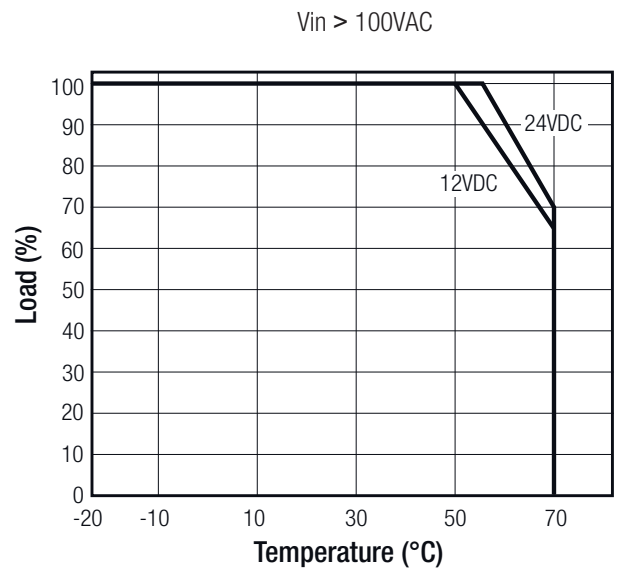
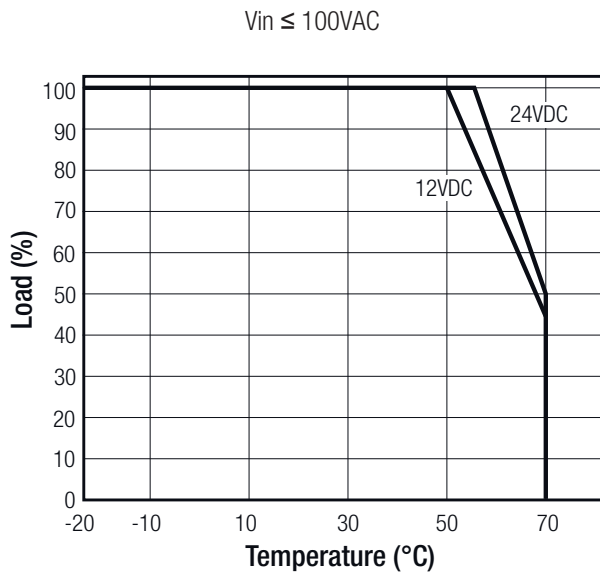
Parameter	Condition	Value
Short Circuit Protection (SCP)	Hiccup	auto-recovery after fault condition
Over Voltage Protection (OVP)	12Vout 24Vout	18VDC max., shut-down latch-off o/p voltage, re-power on to recover 35VDC max., shut-down latch-off o/p voltage, re-power on to recover
Over Current Protection (OCP)		150% typ., auto-recovery after fault condition
Over Temperature Protection (OTP)	detect on inside ambient	$105^\circ\text{C} \pm 5\%$ , shut-down latch-off o/p voltage, re-power on to recover
Isolation Voltage	I/P to O/P	3.75kVAC / 1 minute
	I/P to FG	1.88kVAC / 1 minute
	O/P to FG	0.5kVAC / 1 minute
Isolation Resistance	500VDC, 70% RH, I/P to O/P; I/P to FG; O/P to FG	100M $\Omega$ min.
Power OK LED	Relay Contacts	1A, 30VDC / 120VAC
	LED/Relay	ON if Vout = 11-16V (12V) / 22-30V (24V)

Specifications (measured at  $T_A = 25^\circ\text{C}$ , 230VAC, rated load)

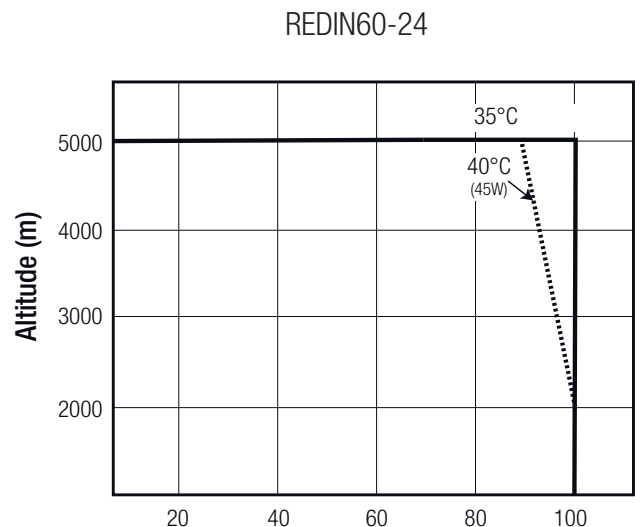
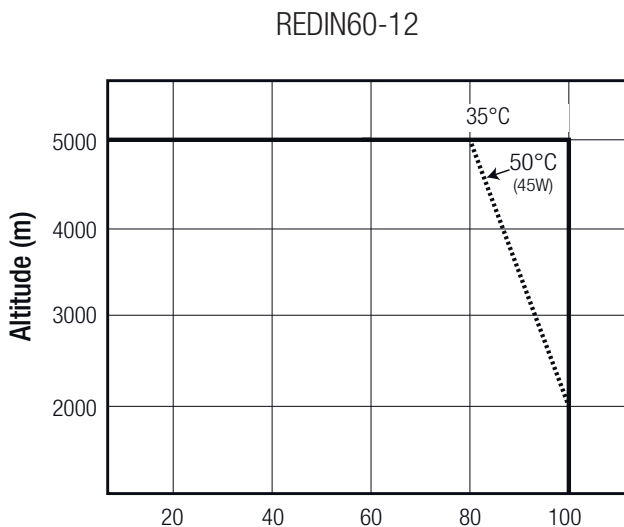
**ENVIRONMENTAL**

Parameter	Condition	Value
Operating Temperature Range	with derating	-20°C to +70°C (see graph)
Storage Temperature Range		-30°C to +85°C
Operating Humidity	non-condensing	20% - 90%RH
Storage Humidity		10% - 90% RH
Vibration		10-500Hz 2G, 60min.
Shock	3 times each axis	10G / 11ms, along X, Y and Z axis
Altitude	see derating graph	5000m
MTBF (+25°C)	MIL-HDBK-217F, 115VAC, 60Hz, 75% load	200 x 10 <sup>3</sup> hours
Design Lifetime (+40°C)		87.6 x 10 <sup>3</sup> hours

**Derating Graph**



**Typical Characteristics**

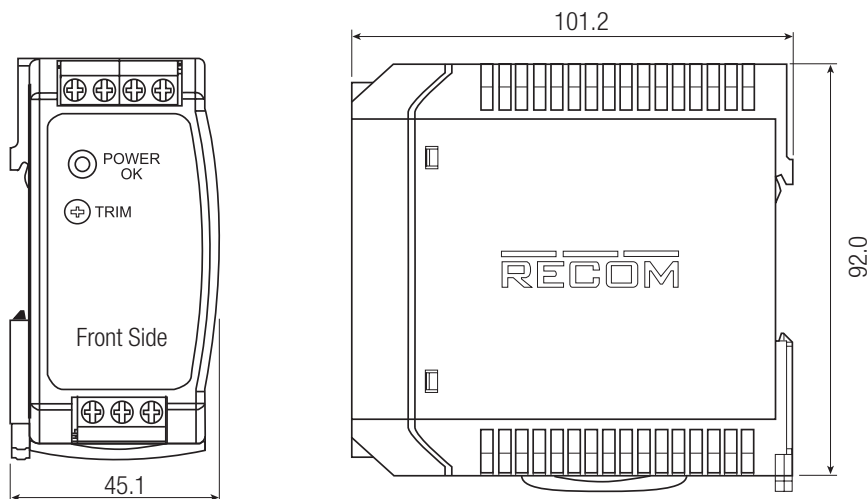


**Specifications** (measured at  $T_A = 25^\circ\text{C}$ , 230VAC, rated load)

SAFETY AND CERTIFICATIONS		
Certificate Type	Report / File Number	Standard
UL General Safety	E224736	UL-60950-1, 2nd Edition
CSA		UL-508 UL-1310 C22.2 No. 60950-1-07, 2nd Edition
IEC/EN General Safety	E224736	IEC/EN-60950-1, 2nd Edition
Chinese Safety Standard	E224736	GB 4943.1-2011
Certificate Type (Environmental)	Condition	Standard / Criterion
EMI Standard		EN-55011, Class B
		EN-55022, Class B
		EN55024 FCC, Class B
ESD	$\pm 8\text{kV}$ Contact & Air Discharge 10V/m, 80-3000MHz, 80% AM at 1kHz Level 2	EN-61000-4-2, Criteria A
Radiated Immunity		EN-61000-4-3, Criteria A
Fast Transient	$\pm 2\text{kV}$ / L-N, $\pm 4\text{kV}$ / L, N-FG 10Vrms, 0.15-80MHz, 80% AM at 1kHz	EN-61000-4-4, Criteria A
Surge		EN-61000-4-5, Criteria A
Conducted Immunity	40% reduction, 200ms 70% reduction, 500ms 90% reduction, 5s	EN-61000-4-6, Criteria A
Power frequency magnetic field immunity test		EN-61000-4-8, Criteria A
Noise Immunity		EN-61000-4-11, Criteria A
Harmonic Immunity	not applicable input below 75W	EN-61000-4-11, Criteria B
Voltage Flicker		EN-61000-3-2 EN-61000-3-3

DIMENSIONS and PHYSICAL CHARACTERISTICS		
Parameter	Type	Value
Case Material		UL94V-0 plastic
Dimensions (WxHxD)		92.0 x 45.1 x 101.2mm
Weight		332g
Packaging Dimensions (LxWxH)	Cardboard Box	310 x 252 x 285mm
Packaging Quantity	Carton	30pcs

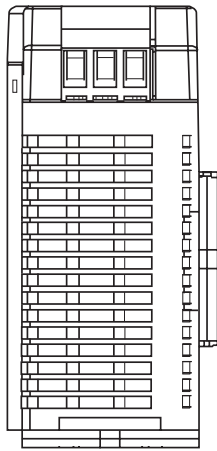
**Mechanical Dimensions**



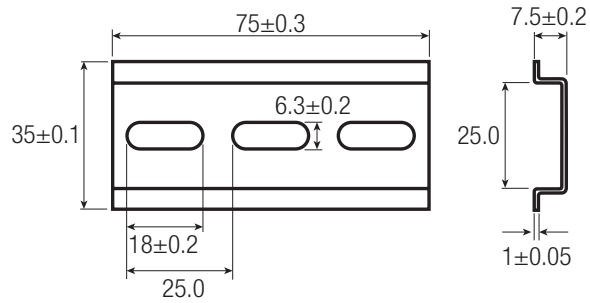
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Specifications (measured at  $T_A = 25^\circ\text{C}$ , 230VAC, rated load)

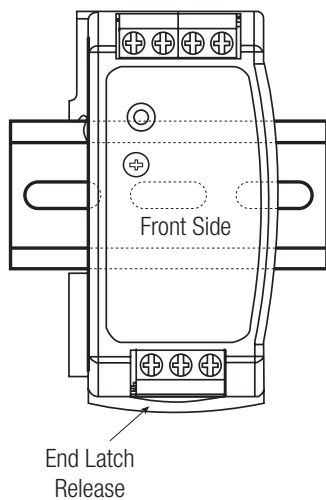
Mechanical Dimensions



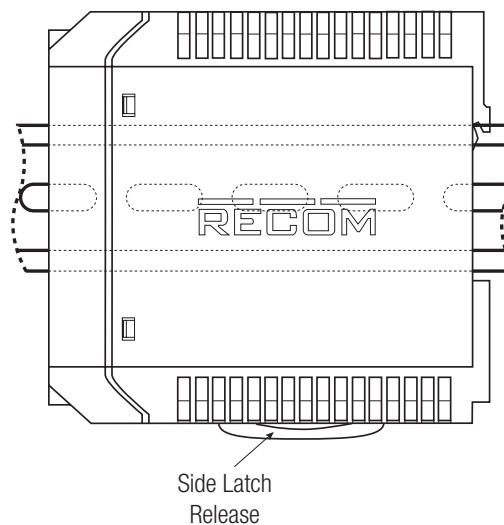
DIN-RAIL mounting bracket  
(75mm) included



END MOUNTING



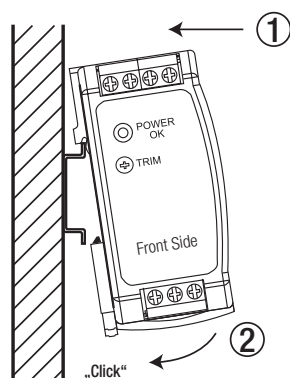
SIDE MOUNTING



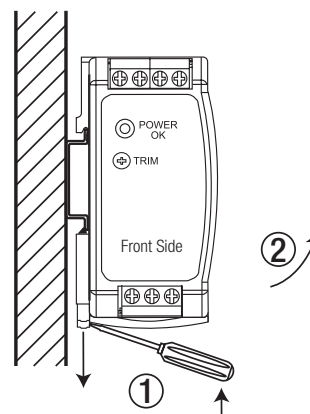
Tolerance:  $\pm 0.5\text{mm}$

Mounting Instruction

Mounting



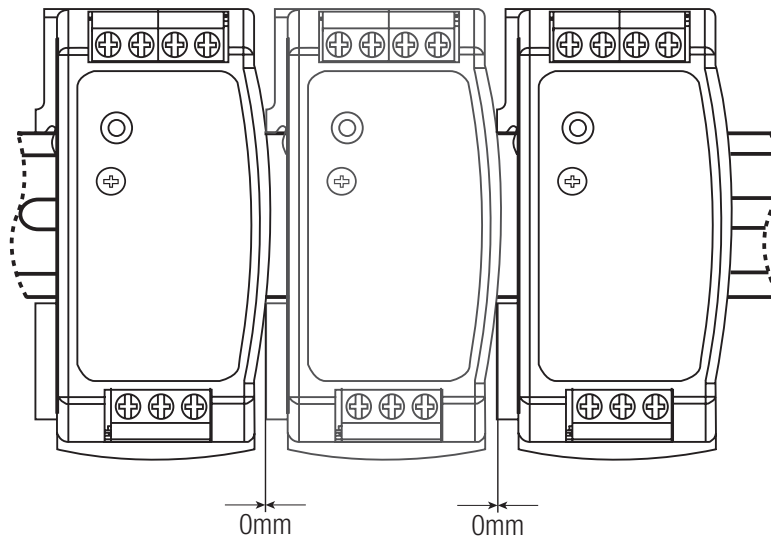
Releasing



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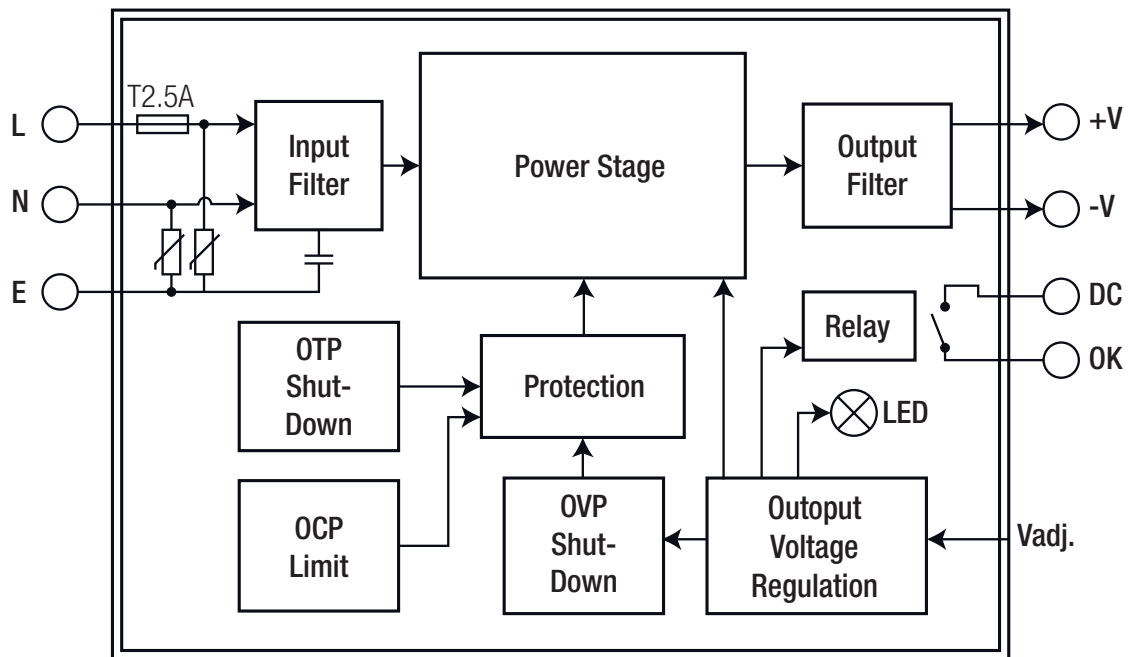
Specifications (measured at  $T_A = 25^\circ\text{C}$ , 230VAC, rated load)

### Mounting Multiple Power Supplies



no spacers between  
supplies required

### Functional Diagram



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.