

Features

- Universal AC Input (85-264VAC)
- Long 7 Year Warranty
- Protections: SCP, OVP, OCP, OTP
- 100% Full Load burn-in test
- DC OK Indicator LED with Relay Contacts
- 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 DC OK monitoring 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 (A)	Efficiency typ. (%)	Max. Capacitive Load (µF)
REDIN45-12	85-264	12	12-15	3.75	85	18800
REDIN45-24	85-264	24	24-28	1.875	86	4700

* add suffix /NR for versions without relay

Specifications (measured at TA= 25°C, 230VAC, full load and after warm up)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	all operating conditions	85VAC		264VAC
max. Input Voltage	max. 1 second			300VAC 375VDC
Output Voltage Adjustment (Factory Setting) ⁽¹⁾	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
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 Range		47Hz		63Hz
Operating Frequency Range			65kHz	
Efficiency		see Selection Guide		
Output Ripple and Noise ⁽²⁾	12Vout 24Vout		60mVp-p 75mVp-p	
Over Load	all operating conditions	140% for 5 seconds max.		
Notes:				
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



UL
E224736

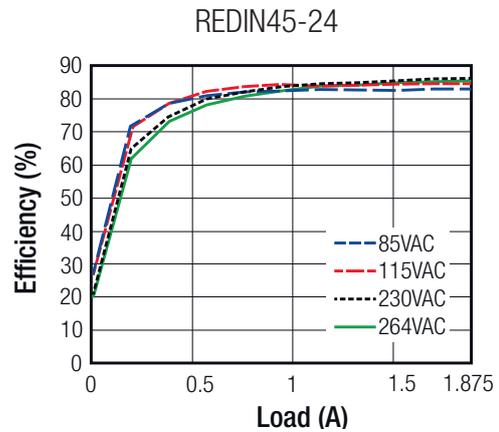
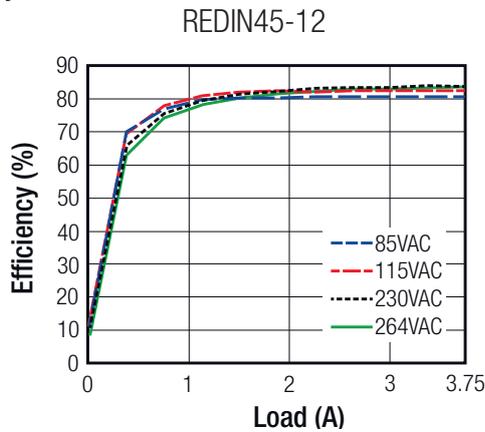


CB-Report
UL-60950-1 Certified
UL-508 Certified
IEC-60950-1 Certified
EN-60715 Compliant
EN-50022 Compliant
CSA C22.2 No. 60950-1-07 Certified

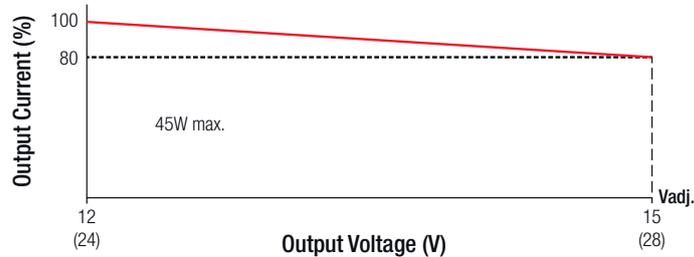
Refer to Applications Notes

Specifications (measured at $T_A = 25^\circ\text{C}$, 230VAC, full load and after warm up)

Efficiency vs. Load



Vadj. Derating



REGULATION

Parameter	Condition	Value
Line Regulation		± 0.1 typ. / $\pm 1\%$ max.
Load Regulation		± 0.1 typ. / $\pm 1\%$ max.
Transient Response ⁽³⁾	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 / μs

Notes:

Note3: Transient Response + E-CAP loading 3300 μF . Other specs with resistive load only.

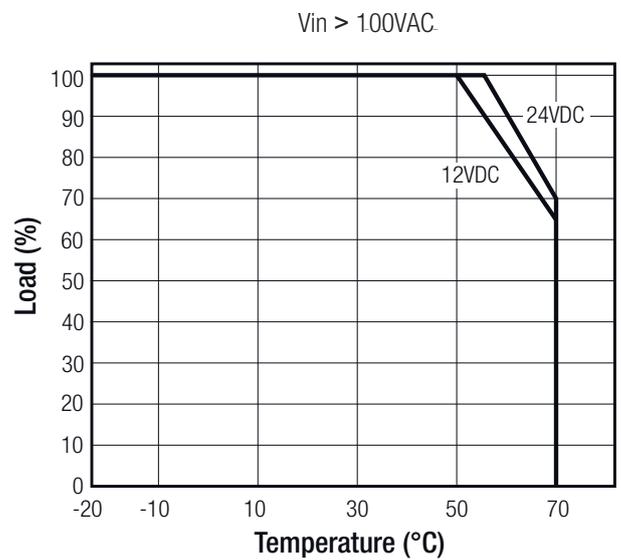
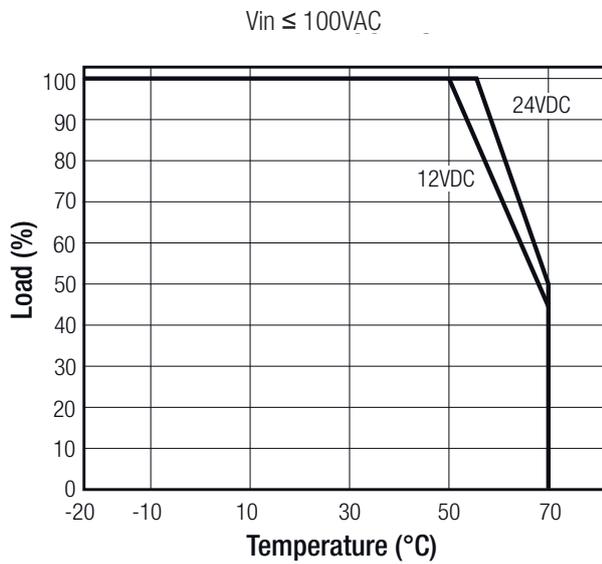
PROTECTION

Parameter	Condition	Value
Input Fuse		T2.5A, slow blow type
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 Ω min.
Leakage Current	240VAC	<1.0mA
Power OK LED	Relay Contacts	1A, 30VDC / 120VAC
	LED/Relay	ON if Vout = 11-16V (12V) / 22-30V (24V)

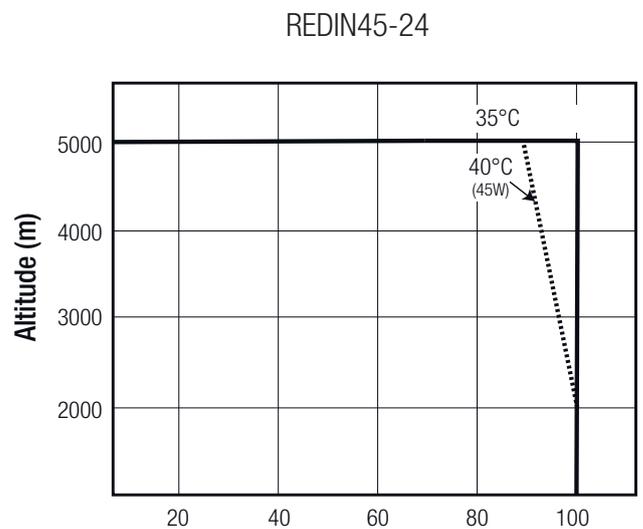
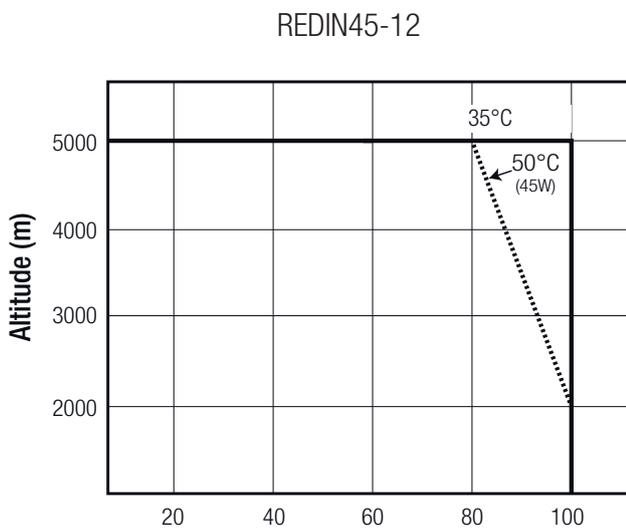
Specifications (measured at $T_A = 25^\circ\text{C}$, 230VAC, full load and after warm up)

ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range	with derating	-20°C to +70°C (see graph)
Operating Humidity	non-condensing	20% - 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 ³ hours
Design Lifetime (+40°C)		87.6 x 10 ³ hours

Derating Graph

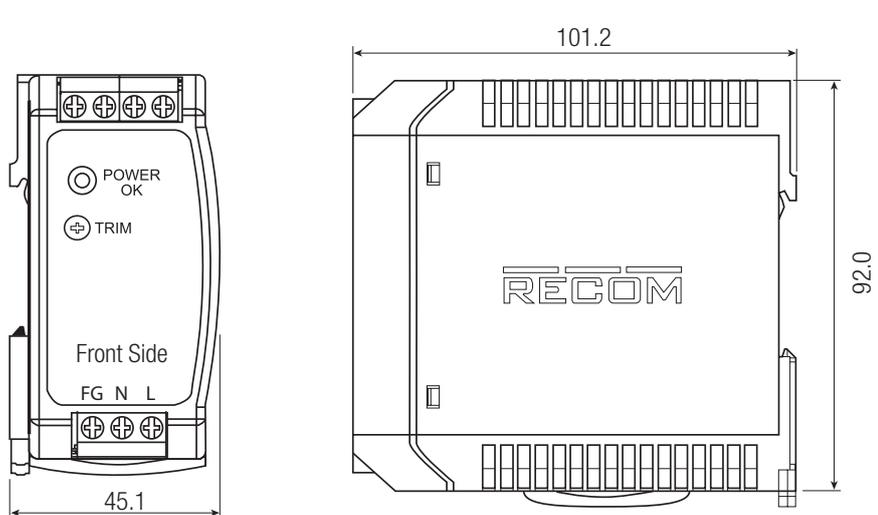


Typical Characteristics



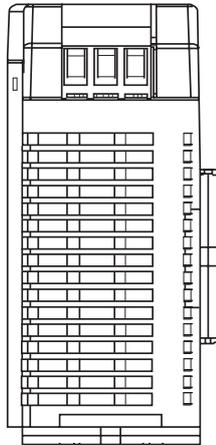
Specifications (measured at $T_A = 25^\circ\text{C}$, 230VAC, full load and after warm up)

SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	Report / File Number	Standard
UL General Safety	E224736	UL-60950-1, 2nd Edition
CSA General Safety		UL-1310 C22.2 No. 60950-1-07, 2nd Edition
Industrial Control Equipment General Use Power Supplies	E470721	UL-508 C22.2 No. 107.1
IEC/EN General Safety	E224736	IEC/EN-60950-1, 2nd Edition
Chinese Safety Standard	E224736	GB 4943.1-2011
EMC Compliance		
EMC Compliance	Report / Condition	Standard / Criterion
EMI Standard	Report: HA150146	EN-55022, Class B
		EN-55024, Class B
		FCC15, Class B
ESD	$\pm 8\text{kV}$ Contact & Air Discharge	EN-61000-4-2, Criteria A
Radiated Immunity	10V/m, 80-3000MHz, 80% AM at 1kHz	EN-61000-4-3, Criteria A
Fast Transient	Level 2	EN-61000-4-4, Criteria A
Surge	$\pm 2\text{kV}$ / L-N, $\pm 4\text{kV}$ / L, N-FG	EN-61000-4-5, Criteria A
Conducted Immunity	10Vrms, 0.15-80MHz, 80% AM at 1kHz	EN-61000-4-6, Criteria A
Power frequency magnetic field immunity test		EN-61000-4-8, Criteria A
Noise Immunity	40% reduction, 200ms	EN-61000-4-11, Criteria A
	70% reduction, 500ms	EN-61000-4-11, Criteria B
	90% reduction, 5s	EN-61000-4-11, Criteria B
Harmonic Immunity	not applicable input below 75W	EN-61000-3-2
Voltage Flicker		EN-61000-3-3

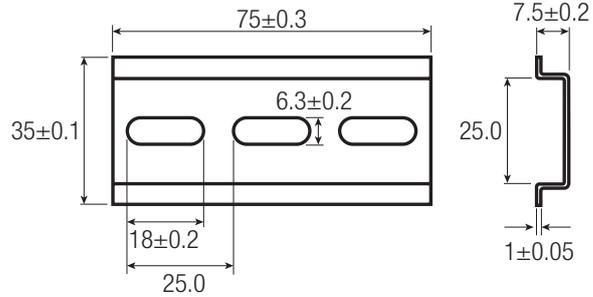
DIMENSION and PHYSICAL CHARACTERISTICS		
Parameter	Type	Value
Case Material		UL94V-0 plastic
Package Dimension (WxHxD)		45.1 x 92.0 x 101.2mm
Package Weight		332g
Dimension Drawing (mm)  <p>The drawing shows two views of the converter. The front view on the left shows a width of 45.1 mm. The top view on the right shows a length of 101.2 mm and a height of 92.0 mm. The front view includes labels for 'POWER OK', 'TRIM', 'Front Side', and 'FG N L'. The top view shows the 'RECOM' logo on the front panel.</p>		
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Specifications (measured at $T_A = 25^\circ\text{C}$, 230VAC, full load and after warm up)

Dimension Drawing (mm)

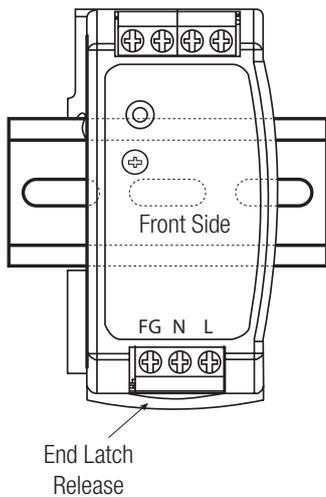


DIN-RAIL mounting bracket
(75mm) included

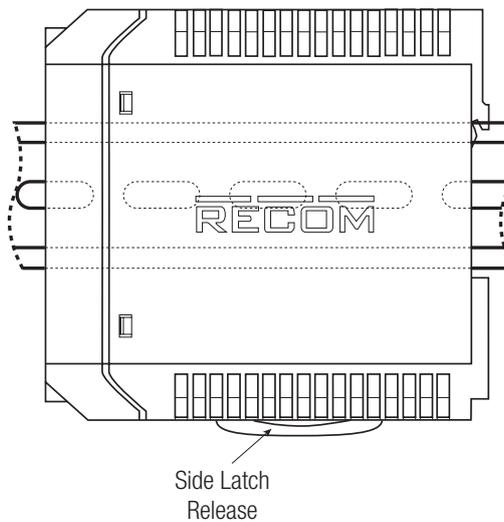


INSTALLATION

END MOUNTING



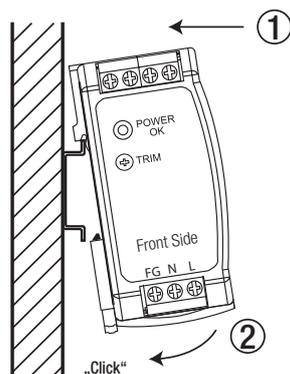
SIDE MOUNTING



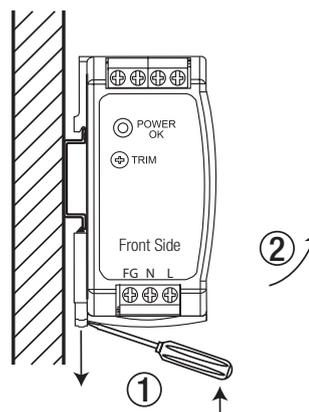
Tolerance: $\pm 0.5\text{mm}$

Mounting Instruction

Mounting



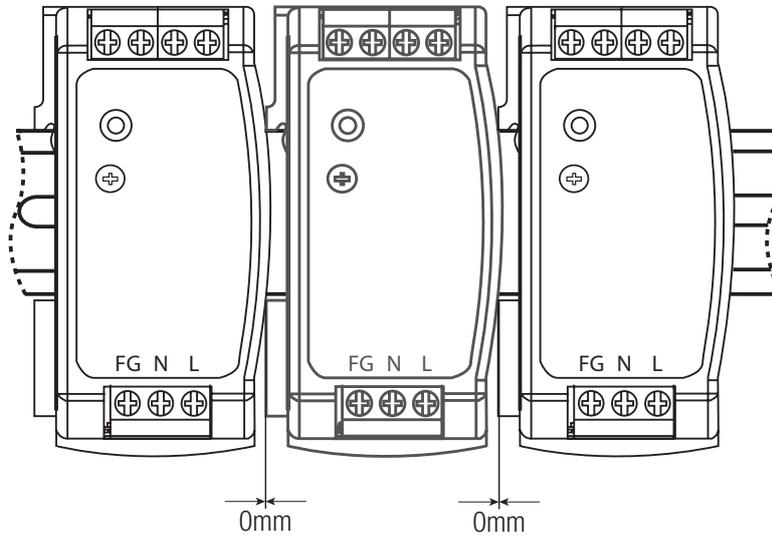
Releasing



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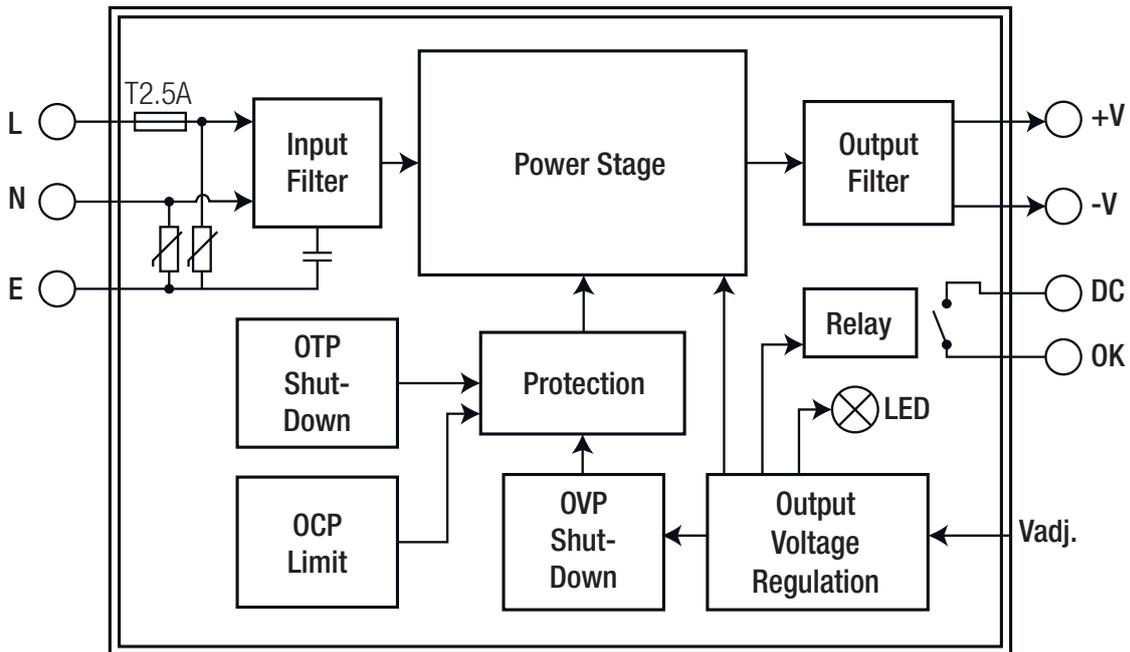
Specifications (measured at $T_A = 25^\circ\text{C}$, 230VAC, full load and after warm up)

Mounting Multiple Power Supplies



no spacers between
supplies required

Functional Diagram



PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	Cardboard Box	310 x 285 x 252mm
Packaging Quantity		30pcs
Storage Temperature Range		-30°C to +85°C
Storage Humidity		10% - 90% RH

The product information and specifications are subject to change without prior notice. RECOM products are not authorized for use in safety-critical applications (such as life support) without RECOM's explicit written consent. A safety-critical application is defined as an application where a failure of a RECOM product may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The buyer shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.