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

RECOM

AC/DC Converter

REDIN60

60 Watt DIN-Rail Power Supply

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 deliver 80W 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)
REDIN60-12	85-264	12	12-15	5.0	85	18800
REDIN60-24	85-264	24	24-28	2.5	86	4700

Specifications (measured at T_A= 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			1.8A 1.0A
absolute max. Input 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.

continued on next page

E224736

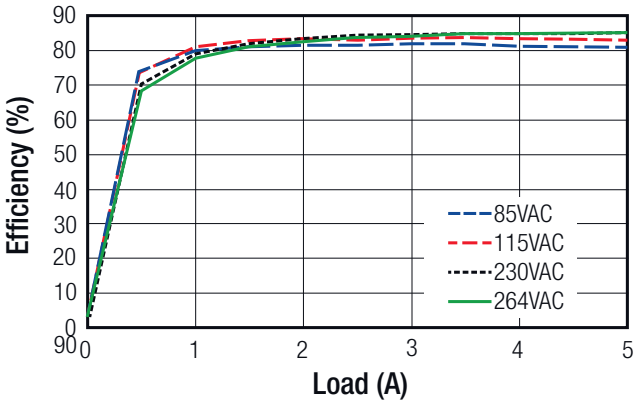
CB-Report
UL-60950-1 Certified
UL-508 Certified
IEC-60950-1 Certified
EN-60715 Compliant
EN-50022 Compliant
CSA C22.2 No. 60950-1-07 Certified

Refer to Applications Notes

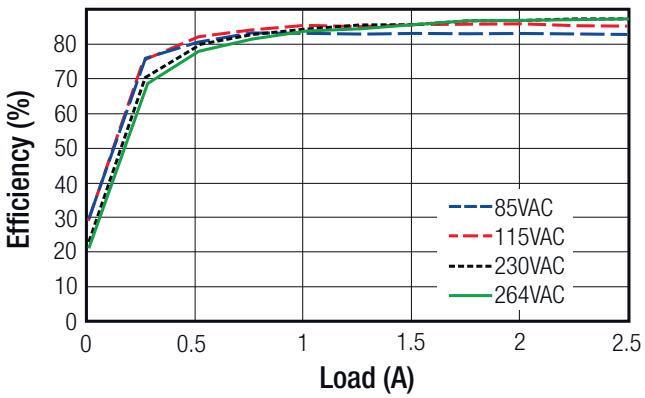
Specifications (measured at T_A= 25°C, 230VAC, full load and after warm up)

Efficiency vs. Load

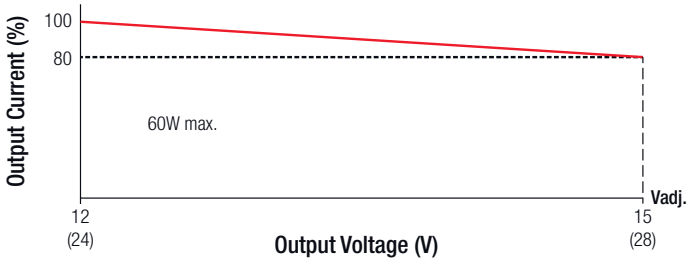
REDIN60-12



REDIN60-24



Vadj. Derating



REGULATION		
Parameter	**Condition**	**Value**
Line Voltage Regulation		±0.1 typ. / ±1% max.
Load Voltage Regulation		±0.1 typ. / ±1% max.
Transient Response [3]	12Vout (step load change: 2.5A - 5.0A)	±5% typ.
	24Vout (step load change: 1.25A - 2.5A)	±5% typ.
Dwell Time		100Hz & 1kHz 50% duty
Slew Rate		0.5A / µs

Notes:

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

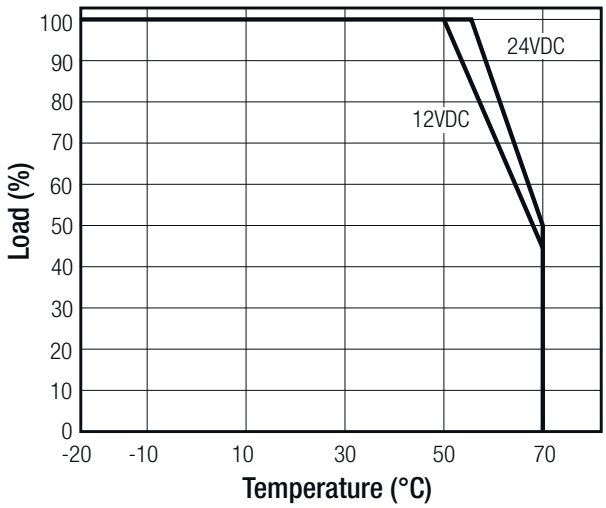
PROTECTION		
Parameter	**Condition**	**Value**
Input Fuse		T2.5A, slow blow type
Short Circuit Protection (SCP)	Hiccup	auto-recovery after fault condition
Over Voltage Protection (OVP)	12Vout	18VDC max., shut-down latch-off o/p voltage, re-power on to recover
	24Vout	35VDC max., shut-down latch-off o/p 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°C±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	100MΩ min.
Leakage Current	240VAC	>1mA
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°C, 230VAC, full load and after warm up)

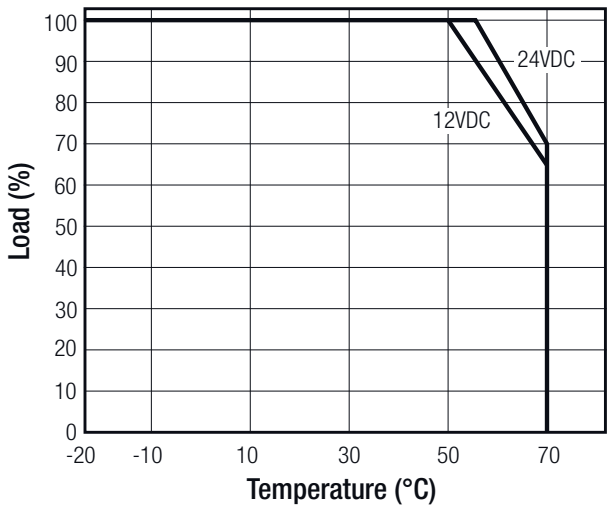
ENVIRONMENTAL		
Parameter	**Condition**	**Value**
Operating Temperature Range	with derating	-20°C to +70°C (see graph)
Operating Humidity	non-condensing	20% - 90%RH
Vibration		10-500Hz 2G, 60min.
Shock	3 times each axis	10G / 11ms, along X, Y and Z axis
Altitude	see derating graph	5000m
MTBF (+25°C)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

Derating Graph

Vin ≤ 100VAC

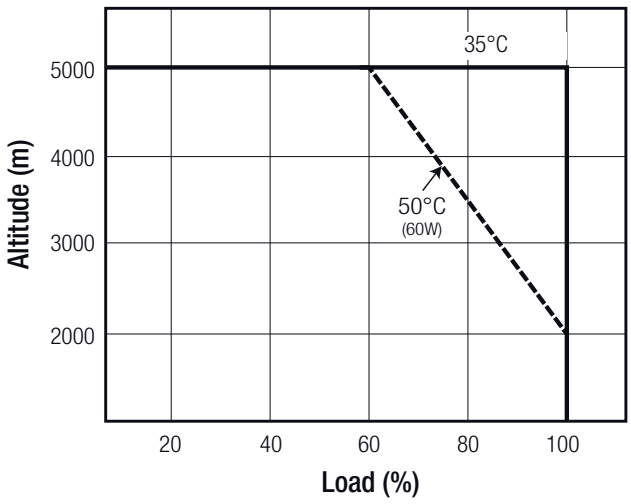


Vin > 100VAC

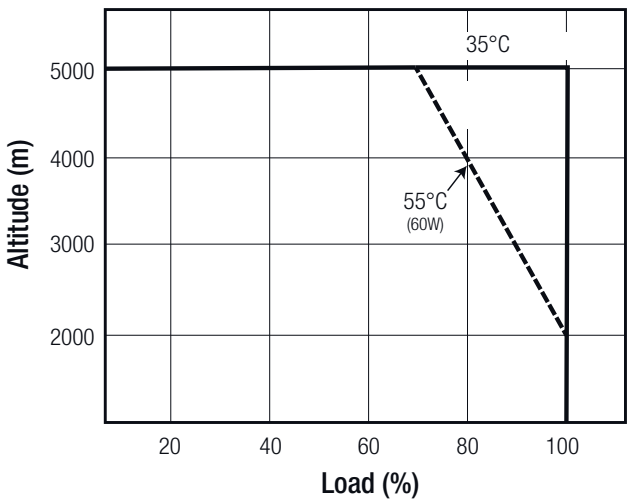


Typical Characteristics

REDIN60-12



REDIN60-24



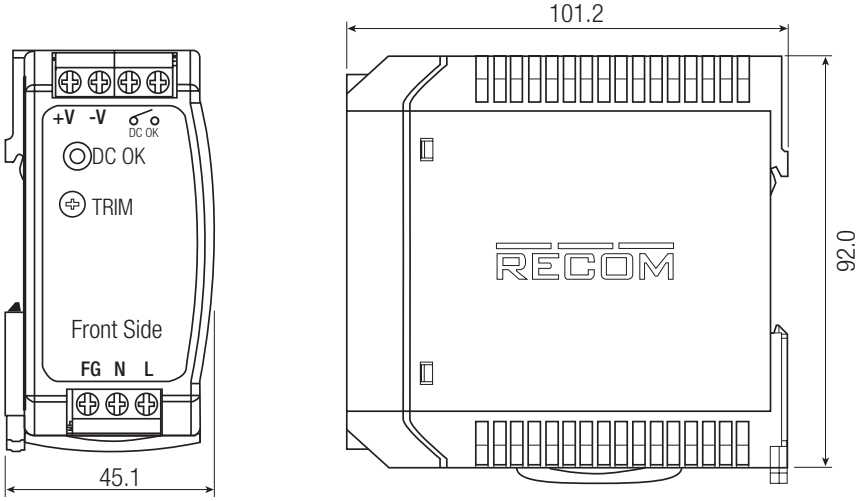
Specifications (measured at T_A= 25°C, 230VAC, full load and after warm up)

SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	**Report / File Number**	**Standard**
UL General Safety	E224736	UL60950-1, 2nd Edition UL-1310
CSA General Safety		C22.2 No. 60950-1-07, 2nd Edition
Industrial Control Equipment General Use Power Supplies	E470721	UL508 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	**Report / Condition**	**Standard / Criterion**
EMI Standard	Report: HA150146	EN55022, Class B
		EN55024, Class B
		FCC15, Class B
ESD	±8kV Contact & Air Discharge	EN61000-4-2, Criteria A
Radiated Immunity	10V/m, 80-3000MHz, 80% AM at 1kHz	EN61000-4-3, Criteria A
Fast Transient	Level 2	EN61000-4-4, Criteria A
Surge	±2kV / L-N, ±4kV / L, N-FG	EN61000-4-5, Criteria A
Conducted Immunity	10Vrms, 0.15-80MHz, 80% AM at 1kHz	EN61000-4-6, Criteria A
Power frequency magnetic field immunity test		EN61000-4-8, Criteria A
Noise Immunity	40% reduction, 200ms	EN61000-4-11, Criteria A
	70% reduction, 500ms	EN61000-4-11, Criteria B
	90% reduction, 5s	EN61000-4-11, Criteria B
Harmonic Immunity	not applicable input below 75W	EN61000-3-2
Voltage Flicker		EN61000-3-3

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)



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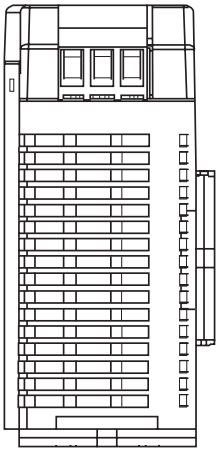
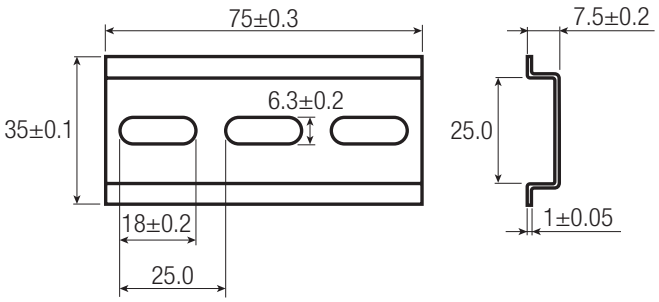
Specifications (measured at T_A= 25°C, 230VAC, full load and after warm up)

Dimension Drawing (mm)

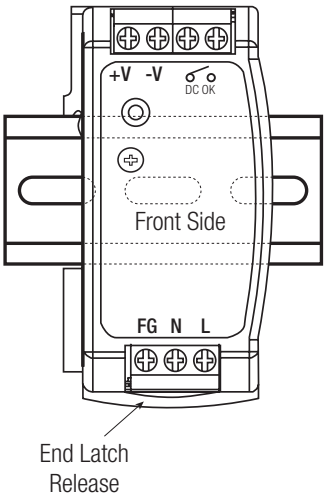


DIN-RAIL mounting bracket
(75mm) included

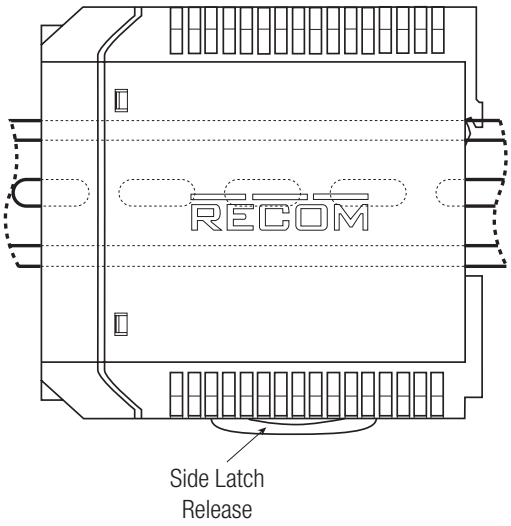


INSTALLATION

END MOUNTING

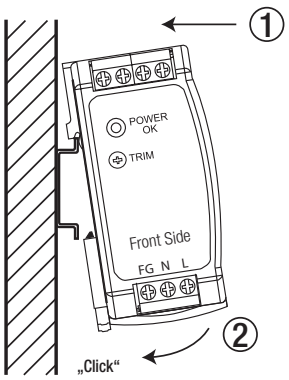


SIDE MOUNTING

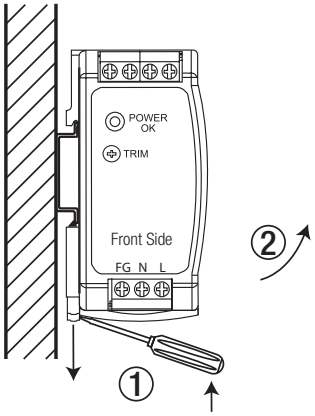


Mounting Instruction

Mounting



Releasing



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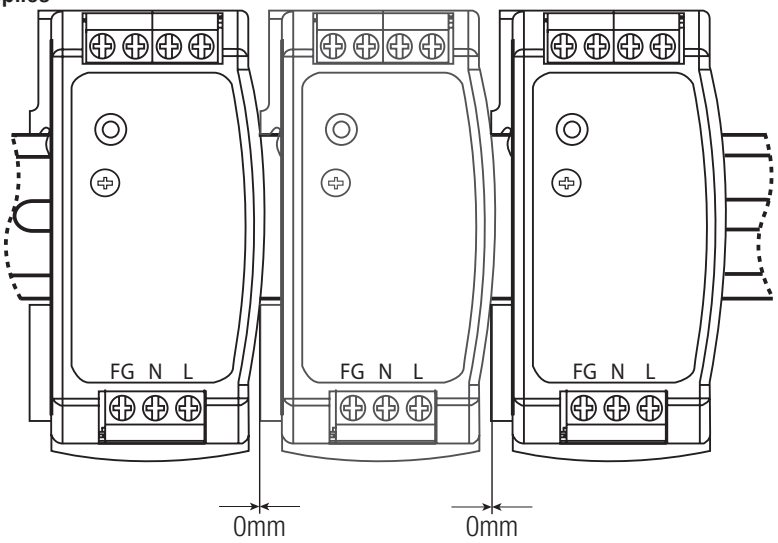
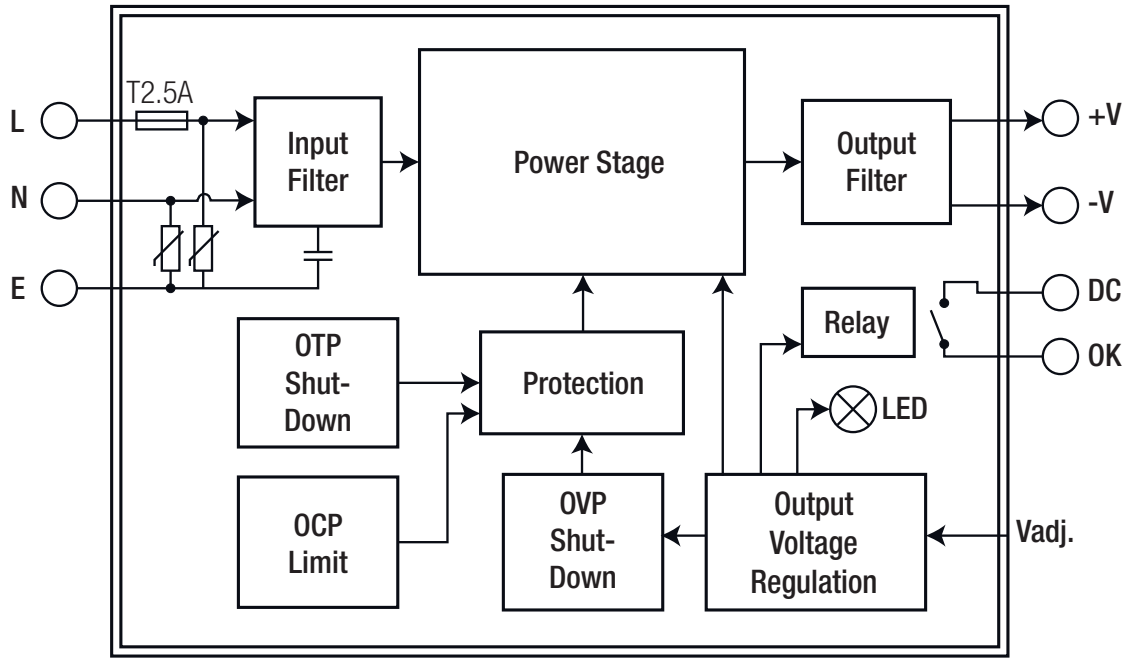
Specifications (measured at T_A= 25°C, 230VAC, full load and after warm up)

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