Features

DIN Rail Series

- 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 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			1.8A 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 Capability	all operating conditions	140% for 5 seconds max.		

Notes:

Note1: For more details refer to Vadj. Derating Graph on page PA-2

Note2: Ripple and Noise are measured at 20MHz bandwidth by using a 12" twisted pair-wire terminated with 0.1µF & 47µF parallel capacitor

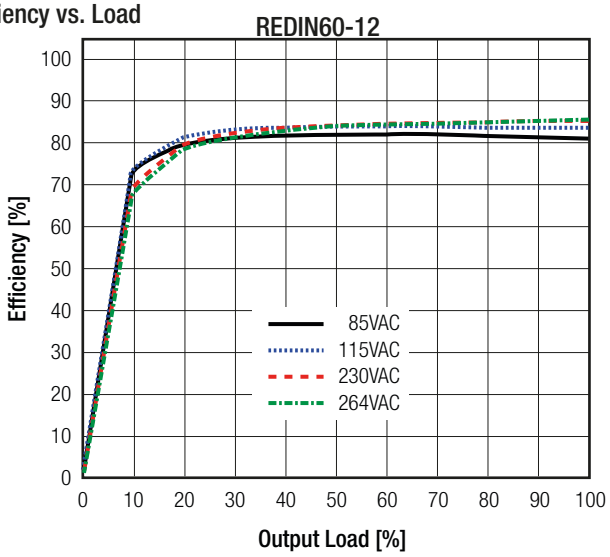
continued on next page

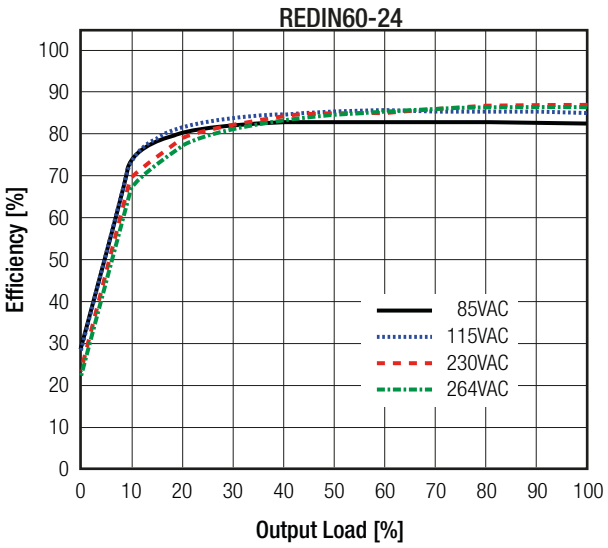
E224736

CB-Report
UL60950-1 certified
IEC/EN60950-1 certified
CSA C22.2 No. 60950-1-07 certified
UL508 certified
CAN/CSA-C22.2 No. 107.1-01 certified
EN55024 certified
EN55032 certified

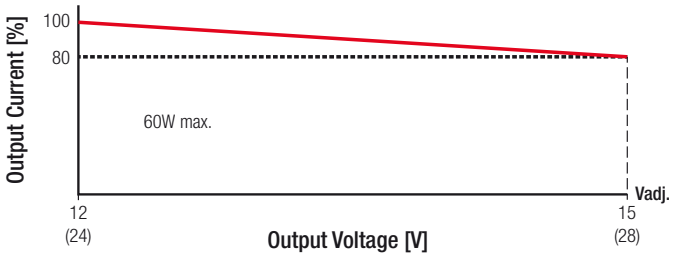
Specifications (measured at Ta= 25°C, 230VAC, full load and after warm up)

Efficiency vs. Load





Vadj. Derating



REGULATION

Parameter	Condition	Value
Line Regulation		±0.1 typ. / ±1% max.
Load 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

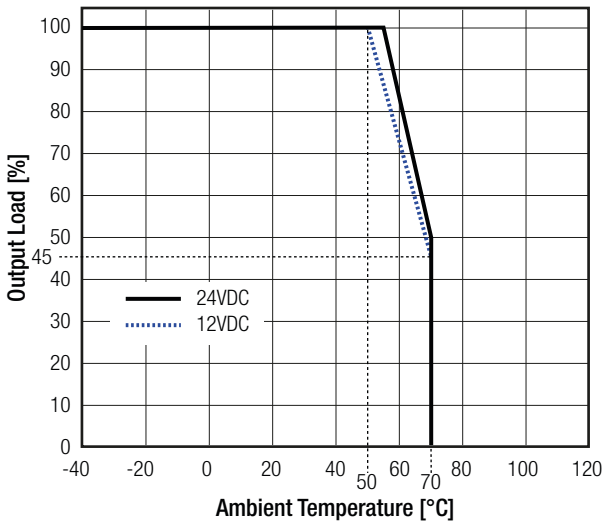
Parameter	Condition		Value
Input Fuse			T2.5A, slow blow type
Short Circuit Protection (SCP)			auto-recovery after fault condition, Hiccup Mode
Over Voltage Protection (OVP)	12Vout		18VDC max., shut-down latch-off o/p voltage, re-power on to recover
	24Vout		35VDC max., shut-down latch-off o/p voltage, re-power on to recover
Over Voltage Category			OVCII
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	tested for 1 minute	I/P to O/P	3.75kVAC
		I/P to FG	1.88kVAC
		O/P to FG	0.5kVAC
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 Ta= 25°C, 230VAC, full load and after warm up)

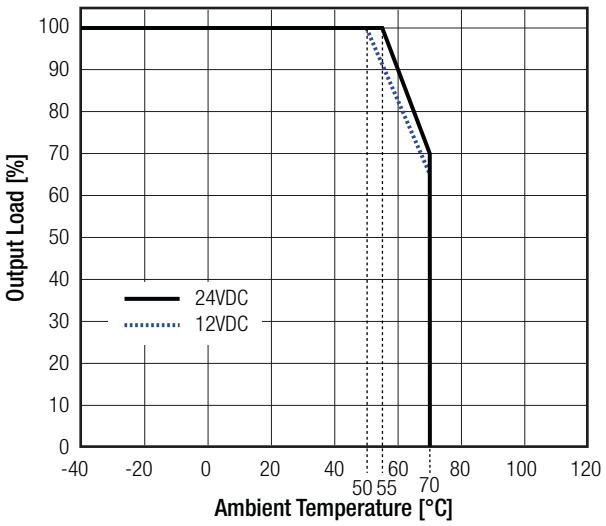
ENVIRONMENTAL		
Parameter	**Condition**	**Value**
Operating Temperature Range	with derating	-20°C to +70°C (see graph)
Operating Humidity	non-condensing	20% - 90%RH
Vibration		10-500Hz 2G, 60min.
Shock	3 times each axis	10G / 11ms, along X, Y and Z axis
Altitude	see derating graph	5000m
MTBF (+25°C)	according to 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

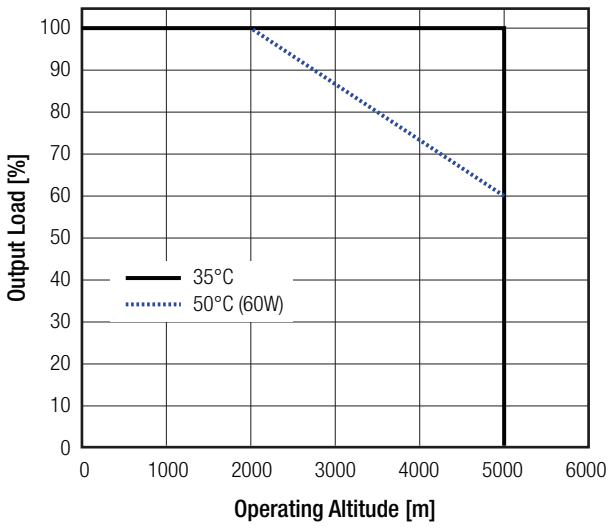


Vin > 100VAC

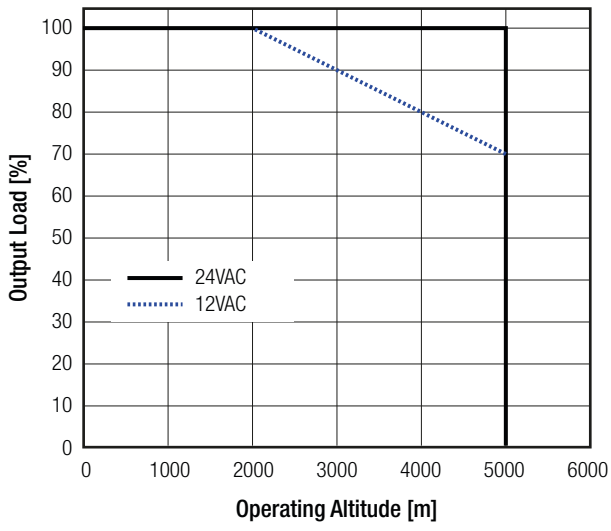


Typical Characteristics

REDIN45-12



REDIN45-24



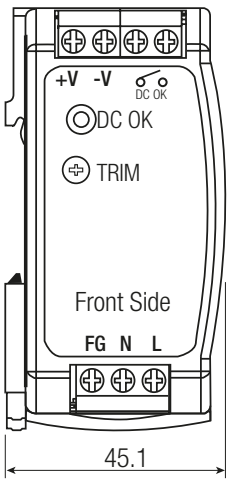
Specifications (measured at Ta= 25°C, 230VAC, full load and after warm up)

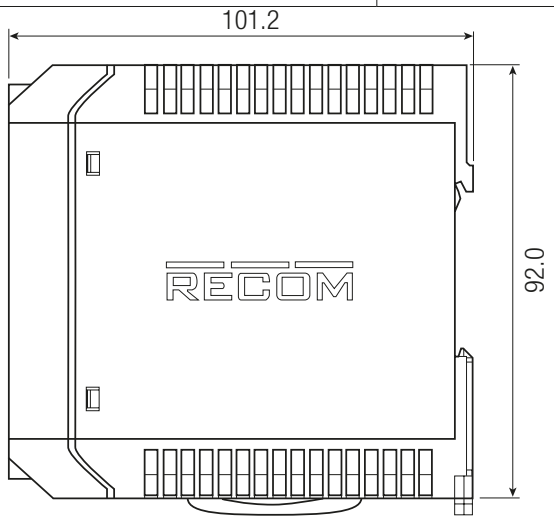
SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	**Report / File Number**	**Standard**
Information Technology Equipment - General Requirments for Safety	E224736-A23	UL60950-1 2nd Edition 2011 CAN/CSA-C22.2 No. 60950-1-07 2nd Edition 2011
Industrial Control Equipment	E470721	CAN/CSA-C22.2 No. 107.1-01, 3rd Edition 2011 UL508, 17th Edition 2013
Information Technology Equipment - General Requirments for Safety	E224736-A23	EN60950-1:2006 + A2:2013 IEC60950-1:2005 2nd Edition + A1:2009
EAC	RU-AT.37.02367	TP TC 004/2011
RoHs2		RoHs 2011/65/EU

EMC Compliance	**Report / Condition**	**Standard / Criterion**
Electromagnetic compatibility of multimedia equipment – Emission Requirements		EN55032:2015
Information technology equipment - Immunity characteristics - Limits and methods of measurement		EN55024:2010 + A1:2015
ESD Electrostatic discharge immunity test	Air +/-2, 4, 8kV, Contact +/-2, 4kV	IEC61000-4-2:2008; Criteria A
Radiated, radio-frequency, electromagnetic field immunity test	3V/m	IEC61000-4-3:2006 + A1:2007 + A2:2010; Criteria A
Fast Transient and Burst Immunity	AC Power Port: +/-1.0kV	IEC61000-4-4:2012; Criteria A
Surge Immunity	AC Power Port: L-N +/-0.5, 1, 2kV L-PE, N-PE +/-0.5, 1, 2, 4kV	IEC61000-4-5:2014; Criteria A
Immunity to conducted disturbances, induced by radio-frequency fields	AC Power Port 3V	IEC61000-4-6:2013; Criteria A
Power Magnetic Field Immunity	50Hz, 1A/m	IEC61000-4-8:2009; Criteria A
Voltage Dips and Interruptions	Voltage Dips >95% Voltage Dips 30% Voltage Interruptions > 95%	IEC61000-4-11:2004; Criteria A IEC61000-4-11:2004; Criteria A IEC61000-4-11:2004; Criteria B
Limits of Harmonic Current Emissions		EN61000-3-2:2014, Class A
Limits of Voltage Fluctuations & Flicker		EN61000-3-3:2013
Limitations on the amount of electromagnetic intererence allowed from digital and electronic devices		47 CFR FCC Part 15 Subpart B 2010-01-07, Class B

DIMENSION and PHYSICAL CHARACTERISTICS		
Parameter	**Type**	**Value**
Material	case	plastic, (UL94V-0)
Dimension (WxHxD)		45.1 x 92.0 x 101.2mm
Weight		332g

Dimension Drawing (mm)





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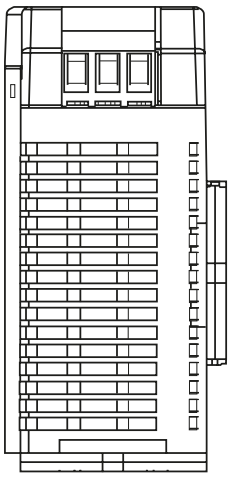
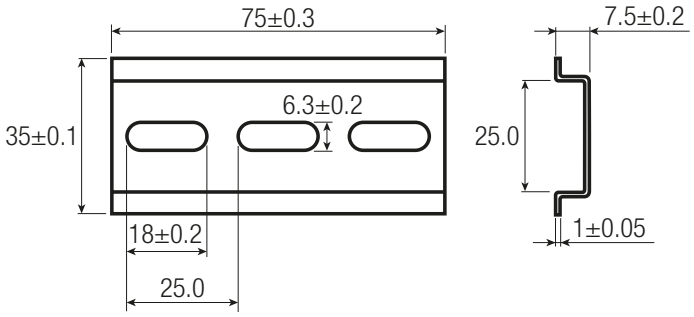
Specifications (measured at Ta= 25°C, 230VAC, full load and after warm up)

Dimension Drawing (mm)

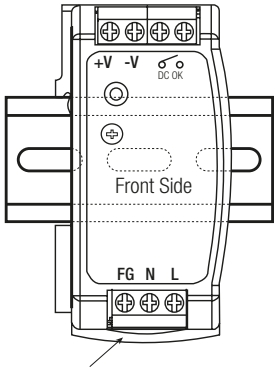


DIN-RAIL mounting bracket
(75mm) included

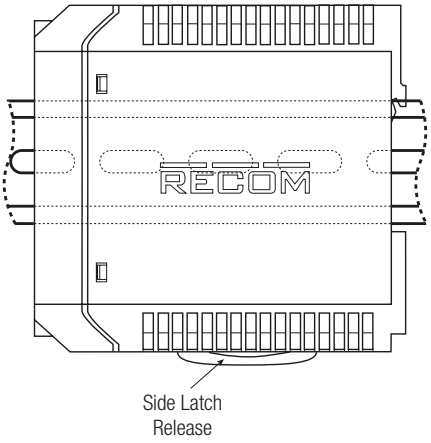


INSTALLATION

END MOUNTING



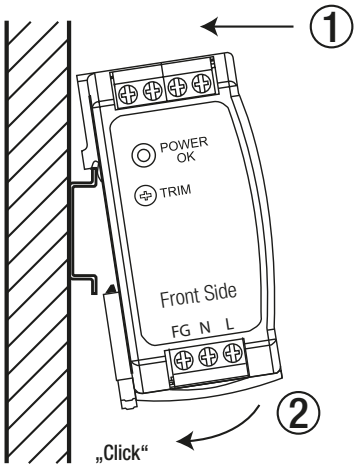
SIDE MOUNTING



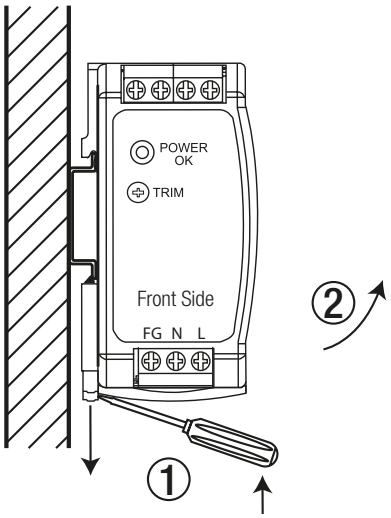
Tolerance: ±0.5mm

Mounting Instruction

Mounting



Releasing



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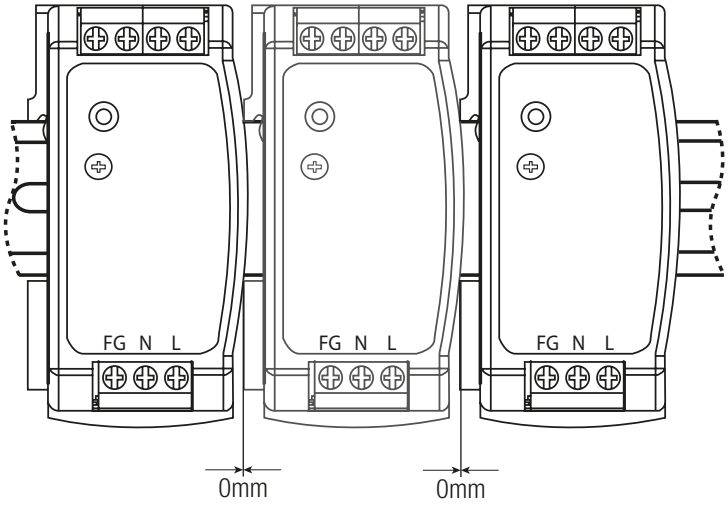
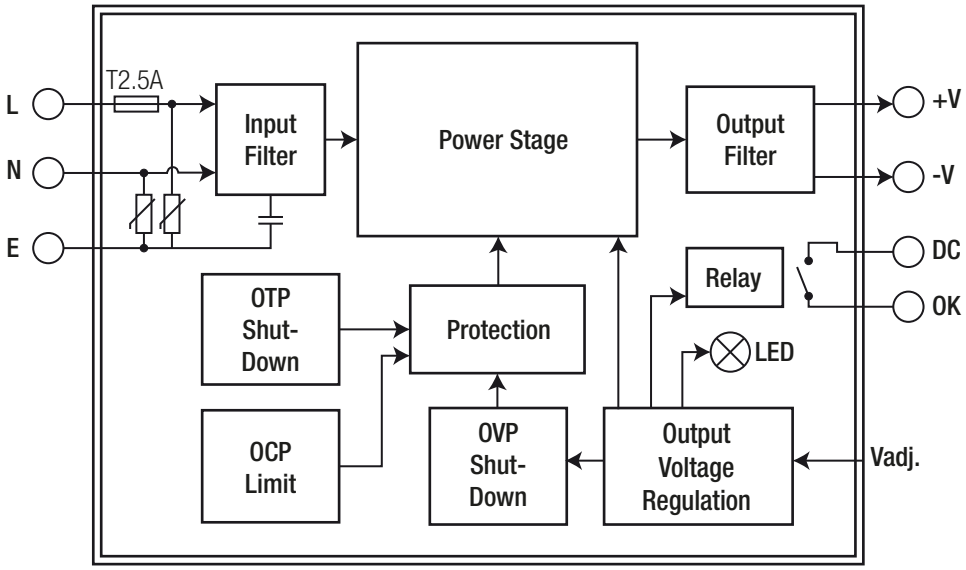
Specifications (measured at Ta= 25°C, 230VAC, full load and after warm up)

Mounting Multiple Power Supplies



no spacers between
supplies required

BLOCK DIAGRAMM



PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	cardboard box	116.0 x 97.0 x 54.0mm
Packaging Quantity		1pcs
Storage Temperature Range		-30°C to +85°C
Storage Humidity		10% - 90% RH