

# 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

# DIN Rail Series



## REDIN45

45 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 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

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

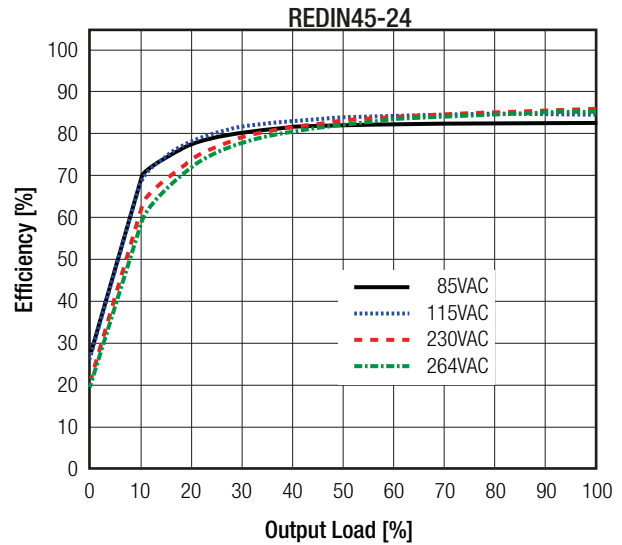
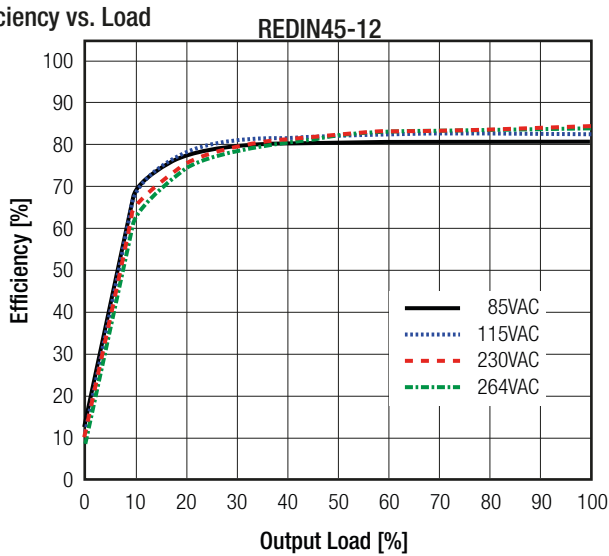
BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	all operating conditions	85VAC		264VAC
max. Input Voltage	max. 1 second			300VAC 375VDC
Output Voltage Adjustment (Factory Setting) <sup>(1)</sup>	12Vout 24Vout		12-15VDC (12V±5%) 24-28VDC (24V±5%)	
Input Current	full load, 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
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 <sup>(2)</sup>	12Vout 24Vout		60mVp-p 75mVp-p	
Over Load Capability	all operating conditions	140% for 5 seconds max.		
<b>Notes:</b>				
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				
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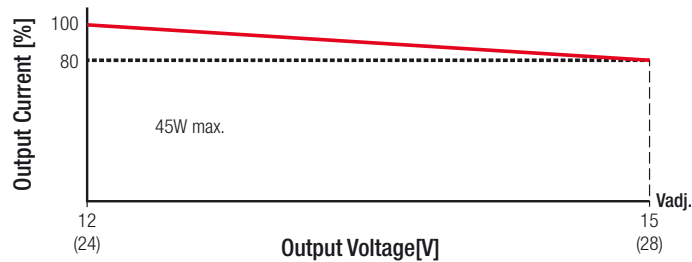
- CB-Report
- UL60950-1 certified
- IEC/EN60950-1 certified
- CSA C22.2 No. 60950-1-07 certified
- UL508 certified
- CAN/CSA-C22.2 No. 107.1-01 certified
- EN55024 certified
- EN55032 certified

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

Efficiency vs. Load



Vadj. Derating



### REGULATION

Parameter	Condition	Value
Line Regulation		$\pm 0.1$ typ. / $\pm 1\%$ max.
Load Regulation		0.1 typ. / 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: Transienst Response + E-CAP loading 3300 $\mu\text{F}$ . 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 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 Voltage Category		OVCII	
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	tested for 1 minute	I/P to O/P	3.75kVAC
		I/P to FG	1.88kVAC
		O/P to FG	0.5kVAC

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

#### PROTECTION

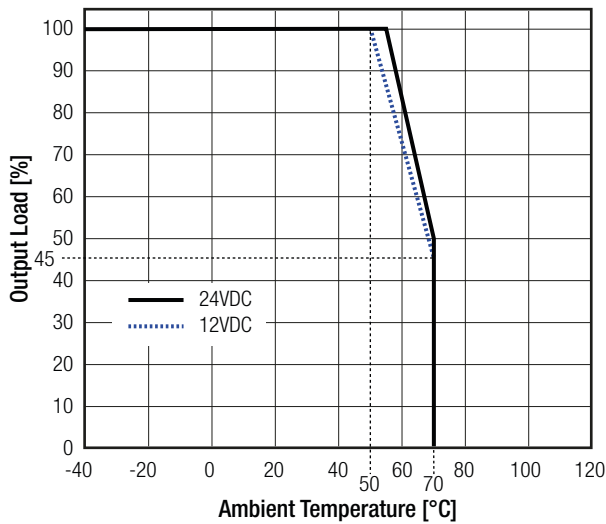
Parameter	Condition	Value
Isolation Resistance	500VDC, 70% RH, I/P to O/P; I/P to FG; O/P to FG	100M $\Omega$ min.
Leakage Current	240VAC	<1.0mA
Power OK LED	Relay Contacts LED/Relay	1A, 30VDC / 120VAC ON if $V_{out} = 11-16\text{V}$ (12V) / 22-30V (24V)

#### ENVIRONMENTAL

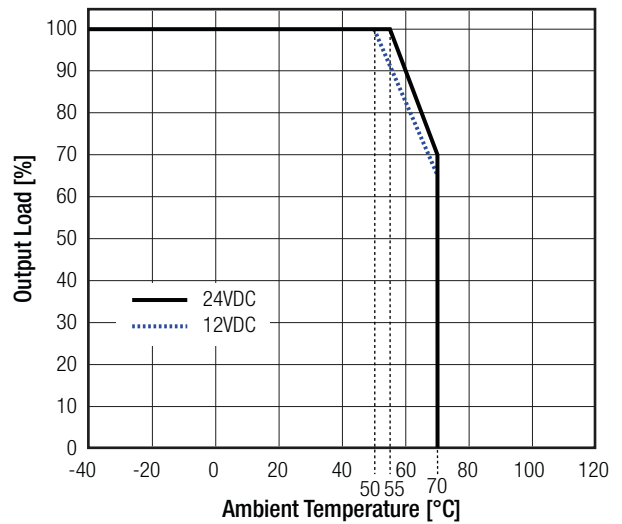
Parameter	Condition	Value
Operating Temperature Range	with derating	-20 $^\circ\text{C}$ to +70 $^\circ\text{C}$ (see graph)
Operating Humidity	non-condensing	20% - 90%RH
Vibration		10-500Hz 2G, 60min.
Shock	3 times each axis	10G / 11ms, along X, Y and Z axis
Altitude	see derating graph	5000m
MTBF (+25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

#### Derating Graph

$V_{in} \leq 100\text{VAC}$

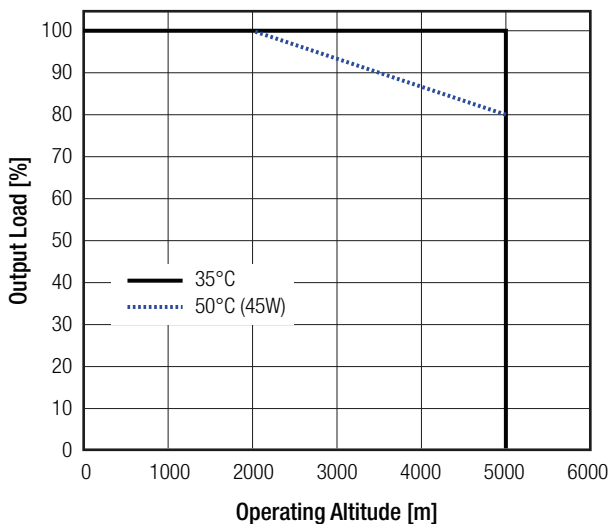


$V_{in} > 100\text{VAC}$

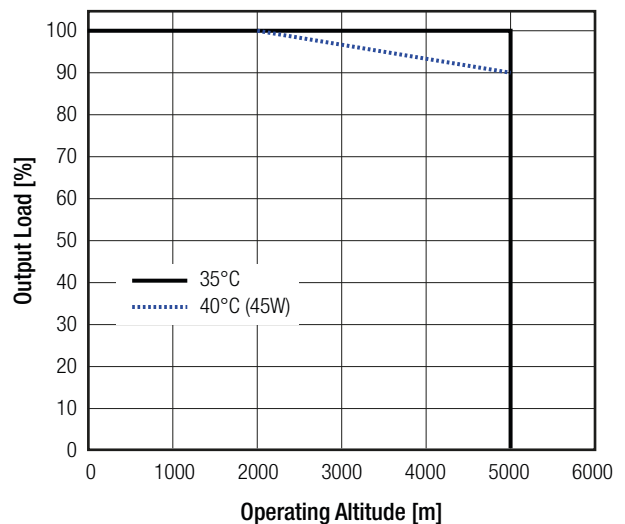


#### Typical Characteristics

REDIN45-12



REDIN45-24



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

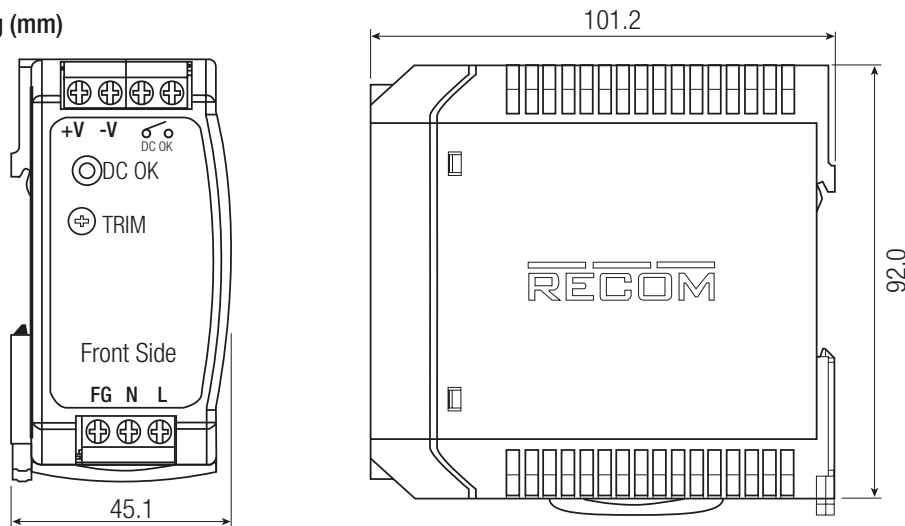
SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment - General Requirements for Safety	E224736-A23	UL60950-1 2nd Edition 2011 CAN/CSA-C22.2 No. 60950-1-07 2nd Edition 2011
Industrial Control Equipment	E470721	CAN/CSA-C22.2 No. 107.1-01, 3rd Edition 2011 UL508, 17th Edition 2013
Information Technology Equipment - General Requirements 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 interference 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

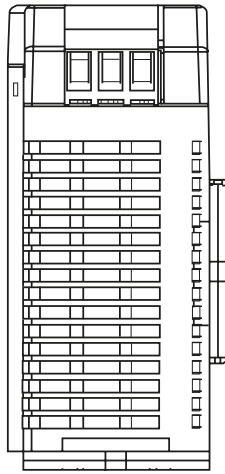
#### Dimension Drawing (mm)



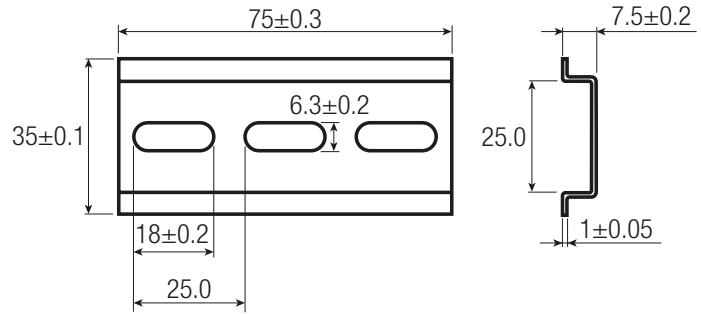
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Specifications (measured at  $T_a = 25^\circ\text{C}$ , 230VAC, full load and after warm up)

### Dimension Drawing (mm)

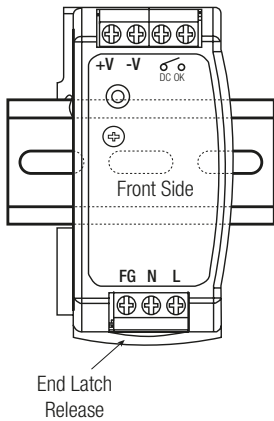


### DIN-RAIL mounting bracket (75mm) included

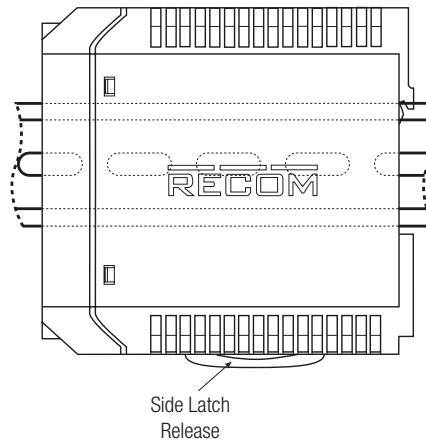


### INSTALLATION

#### END MOUNTING



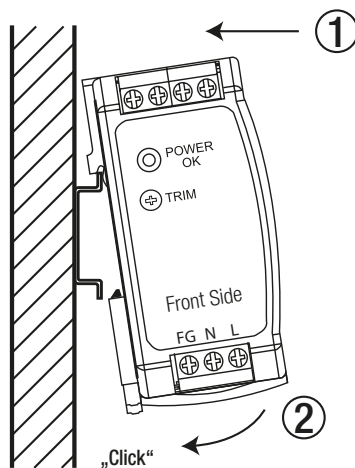
#### SIDE MOUNTING



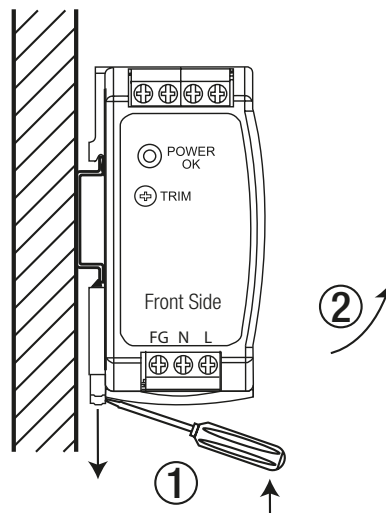
Tolerance:  $\pm 0.5\text{mm}$

### Mounting Instruction

#### Mounting



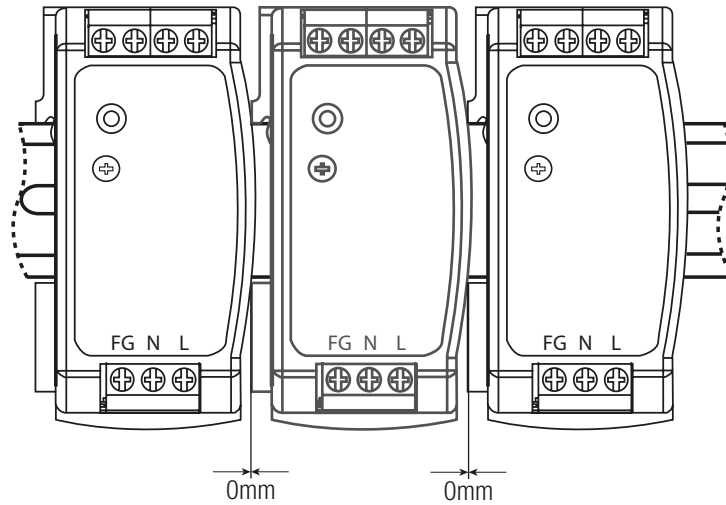
#### Releasing



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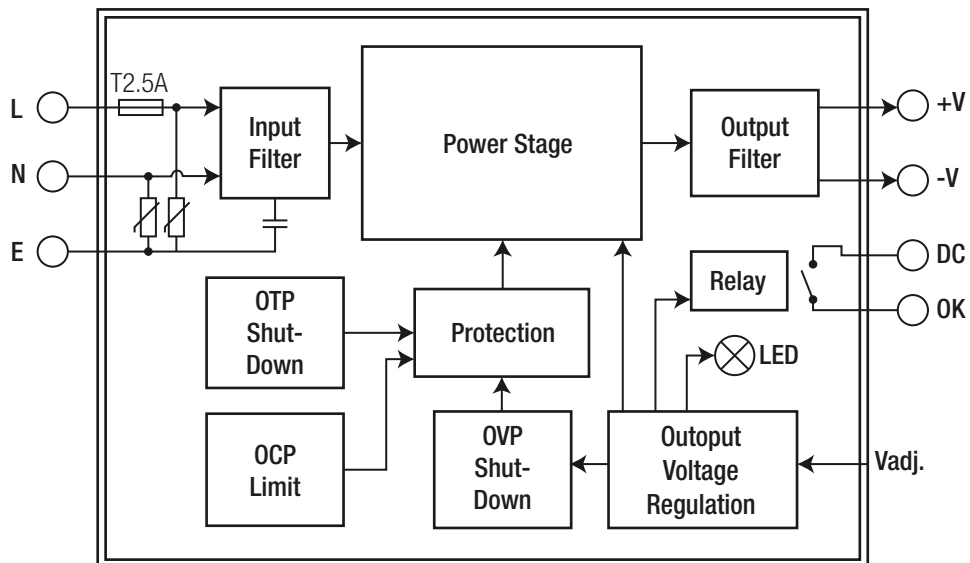
**Specifications** (measured at  $T_a = 25^\circ\text{C}$ , 230VAC, full load and after warm up)

**Mounting Multiple Power Supplies**



no spacers between supplies required  
Kein Minimumabstand benötigt

**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

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