

## RSPC Series 24V DIN Rail AC/DC Power Supplies



### RUGGED INDUSTRIAL POWER SUPPLY

The RSPC 24V series is a family of high performance industrial DIN-rail power supplies for harsh environments. These compact modules are the best choice for reliable industrial systems and machines. For system applications all models provide a Power-Good signal.

The RSPC 24V series power supplies complies with the latest safety and EMC standards for industrial environments and include ATEX EN 60079 certification for applications in hazardous locations.

When used in combination with the optional battery charge controllers and battery packs, RSPC power supplies make a compact and reliable UPS system.



RSPC Series DIN Rail AC/DC Power Supplies

## Key Features

### Environment

Rugged metal case for harsh industrial environments  
Wide operating temperature -25°C ~ +70°C (-13°F ~ +158°F)

### Power

Selectable input voltage range 100-120VAC / 220-240VAC  
240W and 480W 24VDC output power systems  
Output voltage adjustable

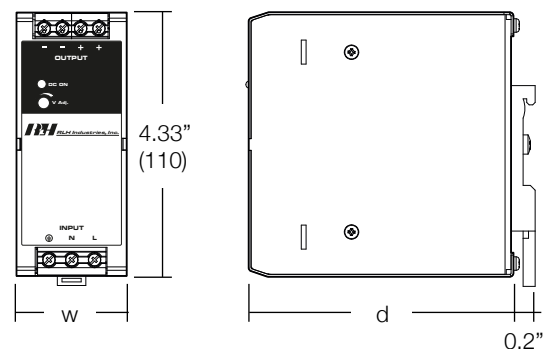
### Benefits

Overload and over-temperature protection  
Power boost up to 120%  
Power-Good signal  
Shock and vibration proof

### Compliances

UL Listed  
REACH  
ROHS  
International safety approval package

## Dimensional Information



Model	Width (W)	Height	Depth (D)	Weight
240 Watt	2.36"	4.33"	4.33"	750g
480 Watt	5.61"	4.33"	4.53"	1950g

## Setting Input Voltage Switch

### 115/230VAC Input Voltage Switch

Set the input power switch before attaching wires.


Setting	Voltage Range
<b>115VAC</b>	85-132VAC
<b>230VAC</b>	187-264VAC

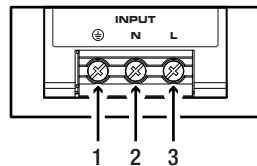


## Connection Terminals

### AC Input Terminals

The AC input terminals are identified by the products label. View the chart below for a sample wiring.

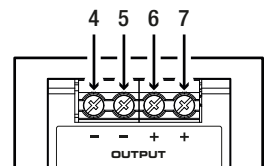
No.	Description
<b>1</b>	FG  - Ground
<b>2</b>	N - Neutral
<b>3</b>	L - Live



### DC Output Terminals

The DC output terminals are identified by the products label. View the chart below for the sample wiring.

No.	Description
<b>4,5</b>	DC Output V-
<b>6,7</b>	DC Output V+
<b>8</b>	DC OK Signal



## Connection and Ambient Conditions

<b>Operating Temperature Range</b> (with natural air convection cooling)	-25°C up to +70°C (-13°F to +158°F)
<b>Output Power Derating</b>	Above +60°C up to +70°C ambient temperature → 2.5%/°K Below 100VAC input voltage → 3.3%/V Above Vout nominal → 5%/V(>24V)
<b>Boost Power</b>	120% (max) of rated output power for unlimited time
<b>Boost Power Operating Temp. Range</b> (with natural air convection cooling)	-25°C up to +50°C (-13°F to +122°F)
<b>Output Power Derating in Boost Power</b> (below +50°C operating ambient temperature and Vout nominal only)	Below 100VAC input voltage → no Boost Power Between 187VAC and 220VAC input voltage → 0,6%/V Above Vout nominal → no Boost Power
<b>Storage Temperature Range</b>	-40°C to +85°C max (-40°F to +185°F max)
<b>Wire Recommendation</b>	Input AWG: 17 - 10 Output AWG: 16 - 10
<b>Connections</b>	Screw type terminals. Recommended tightening torque 0.5Nm to 0.6Nm
<b>Signal Connector</b>	2-pin Terminal for Phoenix Contact MC 1,5/2-ST3,5 (AWG: 28 - 14)
<b>Protective Earth</b>	The non-fused protective earth connection must be connected to the input connector terminal (protection class 1)
<b>Case Material</b>	Aluminum (chassis) and stainless steel (cover); IP20
<b>Mounting Position</b>	Vertical on DIN rail, optimal cooling performance must be observed. Leave a free space of minimum 50mm (2in.) above and below the power supply.

## General Specifications

<b>Temperature Ranges</b>	Operating	-25°C to +70°C (-13°F to +158°F) max
	Output current derating above 60°C ambient	2.5% / °C
	Storage (non operating)	-40°C to +85°C (-40°F to +185°F) max
<b>Cooling</b>	Convection cooling, no internal fan	
<b>Humidity</b> <i>non condensing</i>	95% rel. H max	
<b>Temperature Coefficient</b>	0.02% /K	
<b>Efficiency</b>	85-93%	
<b>Reliability, Calculated MTBF at +25°C - IEC-61709</b>	RSPC-240-24 models	>1.7 Mio h
	RSPC-480-24 models	>1.4 Mio h

## Input Specifications

<b>Input Voltage</b>	Nominal ranges	100-120 / 220-240VAC
	<i>(selected by voltage switch)</i>	
	Effective ranges	85-132 / 187-264VAC
	Output power derating at input <100VAC	3.3 %/V
<b>Input Voltage Frequency</b>	47-63Hz	
<b>Harmonic Limits</b>	EN61000-3-2	
<b>Holdup Time</b>	10 ms min.	
<b>Inrush Current</b>	40A	
<b>Recommended circuit breaker, Character C or fuse, slow blow type</b>	RSPC-240-24 models	10.0 - 16.0A
	RSPC-480-24 models	16.0 - 25.0A
<b>Rated Current</b>	See <i>Ordering Information</i> section for rated current	

## Output Specifications

<b>Output Voltage Adj. Range</b>	24-28VDC	Output power derating above 24VDC: 5%/V
<b>Boost Output Current</b>	120% (at 24VDC output voltage) continuous at <+50°C ambient temperature	
	- Power derating above 50°C ambient temp.	2%/°C
	- Power derating at input <115VAC	1.3%/V
	- Power derating at input <220VAC	0.6%/V (at upper input voltage range)
<b>Regulation</b>	Input variation	1% max
	Load variation (0-100%)	1% max
<b>Ripple and Noise</b> (20MHz bandwidth)	100mVp-p typ. (200mVp-p max.)	
<b>Overload Protection</b>	120-140% of lout nom. constant current	
<b>Short Circuit Current</b>	90% of lout nom. (typ.), foldback	
<b>Output Overvoltage Protection</b>	45V	
<b>Over-temperature Protection</b>	Switch off at over-temperature, automatic restart	
<b>Power Back Immunity</b>	35V (40V for 1 sec.)	
<b>Power OK Signal</b>	Trigger threshold	21.0 - 22.5V
	Output Signal	Open collector 10mA max.



## Safety and Compliance Information

<b>Safety Standards</b>	IEC/EN 60950-1, UL 60950-1, UL 508, EN 50178, EN 60204-1, EN 61558-2-6, EN 61558-2-16, EN 60079-15 II3G EX nA IIC T4	
<b>Safety Approval</b>	CB Scheme	IEC 60950-1
	UL Listing	UL 508 file E366237
	UL Recognition	UL 60950-1 file E366237
<b>Environmental Compliance</b>	Reach	
	ROHS	
<b>Electromagnetic Compatibility (EMC)</b>	Emissions	EN 61000-6-3, EN 61204-3
	Immunity	EN 61000-6-2, EN 61204-3
<b>Class of Protection</b>	Safety Class 1 (IEC 536)	
<b>Degree of protection</b>	IP 20 (IEC/EN 60529)	
<b>Enclosure Material</b>	Aluminum (chassis) / stainless steel (cover)	

## Ordering Information

Rated Output Power Max.	Part Number	Rated Output	Output Voltage Adjustment Range **	Recommended Circuit Breaker (Characteristic C)	Rated Input Current @ VIN =		AC-Input Voltage Range
					100VAC	240VAC	
<b>240 Watt</b>	<b>RSPC-240-24</b>	24VDC / 10A	24 - 28VDC	10-16A	5.1A	2.2A	* Rated 100 – 220 / 220-240VAC 50 – 60Hz
<b>480 Watt</b>	<b>RSPC-480-24</b>	24VDC / 20A	24 - 28VDC	16-25A	9.1A	3.6A	* Operational 85 – 132 / 187- 264VAC 47 – 63Hz

\* The Input voltage tolerance is  $\pm 10\%$  of rated voltage.

\*\* The Output is adjustable by potentiometer with an insulated screwdriver.  
If the output voltage is higher than nominal, the maximum output current should be reduced.

