

FEATURES

- Universal 85 - 264V AC or 120-370 VDC
- 150% peak load output for 3 seconds
- Active PFC
- Slimline design: width 32mm
- Efficiency up to 94%
- DC OK function
- Operating temperature range - 40°C to +70°C
- DC ON output status indicator LED
- Output short circuit, over-current, over-voltage protection.
- EMI performance meets. CISPR32 / EN55032 CLASS B
- Safety according to IEC/EN/UL62368, UL61010, UL508

RS PRO Embedded Switch Mode Power Supplies

- 2205404
- 2205405
- 2205406



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Embedded Switch Mode Power Supplies (SMPS)

Product Description

AC-DC DIN rail power supply suitable for a wide range of Industrial, Machinery and Instrumentation applications. Featuring a universal AC input this cost-effective, slimline design is available in a range of standard outputs. Complying with International and European EMC and safety standards IEC/EN/UL62368, UL61010, UL508

General Specifications

Model	AC-DC 120W power supply
Mounting Type	DIN Rail mount
MTBF	MIL-HDBK-217F@25°C > 300,000 h
Applications	Industrial control systems, instrumentation and machinery equipment

RS Stock#	Input Voltage	Output Voltage	Output Current	Adj'range (V)	Wattage	Transient Output Power*3S	Efficiency (Typ)
2205404	85 to 264V ac 120 to 370V dc	12V	10A	11.8-14V	120W	180W	93.5%
2205405	85 to 264V ac 120 to 370V dc	24V	5A	23.5-28V	120W	180W	94%
2205406	85 to 264V ac 120 to 370V dc	48V	2.5A	47-53V	120W	180W	94%

Input Specifications

Input Specification	
Voltage Range	85 to 264V ac, 120 to 370V dc
Frequency	47 to 63Hz
AC Current Rating	1.5A/115V ac, 0.75A/230V ac
Inrush Current	15A/ 115V ac, 30A / 230V ac
Leakage	<1mA
Power Factor	0.98 115Vac, 0.94 230Vac
Standby power consumption	2W

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Output Specifications

Output Specification			
MPN	2205404	2205405	2205406
Output voltage	12V	24V	48V
Trim range	11.8-14V	23.5-28V	47-53V
Rated Current	10A	5A	2.5A
Ripple & Noise (max.) *	100mV	100mV	200mV
Rated Power	120W	120W	120W
Peak output power 3S	180W	180W	180W
Line Regulation typ.	±0.5%	±0.5%	±0.5%
Load Regulation typ.	±1%	±1%	±1%
Max Capacitive load μF	80,000μF	50,000μF	30,000μF
Minimum Load	0%	0%	0%

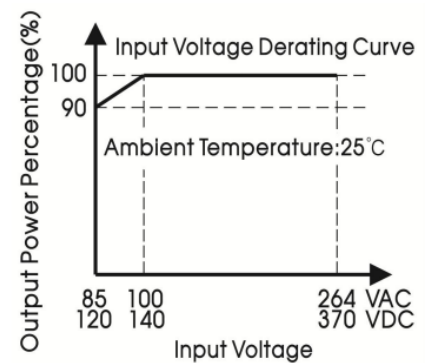
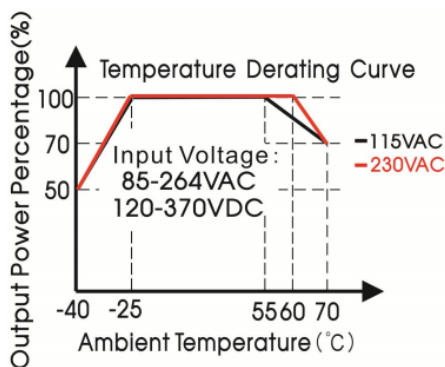
Hold Up Time (Typ)	20ms					
DC OK Signal*	30VDC/1A Max					
Over Voltage Protection	12V output ≤18V (Hiccup, self-recovery after the abnormality is removed)					
	24V output ≤35V (Hiccup, self-recovery after the abnormality is removed)					
	48V output 60V (Hiccup, self-recovery after the abnormality is removed)					
Over-current Protection	105% - 200% I _o , self-recovery					
Short Circuit Protection	Constant current hiccup mode (constant current mode works 1s and stop 10s) continuous, self-recovery.					
Over-temperature Protection	230VAC, 70% load	Over-temperature protection start	-	90	-	°C
		Over-temperature protection release	60	-	-	
Isolation	3KVAC					
<p>Note: 1.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information; 2.*DC OK Signal: When the output voltage is normal, the relay is connected. When the output voltage is abnormal (<90%V_o), the relay is disconnected.</p>						

Embedded Switch Mode Power Supplies (SMPS)

General Specifications

Item	Operating Conditions		Min	Typ	Max.	Unit	
Isolation	Input-Output	Electric strength test for 1min., leakage current <15mA	3000	-	-	VAC	
	Input-Earth		1500	-	-		
	Output-Earth		500	-	-		
Insulation Resistance	Input-Earth	At 500VDC	50	-	-	MΩ	
	Input-Output		50	-	-		
	Output-Earth		50	-	-		
Operating Temperature			-40	-	+70	°C	
Storage Temperature			-40	-	+85		
Storage Humidity	Non-condensing		20	-	95	%RH	
Operating Humidity			-	-	95		
Power Derating	Operating temperature derating	-40 to -25°C	3.34	-	-	% / °C	
		+55 to +70°C	85VAC-164VAC				2.0
		+60 to +70°C	165VAC-264VAC				3.0
	Input voltage derating	85VAC-100VAC	0.67	-	-	%/VAC	
Safety Standard			Meet IEC/EN/UL62368/UL61010/UL508				
Safety Certification			EN62368/UL61010				
Safety Class			CLASS I (PE and must be connected)				
MTBF	MIL-HDBK-217F@25°C		>300,000 h				

Derating



Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves.

EMC Specifications

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic Current	IEC/EN61000-3-2 CLASS D	
Immunity	ESD	IEC/EN 61000-4-2 Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$	Perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m	Perf. Criteria A
	EFT	IEC/EN 61000-4-4 $\pm 4\text{KV}$	Perf. Criteria A
	Surge	IEC/EN 61000-4-5 line to line $\pm 2\text{KV}$ /line to ground $\pm 4\text{KV}$	Perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	Perf. Criteria A
	DIP (AC input)	IEC/EN61000-4-11 0%, 70%	Perf. Criteria B

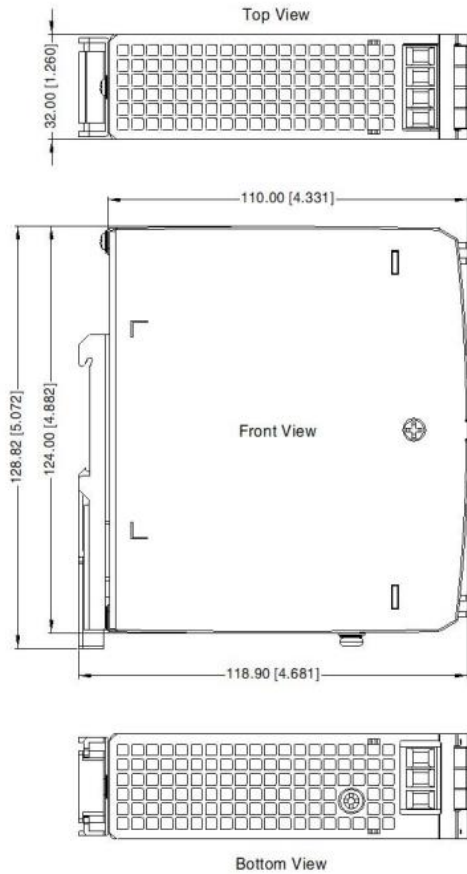
Mechanical Specifications

Case Material	Metal (AL1100, SPCC) and Plastic (PC940)
Dimensions	110.00 x 32.00 x 124mm
Weight	490g \pm 10% (Typ.)
Cooling Method	Free air convection

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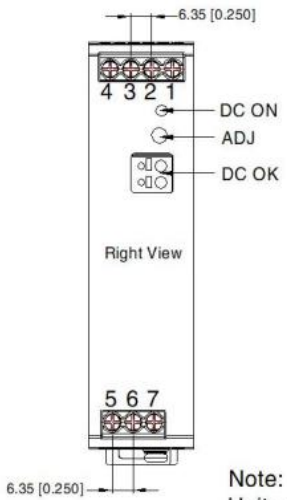


Dimensions and recommended layout



THIRD ANGLE PROJECTION

Pin-Out	
Pin	Mark
1	-Vo
2	-Vo
3	+Vo
4	+Vo
5	AC(N)
6	AC(L)
7	



Note:
 Unit: mm[inch]
 DC ON: Output status indicator LED
 ADJ: Output adjustable resistor
 Wire range: 26-10 AWG
 Tightening torque: Max 0.4 N·m
 Mounting rail: TS35, rail needs to connect safety ground
 General tolerances: ± 1.00 [± 0.039]



Approvals

Safety Standards	Meet IEC/EN/UL62368/UL61010/UL508
Safety Certification	EN62368/UL61010 (Pending)
Safety Class	Class I (PE and must be connected)

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity
2. The room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m.
3. All index testing methods in this datasheet are based on our company corporate standards.
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability.
5. Products are related to laws and regulations: see "Features" and "EMC".
6. The out case needs to be connected to the earth of system when the terminal equipment in operating.
9. The output voltage can be adjusted by the output adjustable resistance ADJ, turn it down clockwise.