



ES-100R Single Output Switching Power Supply

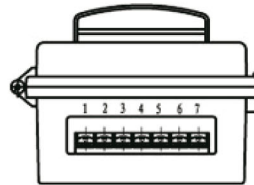
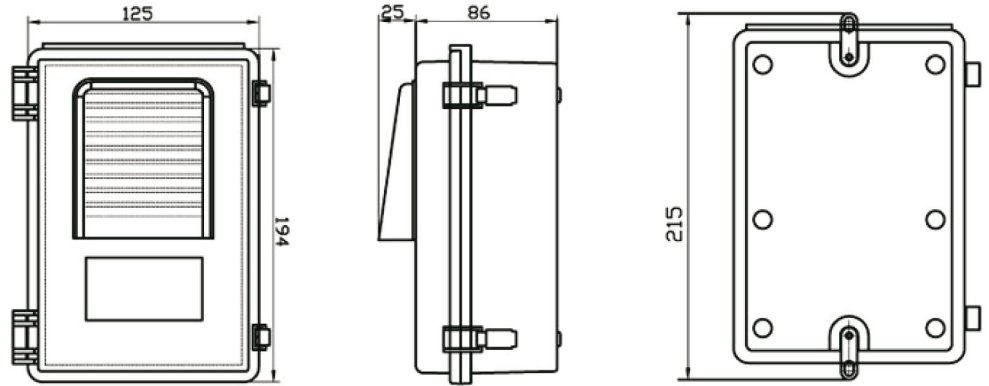
Features

- High efficiency, high reliability, water proof
- AC input range selected by switch
- 100% full load burn-in test
- PROTECTION: Short circuit/Over load/Over voltage
- Forced air cooling by built in DC fan
- Built-in cooling Fan ON-OFF control
- Fixed switching frequency at 66KHz
- 1 year warranty
- Dimensions: 194*126*107mm(L*W*H)

MODEL		ES-100R-5	ES-100R-12	ES-100R-15	ES-100R-24
OUTPUT	DC Voltage	5V	12V	15V	24V
	Voltage Tolerance	±1%	±1%	±1%	±1%
	Rated Current	18A	8.5A	6.7A	4.2A
	Current Range	0-18A	0-8.5A	0-6.7A	0-4.2A
	Rated Power	90W	102W	100.5W	100.8W
	Ripple & Noise	80mVp-p	100mVp-p	100mVp-p	100mVp-p
	DC Adjustment Range	±10%	±10%	±10%	±10%
	Setup, Rise, Hold Time	300ms, 150ms, 20ms			
INPUT	Voltage Range	90~132VAC/180~264 VAC 47~63Hz			
	AC Current	1.9A/115 1A/ 230 V			
	Efficiency	80%	83%	83%	85%
	Inrush Current	Cold start 50A/230V			
	Leakage Current	<1mA/240VAC			
PROTECTION	Over Load	115%~160% Protection: Current limiting, recovers automatically after fault condition is removed			
	Over Voltage(V)	115%~135% Protection: Hiccup mode, recovers automatically after fault condition is removed			
ENVIRONMENT	Working Temp., Humidity	-10°C+60°C, 20%~90 %RH			
	Storage Temp., Humidity	-20°C+85°C, 10%~95 %RH			
	Vibration	10~500Hz, 2G 10min./1cycle, period for 60min, each along X, Y, Z axes			
SAFETY	Withstand Voltage	I/P-O/P: 1.5KVAC I/P-FG 1.5KVAC O/P-FG: 0.5KVAC			
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC			
STANDARD	Safety Standard	Design refer to UL1012, EN60950			
	EMC Standard	Design refer to EN55022, EN55024, EN61000, IEC801-2,3,4, IEC555-2			
OTHERS	Weight				
	Packing				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.				
	2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μ & 47μ parallel capacitor.				
	3. Tolerance: includes set up tolerance, line regulation and load regulation.				
	4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.				

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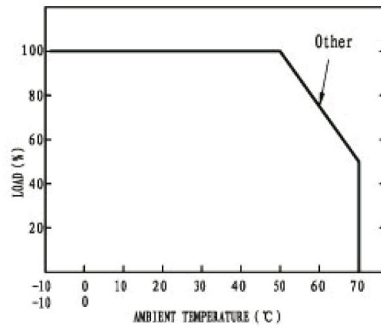
Outline and installation dimension



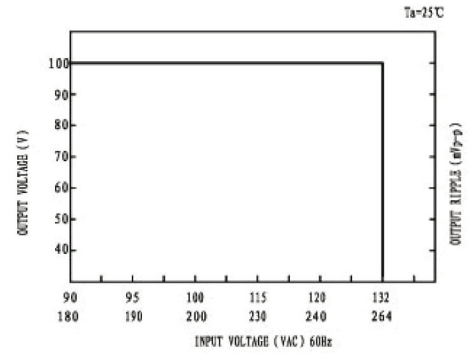
Terminal Pin No. Assignment:

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4, 5	DC OUTPUT -V
2	AC/N	6, 7	DC OUTPUT +V
3	FG		

Derating curve



Static characteristics





ES-100R Single Output Switching Power Supply

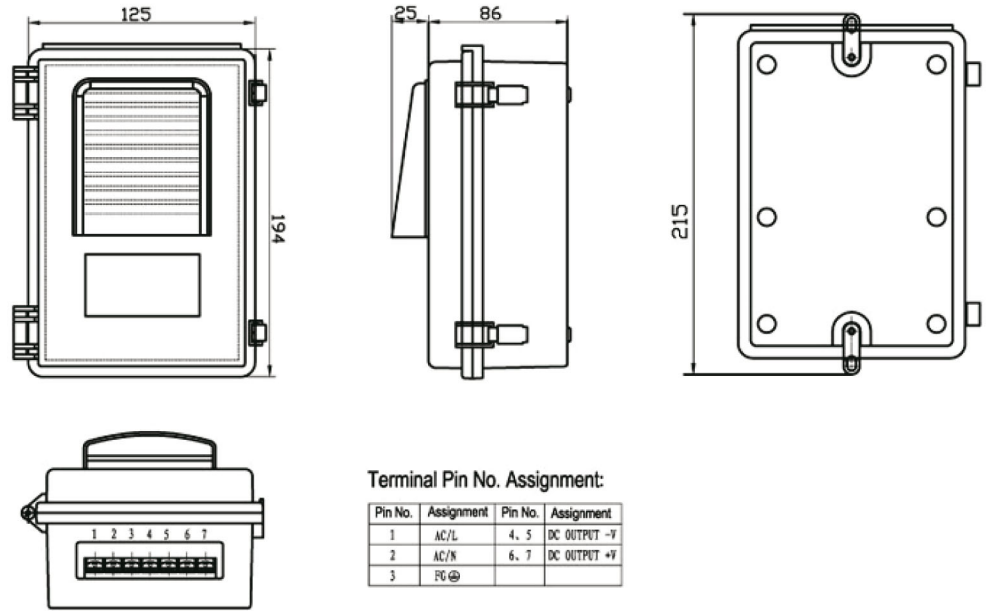
Features

- Protections: Short circuit/Over load/Over voltage
- Forced air cooling by built in DC fan
- Built-in cooling Fan ON-OFF control
- Built in LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at 65KHZ
- High efficiency, long life, high reliability, water proof
- 1 year warranty
- Dimensions: 194*127*107mm (L*W*H)

MODEL	ES-150R-5	ES-150R-12	ES-150R-15	ES-150R-24	
OUTPUT	DC Voltage	5V	12V	15V	24V
	Voltage Tolerance	±1.0%	±1.0%	±1.0%	±1.0%
	Rated Current	25A	12.5A	10A	6.3A
	Current Range	0-25A	0-12.5A	0-10A	0-6.3A
	Line Regulation	±0.5%	±0.5%	±0.5%	±0.5%
	Load Stability	±0.5%	±0.5%	±0.5%	±0.5%
	Rated Power	125W	150W	150W	151.2W
	Ripple & Noise	100mVp-p	120mVp-p	120mVp-p	120mVp-p
	DC Adjustment Range	4.75-5.5V	10.8-13.2V	13.5-16.5V	21.6-26.4V
	Setup, Rise, Hold Time	800ms, 20ms/230VAC 1200ms, 30ms/115VAC at full load			
Hold Time	28ms/230VAC 20ms/115VAC at full load				
INPUT	Voltage Range	90~132VAC /180~264 selected by switch, 248~373VDC			
	AC Current	3A/115VAC 2A/230VAC			
	Frequency	47~63Hz			
	Efficiency	80%	83%	84%	86%
	AC Current	3A/115VAC 2A/230VAC			
	Inrush Current	Cold start 40A/230VAC			
	Leakage Current	<2mA / 240VAC			
PROTECTION	Over Load	110~150% Protection: Hiccup mode, recovers automatically after fault condition is removed			
	Over Voltage(V)	5.75~6.75V	13.8~16.2V	17.25~20.25V	27.6~32.4V Protection: Hiccup mode, recovers automatically after fault condition is removed
ENVIRONMENT	Working Temp., Humidity	-10°C+70°C, 20~90% RH			
	Storage Temp., Humidity	-20°C+85°C, 10~95% RH			
	Vibration	10~500Hz, 2G 10min./1 cycle, period for 60 min. Each along X, Y, Z axes			
SAFETY	Withstand Voltage	I/P-O/P: 3KVAC I/P-O/P: 1.5KVAC O/P-FG: 0.5KVAC			
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC			
STANDARD	Safety Standard	Design refer to UL1012, EN60950			
	EMC Standard	Design refer to EN55022 CLASSA			
OTHERS	Weight				
	Packing				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.				
	2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μ & 47μ parallel capacitor.				
	3. Tolerance: includes set up tolerance, line regulation and load regulation.				

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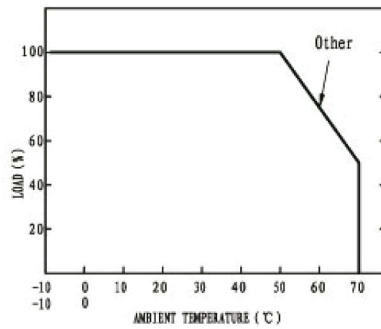
Outline and installation dimension



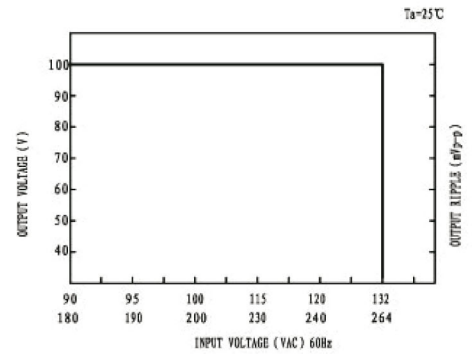
Terminal Pin No. Assignment:

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4, 5	DC OUTPUT -V
2	AC/N	6, 7	DC OUTPUT +V
3	PG⊕		

Derating curve



Static characteristics





ES-100R Single Output Switching Power Supply

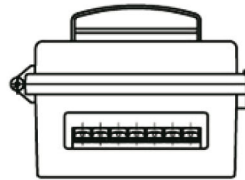
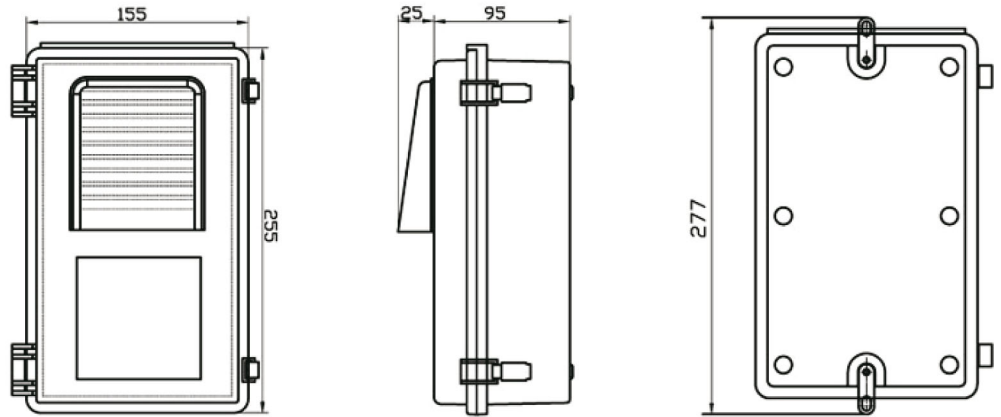
Features

- High efficiency, high reliability, low cost, water proof
- Universal AC input/ full range
- 100% full load burn-in test
- Protections: Short circuit/ Over load/ Over voltage Forced air cooling by built in DC fan
- Built-in cooling Fan ON-OFF control
- 1 year warranty
- Dimensions: 255*155*120mm(L*W*H)

MODEL	ES-250R-12	ES-250R-13.5	ES-250R-15	ES-250R-24	ES-250R-27	ES-250R-48	
OUTPUT	DC Voltage	12V	13.5V	15V	24V	27V	48V
	Voltage Tolerance	±1%	±1%	±1%	±1%	±1%	±1%
	Rated Current	20A	18.5A	16.6A	10A	9.3A	5.2A
	Current Range	0-20A	0-18.5A	0-16.6A	0-10A	0-9.3A	0-5.2A
	Rated Power	240W	250W	249W	240W	251W	250W
	Ripple & Noise	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
	DC Adjustment Range	-6%, +10%	-12%, +11%	-10%, +20%	-16%, +10%	-4%, +18%	-15%, +17%
	Setup, Rise, Hold Time	200ms, 50ms, 20ms at full load					
INPUT	Voltage Range	90~132 VAC/180~264VAC 47~63 Hz??selected by switch 254~370VDC					
	AC Current	5.5A/115 V 3.5A/ 230 V					
	Efficiency	78%	79%	78%	82%	82%	83%
	Inrush Current	50A/115V 50A/230V					
	Leakage Current	<3.5 mA/240VAC					
PROTECTION	Over Load	105%~135% Protection: Current limiting, recovers automatically after fault condition is removed					
	Over Voltage	115%~135% Protection: voltage limiting, recovers automatically					
	Over Temp.	RTH3≥45°C FAN ON≤40°C fan off, ≥85°C output shutdown					
ENVIRONMENT	Working Temp., Humidity	-10°C~+50°C; 20%~90 %RH					
	Storage Temp., Humidity	-20°C~+85°C; 10%~95 %RH					
	Vibration	10~500Hz, 2G 10min./1cycle, period for 60min, each along X, Y, Z axes					
SAFETY	Withstand Voltage	I/P-O/P: 1.5KVAC I/P-O/P: 1.5KVAC O/P-FG: 0.5KVAC					
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC					
STANDARD	Safety Standard	Design refer to UL1950					
	EMC Standard	Design refer to FCC Part15 J Conduction Class A					
OTHERS	Weight	0.58Kg					
	Packing	20pcs/12.0Kg/0.64CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.						
	2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μ & 47μ parallel capacitor.						
	3. Tolerance: includes set up tolerance, line regulation and load regulation.						

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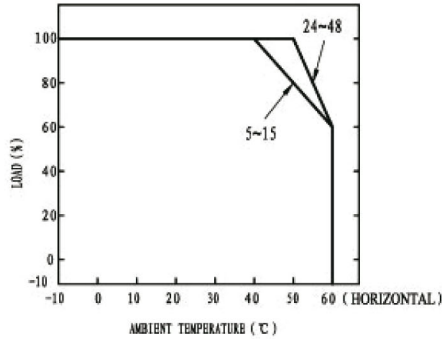
Outline and installation dimension



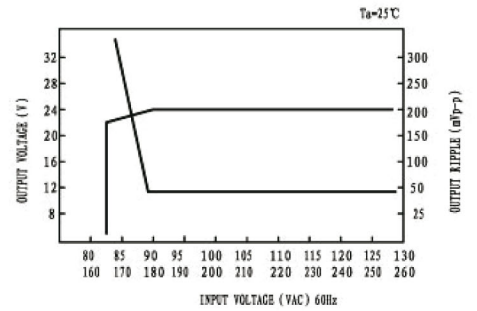
Terminal Pin No. Assignment:

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4-6	DC OUTPUT -V
2	AC/N	7-9	DC OUTPUT +V
3	FG ⊕		

Derating curve



Static characteristics (24V)





ES-100R Single Output Switching Power Supply

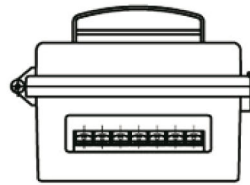
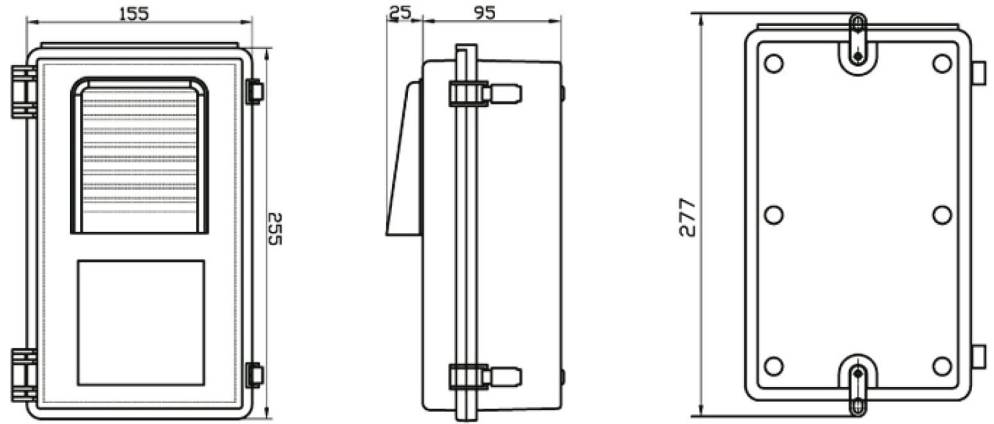
Features

- High Efficiency, high reliability, low cost, water proof
- Universal AC input/ full range
- 100% full load burn-in test
- PROTECTION: Short circuit/Over load/Over voltage
- PWM control and regulated
- Forced air cooling by built in DC fan
- Built-in cooling Fan ON-OFF control
- Fixed switching frequency at 25KHz
- 1 year warranty
- Dimensions 255*155*120mm(L*W*H)

MODEL		ES-350R-5	ES-350R-7.5	ES-350R-12	ES-350R-13.5	ES-350R-15	ES-350R-24	ES-350R-27	ES-350R-48	
OUTPUT	DC Voltage	5V	7.5V	12V	13.5V	15V	24V	27V	48V	
	Voltage Tolerance	±2%	±2%	±1%	±1%	±1%	±1%	±1%	±1%	
	Rated Current	50A	40A	29A	25.8A	23.2A	14.6A	13A	7.3A	
	Current Range	0-50A	0-40A	0-29A	0-25.8A	0-23.2A	0-14.6A	0-13A	0-7.3A	
	Rated Power	250W	300W	348W	348.3W	348W	350.4W	351W	350.4W	
	Ripple & Noise	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p	
	DC Adjustment Range	-10%, +12%	±20%	-16%, +10%	12%, +11%	-10%, +20%	-16%, +10%	-4%, +18%	-15%, +17%	
	Setup, Rise, Hold Time	200ms, 50ms, 20ms at full load								
INPUT	Voltage Range	90~132 VAC/180~264VAC 47~63 Hz; selected by switch 254~370VDC								
	AC Current	6.5A/115 V 4A/ 230 V								
	Efficiency	74%	76%	76%	79%	78%	81%	82%	83%	
	Inrush Current	Cold start 50A/115V 50A/230V								
	Leakage Current	<3.5 mA/240VAC								
PROTECTION	Over Load	105%~135% Protection: Shut down o/p voltage, re-power on to recover								
	Over Voltage	115%~135% Protection: Shut down o/p voltage, recovers automatically after fault condition is removed								
	FAN ON/OFF Control	RT3≥55°C FAN ON, ≤45°C FAN OFF, ≥80°C Shut down o/p (5~7.5V)								
		RT3≥65°C FAN ON, ≤55°C FAN OFF, ≥80°C Shut down o/p (12~15V) RT3≥70°C FAN ON, ≤60°C FAN OFF, ≥85°C Shut down o/p (24~48V)								
ENVIRONMENT	Working Temp., Humidity	-10°C~+60°C; 20%~90 %RH								
	Storage Temp., Humidity	-20°C~+85°C; 10%~95 %RH								
	Vibration	10~500Hz, 2G 10min./1cycle, period for 60min, each along X, Y, Z axes								
SAFETY	Withstand Voltage	I/P-O/P: 1.5KVAC I/P-O/P: 1.5KVAC O/P-FG: 0.5KVAC								
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC								
STANDARD	Safety Standard	Design refer to UL1950								
	EMC Standard	Design refer to FCC Part15 J Conduction Class A								
OTHERS	Weight									
	Packing									
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.									
	2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μ & 47μ parallel capacitor.									
	3. Tolerance: includes set up tolerance, line regulation and load regulation.									

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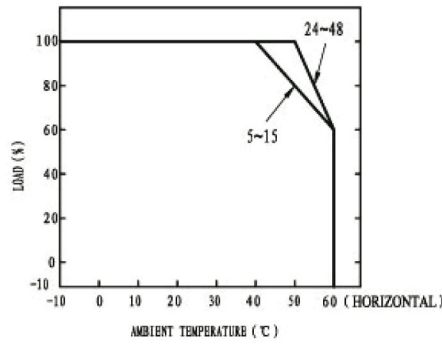
Outline and installation dimension



Terminal Pin No. Assignment:

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⊕		

Derating curve



Static characteristics (24V)

