



**ASC-E1 SERIES**

**30 Watts**

**KEY FEATURES**

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output
- Low Ripple and Noise
- High Efficiency
- CE, CB, UL, TUV Approval
- 2-Years Product Warranty



**ELECTRICAL SPECIFICATIONS**

Model No. ( Single Output )	ASC-3.3S-E1	ASC-5S-E1	ASC-12S-E1	ASC-15S-E1	ASC-24S-E1
Max Output Wattage (W)	20W	30W	30W	30W	30W
Input	Voltage				
	90-264 VAC or 120-370 VDC				
	Frequency (Hz)				
	47-440 Hz				
	Current (Full load)				
	520 mA max. (115 VAC) / 320 mA max. (230 VAC)				
Output	Inrush Current (<2ms)				
	23 A max. (115 VAC) / 46 A max. (230 VAC)				
	Leakage Current				
	0.75 mA max.				
	External Fuse (recommend)				
	1.5 A slow blow type				
	Voltage (V.DC.)				
	3.3V      5V      12V      15V      24V				
	Voltage Accuracy				
	±2%				
	Current (mA) max				
6000      6000      2500      2000      1250					
Line Regulation (LL-HL) (typ.)					
±1%					
Load Regulation (5-00%) (typ.)					
±1%					
Minimum Load					
5%      4%      2%      2%      2%					
Maximum Capacitive Load					
470-23,000µF depending on model					
Ripple					
<0.2% Vout +40mV max (Vp-p)					
Noise					
<0.5% Vout +50mV max (Vp-p)					
Efficiency					
70%      75%      80%      80%      77%					
Hold-up Time					
15 ms min.					
Switching Frequency					
100 kHz					
Protection	Over Power Protection				
	Hiccup technique, auto-recovery				
	Over Voltage Protection				
Zener diode clamp					
Short Circuit Protection					
Hiccup mode, indefinite (automatic recovery)					
Isolation	Input-Output (V.AC)				
3000 V					
Environment	Operating Temperature				
	-40°C...+70°C (with derating)				
	Storage Temperature				
	-40°C...+85°C				
	Temperature Coefficient				
±0.02%/°C					
Humidity					
95% RH					
MTBF					
>200,000 h @ 25°C (MIL-HDBK-217F)					
Physical	Dimension (L x W x H)				
	3.5 x 2.5 x 0.98 Inches ( 89.0 x 63.5 x 25.0 mm ) Tolerance ±0.5 mm				
	Case Material				
	Plastic resin with Fiberglass (flammability to UL 94V-0)				
Weight					
220 g					
Cooling Method					
Free air convection					
Safety	Agency Approvals				
UL/cUL, CE, TUV, CB					
EMC	EMI (Conducted & Radiated Emission)				
	EN 55022 class B				
EMS (Noise Immunity)					
EN 55024					

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.



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**ELECTRICAL SPECIFICATIONS**

Model No. (Dual / Triple Output)	ASC-5D-E1	ASC-12D-E1	ASC-15D-E1	ASC-5S12SE1	ASC-5S12DE1	ASC-5S15DE1		
Max Output Wattage (W)	30W	30W	30W	30W	30W	30W		
Input	Voltage							
	90-264 VAC or 120-370 VDC							
	Frequency (Hz)							
	47-440 Hz							
	Current (Full load)							
	520 mA max. (115 VAC) / 320 mA max. (230 VAC)							
Inrush Current (<2ms)								
23 A max. (115 VAC) / 46 A max. (230 VAC)								
Leakage Current								
0.75 mA max.								
External Fuse (recommend)								
1.5 A slow blow type								
Output	Voltage (V.DC.)		±5V	±12V	±15V	5/12	5/±12	5/±15
	Voltage Accuracy		±5%			±2%		
	Current (mA) max		±3000	±1250	±1000	3000/1250	3000/±630	3000/±500
	Line Regulation (LL-HL) (typ.)		±1%			±1% / ±5%		
	Load Regulation (5-00%) (typ.)		±3%			±2% / ±6%		
	Minimum Load		2%	3%	1%	20%	20%	20%
	Maximum Capacitive Load		470-23,000µF depending on model					
	Ripple		<0.2% Vout +40mV max (Vp-p)					
	Noise		<0.5% Vout +50mV max (Vp-p)					
	Efficiency		73%	78%	76%	77%	77%	76%
	Hold-up Time		15 ms min.					
	Switching Frequency		100 kHz					
Protection	Over Power Protection		Hiccup technique, auto-recovery					
	Over Voltage Protection		Zener diode clamp					
	Short Circuit Protection		Hiccup mode, indefinite (automatic recovery)					
Isolation	Input-Output (V.AC)		3000 V					
Environment	Operating Temperature		-40°C...+70°C (with derating)					
	Storage Temperature		-40°C...+85°C					
	Temperature Coefficient		±0.02%/°C					
	Humidity		95% RH					
	MTBF		>200,000 h @ 25°C (MIL-HDBK-217F)					
Physical	Dimension (L x W x H)		3.5 x 2.5 x 0.98 Inches ( 89.0 x 63.5 x 25.0 mm ) Tolerance ±0.5 mm					
	Case Material		Plastic resin with Fiberglass (flammability to UL 94V-0)					
	Weight		220 g					
	Cooling Method		Free air convection					
Safety	Agency Approvals		UL/cUL, CE, TUV, CB					
EMC	EMI (Conducted & Radiated Emission)		EN 55022 class B					
	EMS (Noise Immunity)		EN 55024					

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**Note**

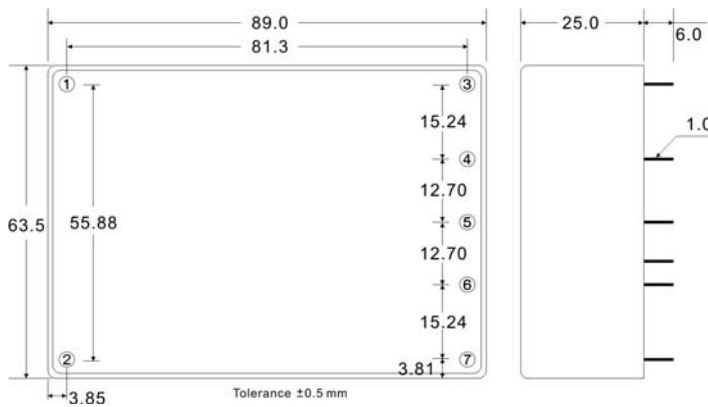
- The triple output required a minimum 20% loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices; however they may not meet all listed specification.
- Load regulation for triple output:  
Main output (V1): 20% to 100% with 20% to 100% balanced on auxiliaries.  
Auxiliary outputs (V2 and V3): 20% to 100% balanced on all outputs.
- Cross regulation for triple output:  
Main output 100% load, auxiliary 100%, other auxiliary 25% to 100%.  
Auxiliary outputs (V2 and V3): Main output 100% load, auxiliary 100%, other auxiliary 25% to 100% or main output 25%, auxiliary 25%, other auxiliary 25% to 100%.



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**MECHANICAL DIMENSION ( Top View )**

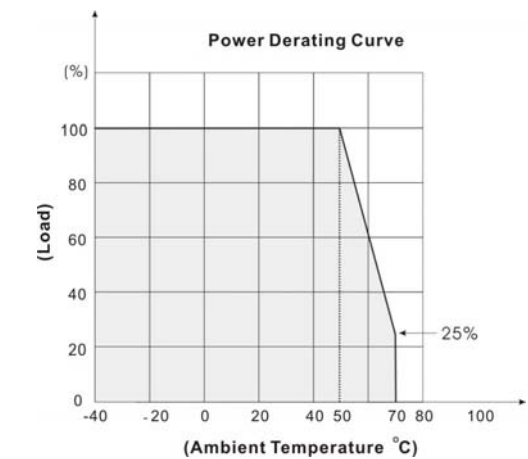
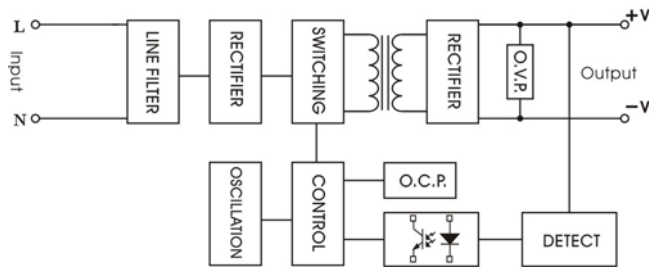


PIN#	Single	Dual	5S/12S	Triple
1	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
2	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
3	+DC OUT	+DC OUT	+12V OUT	+DC OUT
4	NO PIN	NO PIN	+5V OUT	+5V OUT
5	-DC OUT	COMMON	+12V RTN	COMMON
6	NO PIN	NO PIN	+5 VRTN	+5V RTN
7	NOCONNECT	-DC OUT	NO PIN	-DC OUT

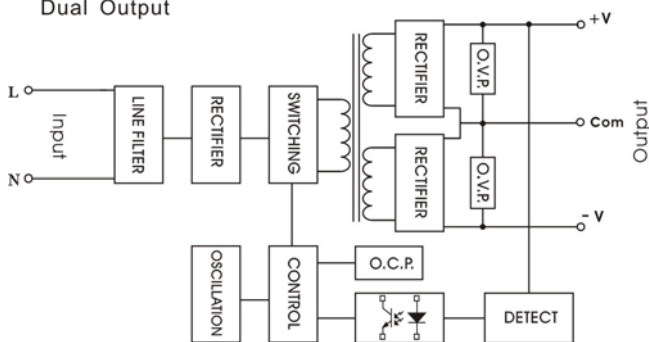
**BLOCK DIAGRAM**

**DERATING**

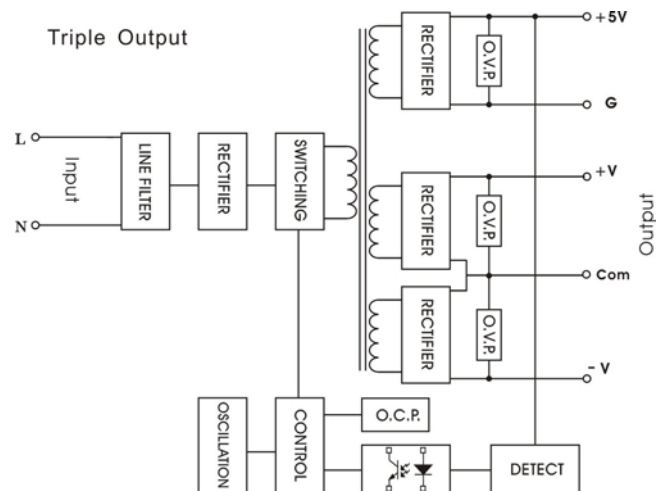
Single Output



Dual Output



Triple Output



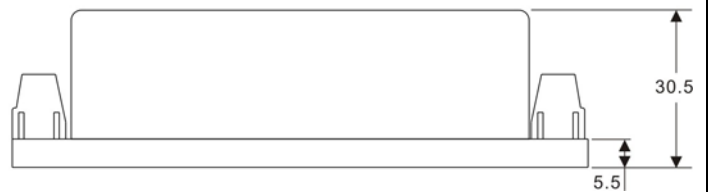
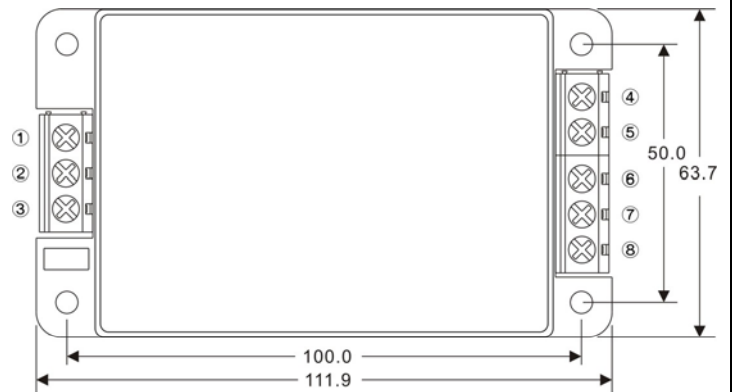


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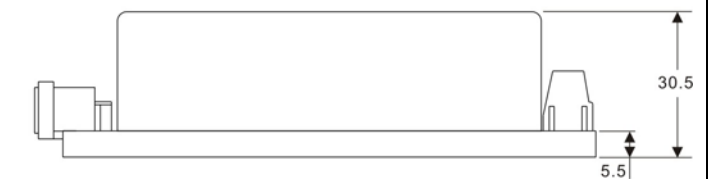
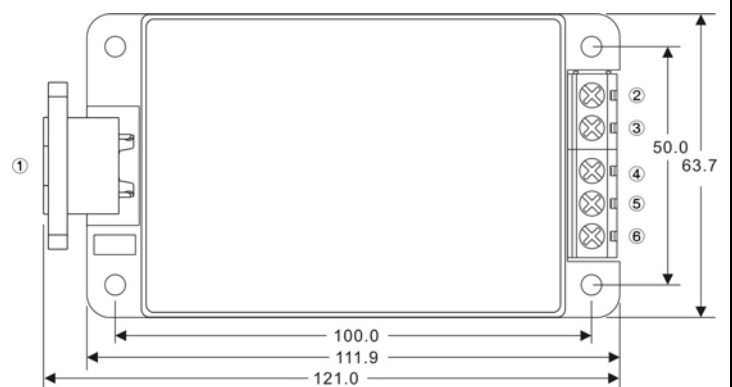
**SCREW TERMINAL**

**ASC-E1-A2**



PIN#	Single	Dual	5S/12S	Triple
1	NOCONNECT	NOCONNECT	NOCONNECT	NOCONNECT
2	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
4	+DC OUT	+DC OUT	+12V OUT	+DC OUT
5	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
6	-DC OUT	COMMON	+12V RTN	COMMON
7	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
8	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT

**ASC-E1-A3**



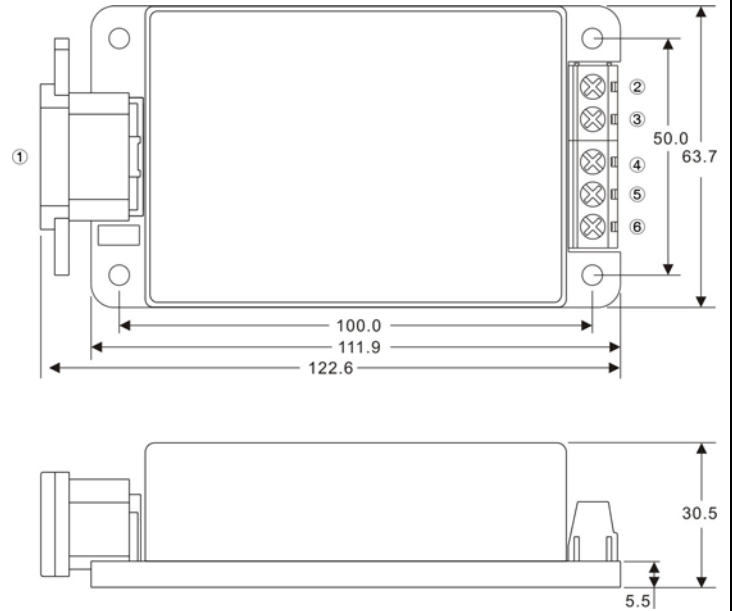
PIN#	Single	Dual	5S/12S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+12V OUT	+DC OUT
3	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
4	-DC OUT	COMMON	+12V RTN	COMMON
5	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



**ASC-E1 SERIES**

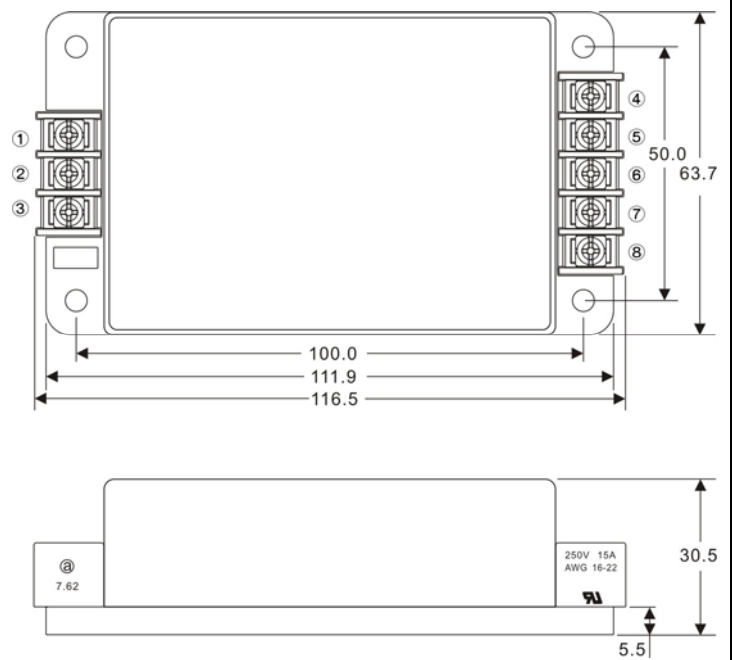
**30 Watts**

**ASC-E1-A4**



PIN#	Single	Dual	5S/12S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+12V OUT	+DC OUT
3	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
4	-DC OUT	COMMON	+12V RTN	COMMON
5	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT

**ASC-E1-A5**

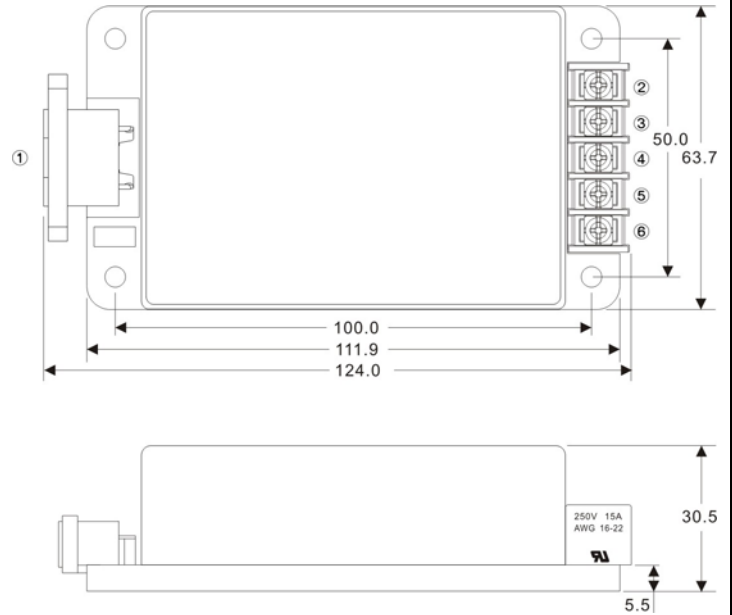


PIN#	Single	Dual	5S/12S	Triple
1	NOCONNECT	NOCONNECT	NOCONNECT	NOCONNECT
2	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
4	+DC OUT	+DC OUT	+12V OUT	+DC OUT
5	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
6	-DC OUT	COMMON	+12V RTN	COMMON
7	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
8	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



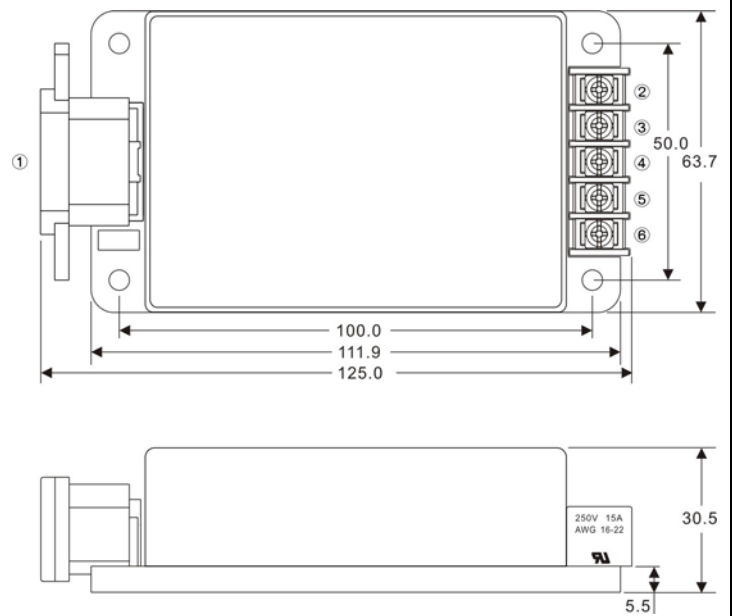
**ASC-E1 SERIES****30 Watts**

**ASC-E1-A6**



PIN#	Single	Dual	5S/12S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+12V OUT	+DC OUT
3	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
4	-DC OUT	COMMON	+12V RTN	COMMON
5	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT

**ASC-E1-A7**



PIN#	Single	Dual	5S/12S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+12V OUT	+DC OUT
3	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
4	-DC OUT	COMMON	+12V RTN	COMMON
5	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT