

# ANC-E1 Series

## 15 W AC/DC Power Module

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- 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, UL, TÜV Approvals
- 2-Years Product Warranty



### Electrical specifications

Model No. ( Single Output )	ANC-5S A-E1	ANC-12S A-E1	ANC-15S A-E1	ANC-24S A-E1
Max Output Wattage (W)	15W	15W	15W	15W
Input	Voltage			
	90-264 VAC or 120-370 VDC			
	Frequency (Hz)			
	47-440 Hz			
	Current (Full load)			
	280 mA max. (115 VAC) / 170 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			
	24V			
	Voltage Accuracy			
	±2%			
	Current (mA) max			
	3000			
	1250			
	1000			
	625			
Line Regulation (LL-HL) (typ.)				
±0.5%				
Load Regulation (5-100%) (typ.)				
±0.5%				
Minimum Load				
4%				
2%				
0%				
0%				
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%				
73%				
73%				
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)			
	3000V			
	Input-FG (V.AC)			
1500V				
Output-FG (V.AC)				
500V				
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)			
	2.91 x 2.13 x 0.87 Inches ( 74.0 x 54.0 x 22.0 mm ) Tolerance ±0.5 mm			
	Case Material			
	Plastic resin with Fiberglass (flammability to UL 94V-0)			
Weight				
140 g				
Cooling Method				
Free air convection				
Safety	Agency Approvals			
UL/cUL, CE, TUV				
EMC	EMI (Conducted & Radiated Emiss.)			
	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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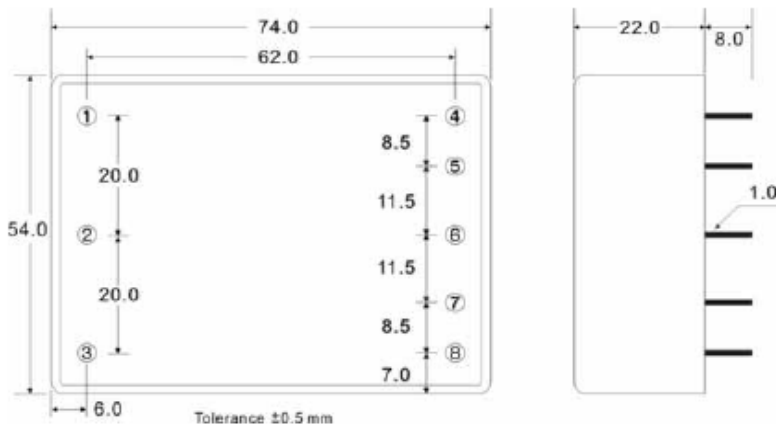
Model No. ( Single Output )		ANC-5D A-E1	ANC-12D A-E1	ANC-15D A-E1	ANC-5S12D A-E1	ANC-5S15D A-E1
Max Output Wattage (W)		15W	15W	15W	15W	15W
Input	Voltage	90-264 VAC or 120-370 VDC				
	Frequency (Hz)	47-440 Hz				
	Current (Full load)	280 mA max. (115 VAC) / 170 mA max. (230 VAC)				
	Inrush Current (<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 / ±15
	Voltage Accuracy	±5%	±5%	±5%	±2%	±2%
	Current (mA) max	±1500	±650	±500	2000 / ±200	2000 / ±150
	Line Regulation (LL-HL) (typ.)	±0.5%	±0.5%	±0.5%	±1% / ±5%	±1% / ±5%
	Load Regulation (5-100%) (typ.)	±3%	±3%	±3%	±2% / ±5%	±2% / ±5%
	Minimum Load	0%	0%	0%	5V 10% 200mA	5V 10% 200mA
	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	71%	76%	65%	68%	68%
	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)	3000V				
	Input-FG (V.AC)	1500V				
	Output-FG (V.AC)	500V				
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)	2.91 x 2.13 x 0.87 Inches ( 74.0 x 54.0 x 22.0 mm ) Tolerance ±0.5 mm				
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)				
	Weight	140 g				
	Cooling Method	Free air convection				
Safety	Agency Approvals	UL/cUL, CE, TUV				
EMC	EMI (Conducted & Radiated Emiss.)	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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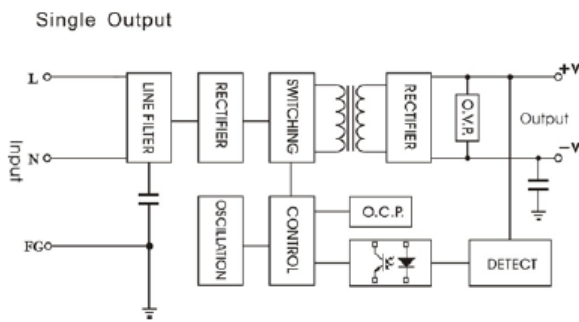
15 W AC/DC Power Module

## MECHANICAL DIMENSIONS ( Top View )

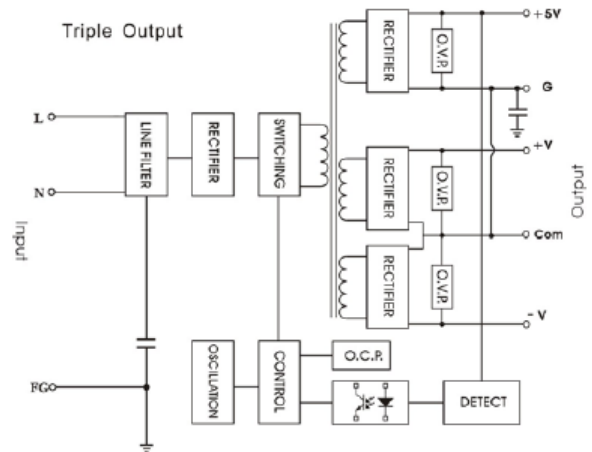
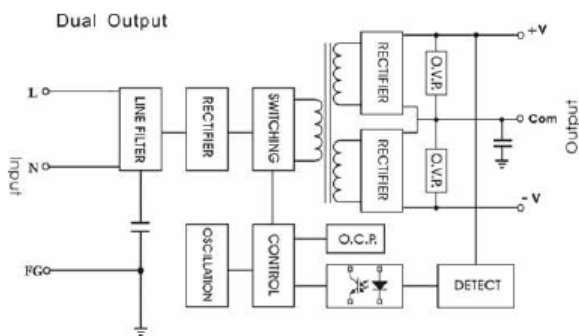
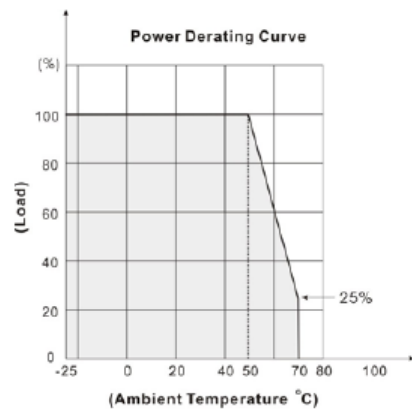


Pin no:	Single	Dual	Triple
1	FG	FG	FG
2	AC IN (N)	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)	AC IN (L)
4	NO PIN	NO PIN	-DC OUT
5	-DC OUT	-DC OUT	COMMON
6	NO PIN	COMMON	+DC OUT
7	+DC OUT	+DC OUT	+5 RTN
8	NO PIN	NO PIN	+5V OUT

## BLOCK DIAGRAM



## DERATING



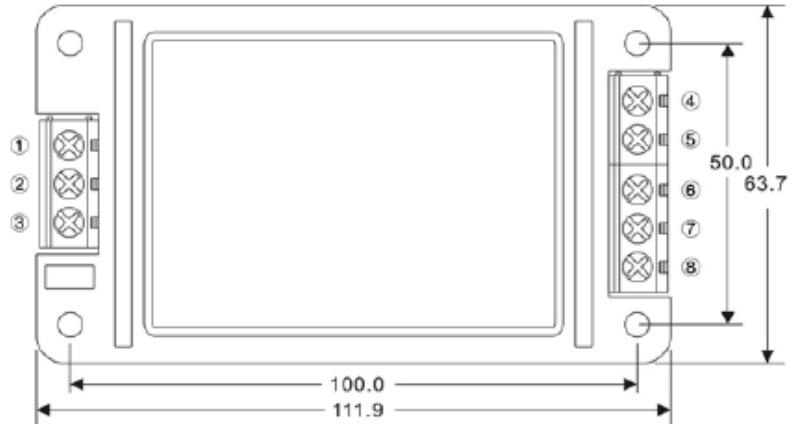
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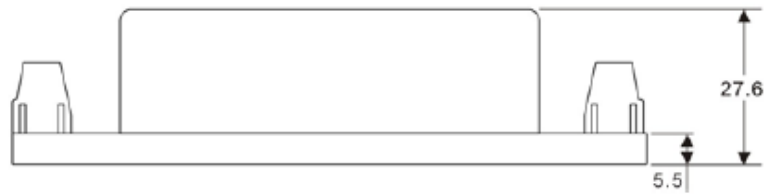
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## SCREW TERMINALS

### ANC-E1-A2

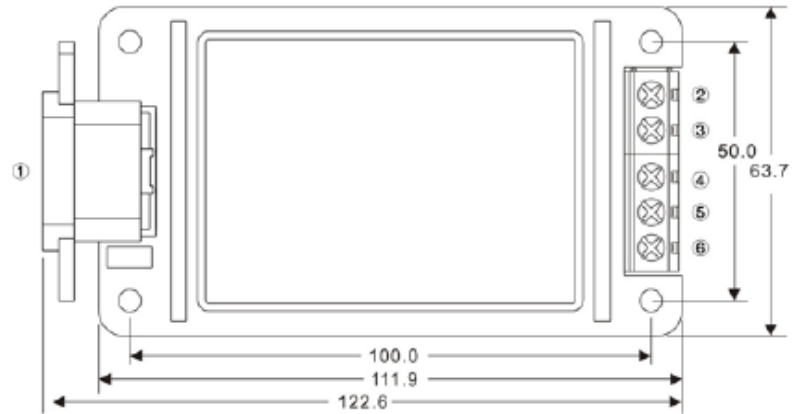


Pin no:	Single	Dual	Triple
1	FG	FG	FG
2	AC IN (N)	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)	AC IN (L)
4	NO CONN	NO CONN	-DC OUT
5	-DC OUT	-DC OUT	COMMON
6	NO CONN	COMMON	+DC OUT
7	+DC OUT	+DC OUT	+5 RTN
8	NO CONN	NO CONN	+5V OUT



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### ANC-E1-A4



Pin no:	Single	Dual	Triple
1	AC IN	AC IN	AC IN
2	NO CONN	NO CONN	-DC OUT
3	-DC OUT	-DC OUT	COMMON
4	NO CONN	COMMON	+DC OUT
5	+DC OUT	+DC OUT	+5V RTN
6	NO CONN	NO CONN	+5V OUT



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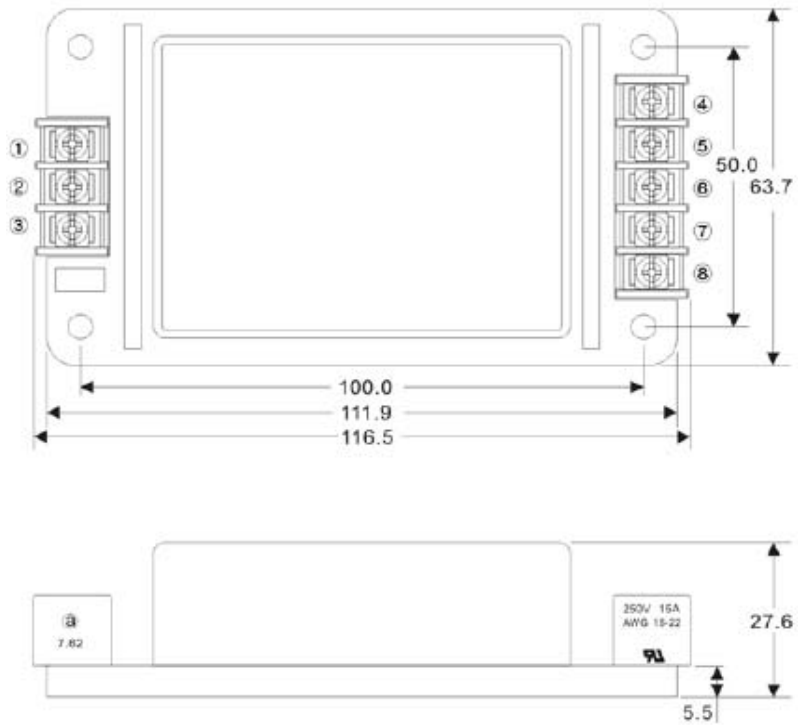
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## ANC-E1-A5



Pin no:	Single	Dual	Triple
1	FG	FG	FG
2	AC IN (N)	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)	AC IN (L)
4	NO CONN	NO CONN	-DC OUT
5	-DC OUT	-DC OUT	COMMON
6	NO CONN	COMMON	+DC OUT
7	+DC OUT	+DC OUT	+5 RTN
8	NO CONN	NO CONN	+5V OUT



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## ANC-E1-A7



Pin no:	Single	Dual	Triple
1	AC IN	AC IN	AC IN
2	NO CONN	NO CONN	-DC OUT
3	-DC OUT	-DC OUT	COMMON
4	NO CONN	COMMON	+DC OUT
5	+DC OUT	+DC OUT	+5V RTN
6	NO CONN	NO CONN	+5V OUT

