AA30S/D/T Series

30W Single, Dual, and Triple Output AC-DC Power Module





FEATURES

- Encapsulated compact AC-DC power supply
- Single-, Dual, and Triple Output Models
- Over Load and Over Voltage Protection
- 3 Mounting Package Versoin:
  - Solder pins for direct PCB mount
  - Screw terminal block for chassis mount
- - DIN-Rail Mounting
- Universal Input voltage range 85-264 VAC, 47-440 Hz
- 3kVAC Isolatoin, Protection Class II level
- UL/UL/IEC/EN 60950-1 Certified , CE Marked
- UL508 Approval (Selective)
- Lead free, RoHs Compliant
- 3 Year Product Warranty

The AA30S/D/T series , isolated fully encapsulated 30W AC/DC power module with 3,000VAC isolation. With Universal input voltage 85-264VAC and International safety approvals, these power modules are ideal for applications in commercial and industrial electronic equipment. These isolated AC/DC converters are the latest offering from a world leader in power systems technology and manufacturing — Delta Electronics, Inc. With creative design technology and optimization of component placement, these converters possess outstanding electrical and thermal performance, as well as extremely high reliability under highly stressful operating conditions. industrial electronic equipment

Model List

Model Number	Output Voltage	Output Current		Input Current 115VAC, 60Hz		Max. capacitive Load	Efficiency (typ.)	Safety Approval-1 UL60950	Safety Approval-1 UL60508
		Max.	Peak	@Max. Load	@No Load		@Max. Load		
	VDC	mA	mA	mA(typ.)	mA(typ.)	μF	%		
AA30S0500A	5	6000	---	557	60	8000	78	O	O
AA30S1200A	12	2500	---	543	60	3900	80	O	O
AA30S1500A	15	2000	---	543	60	3900	80	O	O
AA30S2400A	24	1250	---	543	60	1500	80	O	O
AA30S4800A	48	625	---	543	60	1000	80	O	O
AA30D1212A	±12	±1300	---	565	60	*1500	80	O	O
AA30D1515A	±15	±1000	---	543	60	*1500	80		
AA30D0512A	*5	3000	4500	572	60	3900	76	O	
	*12	1250	1800			1500			
AA30T051212A	*5	3000	4500	572	60	2200	76	O	
	12	600	900			1500			
	-12	-600	900			1500			
AA30T121205A	*5	3000	4500	572	60	2200	76	O	
	12	1000	1500			1500			
	-12	-250	500			1500			
AA30T051515A	*5	3000	4500	572	60	2200	76	O	
	15	500	750			1500			
	-15	-500	750			1500			
AA30T050312A	*5	4500	6000	588	60	2200	71	O	
	+3.3	1000	1500			2200			
	+12	250	500			1500			
AA30T030512A	*3.3	4000	5300	483	60	2200	71	O	
	+5	1500	2000			2200			
	+12	250	500			1500			

* Output floating (note 6)

* For each output

E-mail: DCDC@delta.com.tw
http://www.deltaww.com/dcdc

Input Characteristics

Parameter	Model	Min.	Typ.	Max.	Unit
Input Voltage Range	All Models	85	---	264	VAC
Input Frequency Range		47	---	440	Hz
Input Voltage Range		120	---	370	VDC
Inrush Current (Cold Start at 25℃)	115VAC	---	---	20	A
	230VAC	---	---	40	A

Output Characteristics

Parameter		Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy		Single / Dual Output		---	±1.0	±2.0	%
		Dual Positive / Triple Output	Vo1	---	±1.0	±2.0	%
			Vo2&Vo3	---	±3.0	---	%
Line Regulation		Vin=Min. to Max.		---	±0.2	±1.0	%
Load Regulation		Iout=Min. to Max.	Single Output Models	---	±0.5	±1.0	%
			Dual Output Models	---	±2.5	±5.0	%
			Triple Output Models Vo1	---	±2.5	±5.0	%
			Triple Output Models Vo2&Vo3	---	±4.0	---	%
Cross Regulation-Dual / Triple Output Models	Vo1	Measured output Io = 20% to 100% of rated load Other output(s) set at 50% of rated load		---	±2.0	---	%
	Vo2			---	±5.0	---	%
	Vo3			---	±5.0	---	%
Ripple & Noise (20MHz)		3.3V & 5VDC Output Models		---	1.5	1.8	%V_{PP} of Vo
		Other Output Models		---	1.0	1.3	%V_{PP} of Vo
Minimum Load		Single-,Dual-Output Models and Main Output Triple Output Models		---	10	---	%Inom.
		Auxiliary Outputs of Triple Output Models		---	20	---	%Inom.
Over Voltage Protection		Zener diode clamp		---	120	---	% of Vo
Temperature Coefficient				---	±0.02	---	%/℃
Overshoot				---	---	5	% Vout
Current Limitation		Foldback, auto-recovery (long term overload condition may cause damage)		105	---	---	% Inom.
Short Circuit Protection		Hiccup mode, indefinite (automatic recovery)					

General Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage	Input to Output, 60 Seconds	3000	---	---	VACrms
I/O Isolation Resistance	500 VDC	100	---	---	MΩ
Switching Frequency		---	100	---	KHz
Hold-up Time		---	20	---	ms
MTBF (calculated)	MIL-HDBK-217F@25℃, Ground Benign	200,000	---	---	Hours
EMC Emission	Conducted and radiated	EN 55011 class B, EN 55022 class B, FCC part 15 class B			
EMC Immunity according EN61000-6-1	Standard	Specification Requirement			Performance Criteria
	EN61000-4-2	Air ±8KV Cont. ±4KV			B
	EN61000-4-3	80~1000MHz, 10V/m 80% AM, 1KHz modulation			A
	EN61000-4-4	AC port ±2KV DC, SL, TL ±2KV not less than 1 min.			B
	EN61000-4-5	1.2/50uS(8/20μS) AC dif. ±1KV DC ±0.5KV			B
	EN61000-4-6	0.15~80MHz, 10Vrms (functional earth ports included)			B
		80% AM, 1KHz modulation			
	EN61000-4-8	50Hz/60Hz, 30A/m			A
	EN61000-4-11	30%, 10ms			B
		60%, 100ms, 95%, 5000ms			C
Protection Class II		According IEC/EN 60536			
Safety Approvals		cUL/UL 60950-1,IEC/EN 60950-1			
		UL508 for selective models			

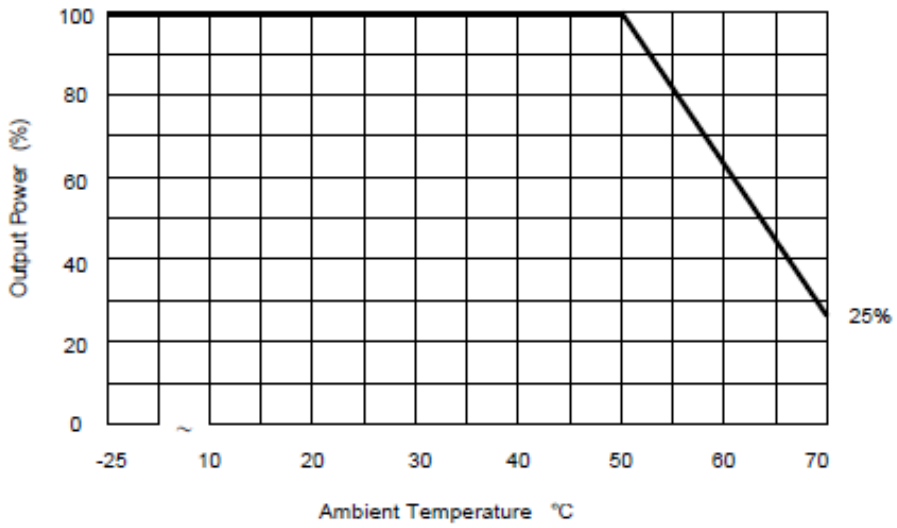
Recommended Input Fuse

All Models	
Built-in Fuse	3.5A / 250VAC
External Fuse (Recommended)	1.5A Slow – Blow Type

Environmental Specifications

Parameter	Conditions		
Temperature Range (operational)	Ambient	-25℃	+70℃
Storage Temperature Range		-40℃	+85℃
Over Temperature Protection	at 90℃ (automatic recovery at 67℃)		
Cooling	Free-Air convection		
Humidity (non condensing)		---	95 % rel. H

Power Derating Curve

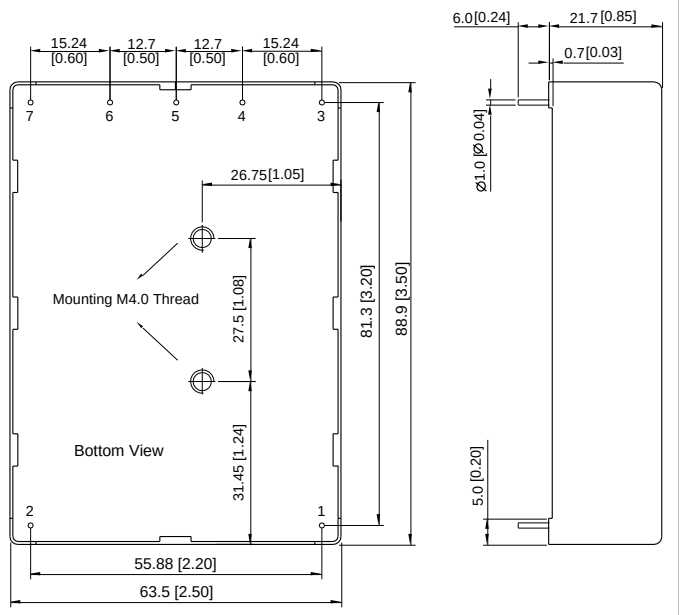


Notes

1. All specifications typical at Ta=+25℃, resistive load, 115VAC, 60Hz input voltage and after warm-up time rated output current unless otherwise noted.
2. Ripple & Noise measurement bandwidth is 0~20 MHz
3. These power modules require a minimum output loading to maintain specified regulation, operation under no-load conditions will not damage the power supplies however they may not meet all listed specifications.
4. Other input and output voltage may be available, please contact us for custom solution
5. Peak current can't be drawn from all output at the same time.
6. Floating (or isolated) output of a power supply that is not connected to any other output.
7. Specifications are subject to change anytime without notice

Mechanical Drawing PCB Mounting

Mechanical Dimensions



Pin Connections

Pin	Single	Dual (D12,D15)	Dual (D512)	Triple	Triple (T5312P,T3512P)
1	AC(N) – AC Neutral				
2	AC(L) – AC Line				
3	+Vout	+Vout	+Vout2	+Vout2	+Vout2
4	No Pin		+Vout1	+Vout1	+Vout1
5	-Vout	Common	-Vout2	Com. 2/3	Com. 2/3
6	No Pin		-Vout1	-Vout1	-Vout1
7	NC	-Vout	NC	-Vout3	+Vout3

NC: No Connection

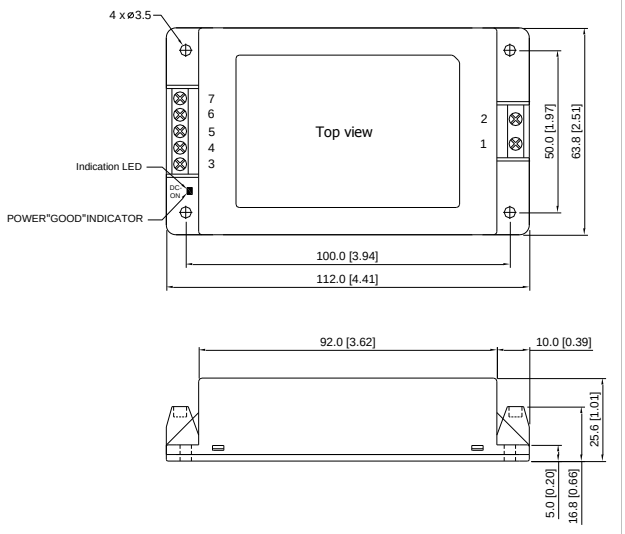
- ▶All dimensions in mm (inches)
- ▶Tolerance: ±0.5 (±0.02)
- ▶Pin diameter ⇔ 1.0 ±0.1 (0.04±0.004)

Physical Outline

Case Size	:	88.9x63.5x21.7mm (3.50x2.50x0.85 inches)
Case Material	:	Plastic resin + Fiberglass (flammability to UL 94V-0 rated)
Pin Material	:	Copper Alloy with Gold Plate Over Nickel Subplate
Weight	:	177g

Mechanical Drawing Chassis Mounting

Mechanical Dimensions



Connections

Terminal	Single	Dual (D12,D15)	Dual (D512)	Triple	Triple (T5312P,T3512P)
1	AC(N) – AC Neutral				
2	AC(L) – AC Line				
3	+Vout	+Vout	+Vout2	+Vout2	+Vout2
4	NC		+Vout1	+Vout1	+Vout1
5	-Vout	Common	-Vout2	Com. 2/3	Com. 2/3
6	NC		-Vout1	-Vout1	-Vout1
7	NC	-Vout	NC	-Vout3	+Vout3

NC: No Connection

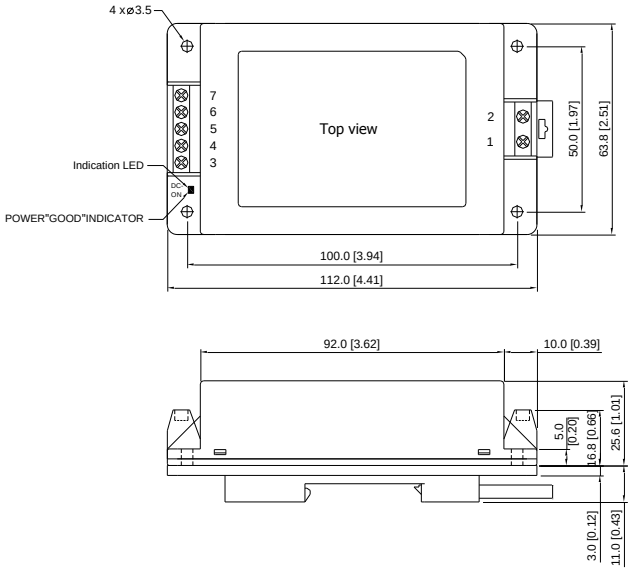
- ▶All dimensions in mm (inches)
- ▶Tolerance: X.X±0.5 (X.XX±0.02)
  X.XX±0.25 (X.XXX±0.01)
- ▶Pin pitch tolerance: ±0.25 (0.01)

Physical Outline

Case Size	:	112.0x63.8x25.6mm (4.41x2.51x1.01 inches)
Case Material	:	Plastic resin + Fiberglass (flammability to UL 94V-0 rated)
Weight	:	191g

Mechancial Drawing Chassis Mounting with DIN Rail Kit

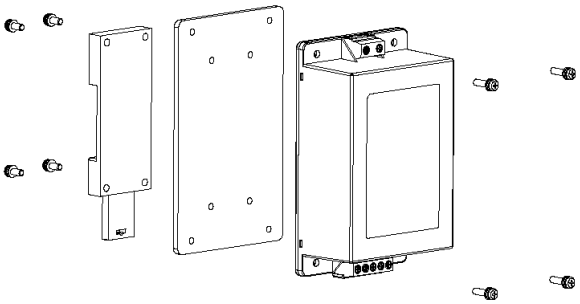
Mechanical Dimensions

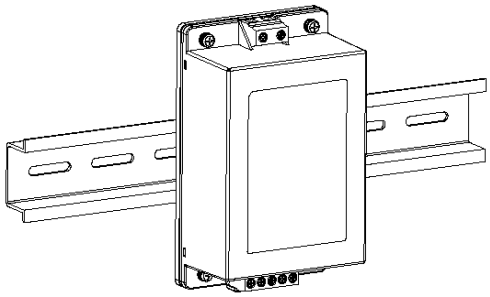


Physical Outline

Case Size	:	112.0x63.8x25.6mm (4.41x2.51x1.01 inches)
Case Material	:	Plastic resin + Fiberglass (flammability to UL 94V-0 rated)
Weight	:	245g

DIN-Rail Mounting Kit





Part Numbering System

A	A	30	T	05	03	12	A
Form factor	Family series	Watt	Number of Outputs	0nput Voltage I	Output Voltage II	Output Voltage III	Option Code
AC/DC Power Module	A~Z	30 : 30W	S - Single	03 : 3.3V	03 : 3.3V	03 : 3.3V	A - Std PCB Mounting
			D - Dual	05 : 5V	05 : 5V	05 : 5V	C - Chasis Mounting
			T - Triple	12 : 12V	12 : 12V	12 : 12V	D - Chassis Mounting with DIN-Rail kit
				24 : 24V	15 : 15V	15 : 15V	
				48 : 48V	24 : 24V	24 : 24V	

CONTACT: www.deltaww.com/dcdc

USA:
Telephone:
East Coast: 978-656-3993
West Coast: 510-668-5100
Fax: (978) 656 3964
Email: DCDC@delta-corp.com

Europe:
Phone: +31-20-655-0967
Fax: +31-20-655-0999
Email: DCDC@delta-es.com

Asia & the rest of world:
Telephone: +886 3 4526107
ext 6220~6224
Fax: +886 3 4513485
Email: DCDC@delta.com.tw

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