

SERIES AM

AC-DC / DC-DC CONVERTERS

**50 watt
triple output**

**50 watt
single output**



100 watt

The AM series AC-DC/DC-DC power supplies can accept a wide range of input powers making them true multiple input power supplies. The AM models are uniquely qualified for a variety of military applications where various international input powers may be encountered

AC/DC

- Customer Selectable, Multi-Inputs
- NAVMAT Guidelines
- Wireless Submodular Construction for High Reliability
- Current Mode Control
- Standard Current Limiting

SPECIFICATIONS

INPUT:

Inputs for 50 watt model:
90-130 Vac; 47-440 Hz. Single Phase or Three Phase (Delta, WYE) or 180-260 Vac, 47-440 Hz, Single Phase or Three Phase (Delta); 200-300 Vdc. "S" version input ranges: 100-200 Vdc. For this input range, add (S) to model number: AM50S/5-A(S).
Inputs for 100 watt model:
103-127 Vac, 47-440 Hz, 1 Ø;
206-254 Vac, 47-440 Hz, 1 Ø;
200-300 Vdc.

EFFICIENCY:

65% minimum. Typically 75%. (Full load, room ambient.)

LINE REGULATION:

Single or main: 0.1% or 10 mV, whichever is greater. Auxiliaries:
±15V: 100 mV maximum;
±12V: 60 mV maximum.

LOAD REGULATION:

Single or Main: 10 mV or 0.1%, whichever is greater. Auxiliary outputs: 150 mV maximum.

PARD (NOISE AND RIPPLE):

25 mV rms, 100 mV P-P for 5 Vdc output and 50 mV rms, 200 mV P-P for other voltages; measured at 25 MHz bandwidth over temperature range.

ISOLATION VOLTAGE:

1,000 Vdc, input to output;
1,000 Vdc, input to case;
200 Vdc, output to case for 50 watt unit and 500 Vdc, output to case for 100 watt unit.

PARALLELABILITY

The 100 watt unit allows for multiple unit current sharing without the need for external components, via a single pin connection on each unit.

INSULATION RESISTANCE:

50 megohms minimum between input and outputs, input and case, outputs and case, when measured at 50 Vdc.

TEMPERATURE RANGE:

Operating: -55°C to +100°C maximum, at center of the baseplate.
Storage: -55°C to +125°C, ambient.

TEMPERATURE COEFFICIENT:

0.01%/°C maximum over entire temperature range.

INPUT TRANSIENT PROTECTION:

Unit will not be damaged or exhibit degradation of performance when subjected to input transients in accordance with MIL-STD-704A, MIL-STD-704D and MIL-STD-1399, as applicable to corresponding input configurations. Consult you nearest sales office if further details are needed.

LOAD TRANSIENT RECOVERY:

Main output voltage returns to regulation limits within 0.5 milliseconds after 50% change in load current.

LOAD TRANSIENT OVERTHOOT:

0.5V from nominal voltage set point, single and triple outputs.

SHORT CIRCUIT PROTECTION:

All outputs are completely protected against a short circuit of any duration. Outputs automatically restore to normal when overload is removed.

REMOTE SENSING:

Compensates for up to 0.5 volt drop in output leads. (Single and main output only). Sense pins must be tied local (at connector) or remote (at load) for proper operation.

PRELOAD REQUIREMENTS:

For Triple output only.
A one amp minimum load is required on the main for full load capabilities on the auxiliaries.

REMOTE INHIBIT:

Provides for remote turn on/off with TTL logic signal. Application of TTL Signal (logic 1) will inhibit the outputs. 10 mA required current (@5 Vdc).

ELECTROMAGNETIC INTERFERENCE:

Units, when tested in accordance with MIL-STD-462, meets or minimizes the majority of the requirements of MIL-STD-461C for conducted and radiated, emission and susceptibility, for Part 2, Class A1b equipment for input power leads, with different levels of compliance under each input configuration. For further details regarding levels and extent of compliance in each class, input configuration, or requirement, consult factory. Certified test reports available upon request.

SWITCHING FREQUENCY:

160 to 200 kHz fixed

RELIABILITY:

The Mean Time Between Failure (MTBF) is calculated per MIL-HDBK-217E at 50°C baseplate temperature with maximum operating input voltage and maximum rated output power. The MTBF for AM50S at ground benign environment is 160,300 hours and 20,200 for naval sheltered environment. With the -ER option, MTBF was calculated to be 240,000 hours at ground benign and 25,000 for naval sheltered. Please consult factory for additional environments and models.

ENVIRONMENT:

Units meet MIL-STD-810D, altitude, shock, acceleration, vibration and MIL-S-901C high-impact shock requirements. For information, please consult factory. Certified test reports available upon request.

Hook Up:

Via D-Subminiature Connectors, M24308/24 type.

OPTIONS

The following standard options are available on the AM Series power supplies.

Enhanced Reliability:

ER Option provides increased reliability by using higher levels of military grade components (to order, add “-ER” after model number, i.e., AM100S/15-A-ER).

Environmental Stress Screening:

Environmental Stress Screening (ESS) including random vibration and thermal cycling (per the NAVMAT guidelines) is available. Consult factory for details.

Ruggedized:

Ruggedized option available, please contact factory for details.

SINGLE OUTPUT

Nominal Output Voltage	Output Current (Amps)	Weight ¹ (Oz.)	Weight ¹ (Grams)	Model Number
5	10	12	340	AM50S/5-A
	20	28	775	AM100S/5-A
5.2	9.62	12	340	AM50S/5.2-A
	19.23	28	775	AM100S/5.2-A
12	4.17	12	340	AM50S/12-A
	8.33	28	775	AM100S/12-A
15	3.33	12	340	AM50S/15-A
	6.67	28	775	AM100S/15-A
24	2.08	12	340	AM50S/24-A
	4.16	28	775	AM100S/24-A
28	1.79	12	340	AM50S/28-A
	3.57	28	775	AM100S/28-A

Set Point Accuracy: 50 mV or 0.5% whichever is greater

TRIPLE OUTPUT

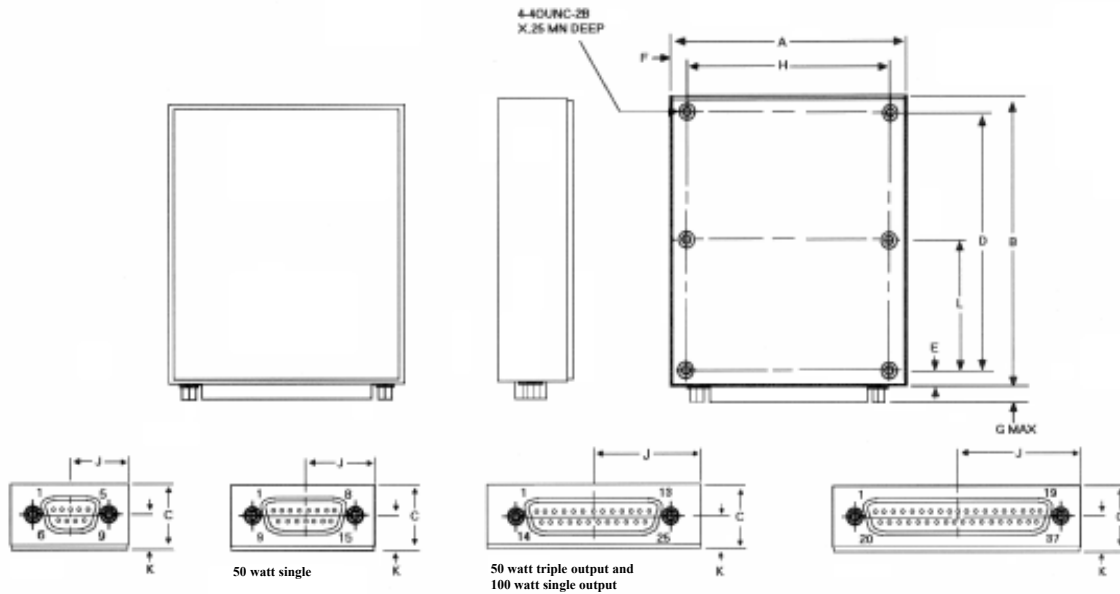
Nominal Output Voltage	Output Current (Main)	Output Voltage (Aux)	Output Current (Aux)	Weight ¹ (Oz.)	Weight ¹ (Grams)	Model Number
5	7.0	±12	0.63	15	410	AM50T/5/12-A
	7.0	±15	0.5	15	410	AM50T/5/15-A

Set Point Accuracy: Main ±50 mV
Aux ±500mV

¹Maximum weight

SERIES AM

CASE DRAWINGS



DIMENSIONS

	Model	A	B	C	D	E	F	G	H	J	K	L
Inches	AM50S	3.25	4.25	.85	3.850	.20	.20	.25	2.850	1.63	.46	N/A
		82.6	108.0	21.6	97.79	5.1	5.1	6.4	72.39	41.4	11.7	
MM	AM50T	3.50	4.50	.85	4.100	.20	.20	.25	3.100	1.75	.46	N/A
		88.9	114.3	21.6	104.14	5.1	5.1	6.4	78.74	44.5	11.7	
	AM100S	4.25	6.00	.85	5.600	.20	.20	.25	3.850	2.13	.46	2.800
		108.0	152.4	21.6	142.24	5.1	5.1	6.4	97.79	54.0	11.7	71.12

Tolerances: inches - x.xx = ±0.015
 .xx = ±0.03
 mm - .xx = ±0.4
 .x = ±0.8

Material: Base - Aluminum 5052-H32
 Case - 26 Gauge Steel (cold rolled).
 Case Finish - Nickel Plating

Mounting: Standard: 4-40 THD inserts 1/4" min. depth are provided in baseplate.
 Steel 4-40 bolts American Standard, unified national coarse series, slotted studs are supplied with each unit.
 Metric: M2.5 inserts. To order insert an "I" after the "A" in the model number, i.e. AB35D/I2-AI.

* Number of mounting holes: 4 places for the 50 watt model, 6 places for the 100 watt.

PIN DESIGNATIONS

SINGLE OUTPUT

Model:	AM50S			
Connector:	DAMME15PF			
Mate:	DAMM15S			
1. +Input	4. +TTL	7. + Output	10. - Input	13. -Output
2. Input (N)	5. +Sense ²	8. +Output	11. Ground	14. -Output
3. -TTL	6. +Output	9. -Input	12. -Sense ²	15. -Output

TRIPLE OUTPUT

Model:	AM50T			
Connector:	DBMME25PF			
Mate:	DBMM25S			
1. +Input	6. +AUX	11. +Output	16. N/C	21. N/C
2. Input (N)	7. AUX COM	12. +Output	17. Ground	22. -Sense ²
3. N/C	8. AUX COM	13. +Output	18. N/C	23. -Output
4. -TTL	9. -AUX	14. -Input	19. N/C	24. -Output
5. +TTL	10. +Sense ²	15. -Input	20. N/C	25. -Output

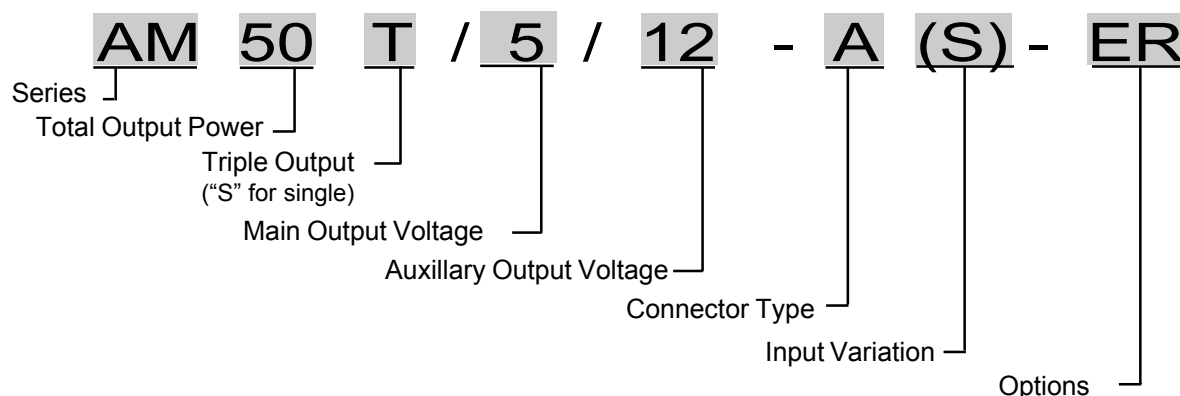
Model:	AM100S			
Connector:	DBMME25PF			
Mate:	DBMM25S			
1. +Input	6. +TTL	11. -Sense ²	16. -Input	21. +Output
2. +Input	7. -TTL	12. -Output	17. Ground	22. -Output
3. -Input	8. +Output	13. -Output	18. +Output	23. -Output
4. Parallel ¹	9. +Output	14. Input	19. +Output	24. -Output
5. Parallel ¹	10. +Sense ²	15. Input	20. +Output	25. -Output

¹Parallel pins are internally connected and redundant. Either pin can be used for single pin parallelability or either pin can be left open and unused.

²Sense pins must be tied either local (at connector) or remote (at load) for proper operation.

SERIES AM

How To ORDER



INPUT CURRENT

(Typical Amps)

Model	Output Load	Low Line	High Line
AM50S/270 Vdc	50%	0.42	0.14
	100%	0.76	0.26
AM50T/270 Vdc	50%	0.50	0.16
	100%	0.76	0.26
AM50S/115 Vac	50%	0.75	0.50
	100%	1.25	1.00
AM50T/115 Vac	50%	0.79	0.54
	100%	1.30	1.10
AM100S/115 Vac	50%	1.35	1.10
	100%	2.50	2.00

Input Fuse: To protect your power supply source and the Abbott convertor always insert a fuse between the source and the module's "high" input pin(s). Bus fuse type MDX or equivalent slow blow is recommended. Fuse value is indicated on label of module; typically 2 times low line input current value at full load (100%).

SERIES RM

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triple output**

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The “-R” (**Ruggedized**) Version of the A Series is the same as the Standard version except it uses industrial grade plastic cased TO-220 type diodes and transistors in place of metal ones for cost savings. All other components including the control IC and the input capacitors are identical. The “-R” version has MTBF numbers 5-10% lower than the Standard version (per Mil-HDBK-217). No dimensions or electrical specifications will be changed. The operating temperature range remains at -55 to 100°C. The internal EMI filter is optional.

Refer to AM Series manual for detail specifications.