AB24S/D Series

AC/DC Power Module 24W, Industrial & Medical Safety

FEATURES

- Fully encapsulated Plastic Case
- 3 Mounting Versions:
  - PCB Mounting with Solder Pins
  - Chassis Mounting with Screw Terminals
  - DIN-Rail Mounting
- Package Dimension 74x54x19.5 mm (PCB Mounting Version)
- Universal Input 85-264VAC, 47-440 Hz
- Protection Class II
- Extended Operating Temp.Range -40°C to +60°C at full Load
- LED Output Indicator (Chassis Version Models)
- Industrial Safety to UL/cUL/IEC/EN 60950-1 and UL508
- Medical Safety Approval to UL/cUL/IEC/EN 60601-1 3rd Edition
- Over Load and Over Temperature Protection
- 3 Year Product Warranty

Security Lab Medical Metro Data Center Telecom Industrial Network

The new AB24S/D series is a range of fully encapsulated AC/DC power modules. These high performance products feature an extended operating temperature range of -40°C to +80°C. Universal input voltage 85-264VAC and UL/IEC/EN safety approvals including medical safety and UL508 listing qualify these power supplies modules for applications in products with worldwide markets.EMI-filter meets EN55022, class B and FCC,part15, class B.
The AB24S/D series power modules provide an economical solution for many space critical applications in commercial, medical and industrial electronic equipment.

Model Selection Guide

Model Number PCB Mounting	Output Voltage	Output Current	Input Current		Max. capacitive Load	Efficiency (typ.)
			115VAC, 60Hz	230VAC, 50Hz		
		Max.	@Max. Load			@Max. Load, 115VAC
	VDC	mA	mA(typ.)		µF	%
AB24S0500A	5	3000	282	169	2200	77
AB24S0900A	9	2666	424	255	1000	82
AB24S1200A	12	2000	419	252	1000	83
AB24S1500A	15	1600	424	255	680	82
AB24S2400A	24	1000	409	246	470	85
AB24D1212A	±12	±1000	414	249	470#	84
AB24D1515A	±15	±800	414	249	330#	84

For each output

Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
AC Voltage Input Range	All Models	85	---	264	VAC
Input Frequency Range		47	---	440	Hz
DC Voltage Input Range		120	---	370	VDC
No-Load Power Consumption		---	---	0.3	W
Inrush Current (Cold Start at 25℃)	115VAC	---	---	20	A
	230VAC	---	---	40	A

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

Output Specifications

Parameter	Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy			---	±2.0	---	%
Line Regulation			---	±0.5	---	%
Load Regulation	Single Output Model		---	±0.5	---	%
	Dual Output Models		---	±2.5	---	%
Min.Load	No minimum Load Requirement					
Ripple & Noise	0-20 MHz Bandwidth	5.0VDC Output Models	---	1.5	1.8	%V_{PP} of Vo
		Other Output Models	---	1.0	1.3	%V_{PP} of Vo
Over Voltage Protection	Zener diode clamp			120		% of Vo
Temperature Coefficient			---	±0.02	---	%/℃
Overshoot			---	---	5	%
Current Limitation	85VAC, Hiccup Mode, auto-recovery (long term overload condition may cause damage)		105	---	---	%Inom.
Short Circuit Protection	Continous					

General Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage (reinforced)		4000	---	---	VACrms
Leakage Current		---	80	---	μA
I/O Isolation Resistance	500 VDC	1000	---	---	MΩ
Switching Frequency		---	132	---	KHz
Hold-up Time	115VAC, 60Hz	---	20	---	ms
	230VAC, 50Hz	---	80	---	ms
MTBF (calculated)	MIL-HDBK-217F@25℃, Ground Benign	400,000	---	---	Hours
Protection Class II		According IEC/EN 60536			
Safety Approvals		IEC/EN 60950-1, 60601-1 3rd, 2XMOPP cUL/UL 60950-1, 60601-1 3rd, 2XMOPP, UL 508 listed			

EMC Specifications

Parameter	Standards & Level	Performance
Conducted and radiated EMI	EN55011, EN55022, FCC part 15	Class B
ESD	EN61000-4-2 air ± 8kV , Contact ± 4kV	A
Radiated immunity	EN61000-4-3 10V/m	A
Fast transient	EN61000-4-4 ±2kV	A
Surge	EN61000-4-5 ±1kV	A
Conducted immunity	EN61000-4-6 10Vrms	A
PFMF	EN61000-4-8 30A/M	A
Dips	EN61000-4-11 30% 10ms	A
Interruptions	EN61000-4-11 >95% 5000ms	B

Environmental Specifications

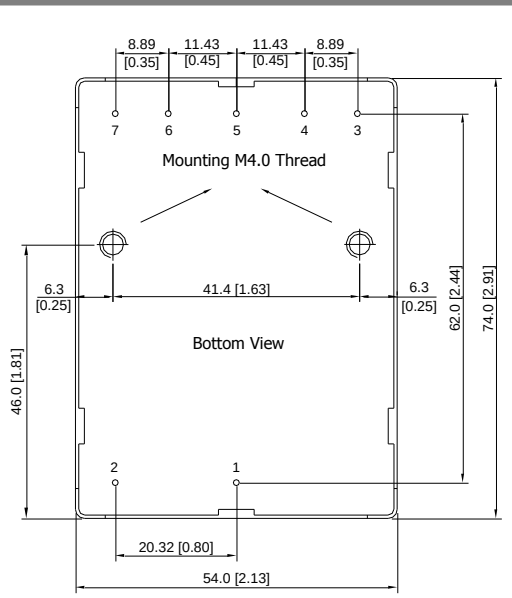
Parameter	Conditions	Min.	Max.
Temperature Range (operational)	Ambient	-40℃	+80℃
Power Derating (5V Output Models)	Above +65℃		0.75W / ℃
Power Derating (Other Models)	Above +65℃		1.2W / ℃
Storage Temperature Range		-40℃	+95℃
Over Temperature Protection	Shutdown at 90℃ (automatic recovery at approx.67℃)		
Humidity (non condensing)		---	95% rel. H
Cooling	Free-Air convection		

Notes

1 This product is not designed for use in critical life support systems, equipment used in hazardous environment, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet.
2 Specifications typical at Ta=+25℃, resistive load, 115VAC, 60Hz input voltage, after warm-up time rated output current unless otherwise noted.
3 Safety approvals cover frequency 47-63 Hz.
4 We recommend to protect the converter by a slow blow fuse in the input supply line.
5 Other input and output voltage may be available, please contact factory.
6 To order the module with chassis mount package, please add a **suffix C** (e.g. AB24S2400C).
7 To order the module in chassis mount with DIN-Rail kit, please add a **suffix D** (e.g. AB24S2400D)
8 That “natural convection” is about 20LFM but is not equal to still air (0 LFM).
9 Specifications are subject to change without notice.

Package Specifications PCB Mounting

Mechanical Dimensions



Pin Connections

Pin	Single Output	Dual Output
1	AC (N)	AC (N)
2	AC (L)	AC (L)
3	No Pin	No Pin
4	-Vout	-Vout
5	No Pin	Common
6	+Vout	+Vout
7	No Pin	No Pin

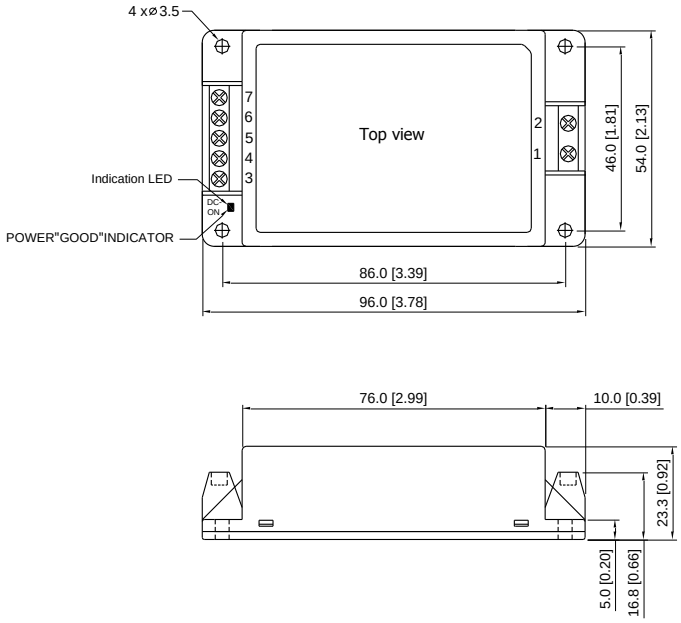
▶All dimensions in mm (inches)
▶Tolerance: ±0.5 (±0.02)
▶Pin diameter ⇔ 1.0 ±0.1 (0.04±0.004)

Physical Characteristics

Case Size	:	74.0x54.0x19.5mm (2.91x2.13x0.77 inches)
Case Material	:	Plastic resin (flammability to UL 94V-0 rated)
Pin Material	:	Copper Alloy with Gold Plate Over Nickel Subplate
Weight	:	137g

Package Specifications Chassis Mounting (order code suffix C)

Mechanical Dimensions



Connections

Pin	Single Output	Dual Output
1	AC (N)	AC (N)
2	AC (L)	AC (L)
3	NC	NC
4	-Vout	-Vout
5	NC	Common
6	+Vout	+Vout
7	NC	NC

NC: No Connection

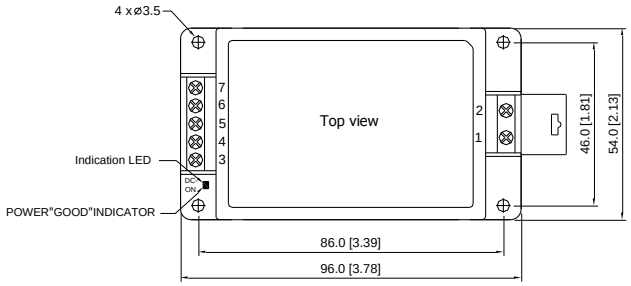
- All dimensions in mm (inches)
- Tolerance: ±0.5 (±0.02)

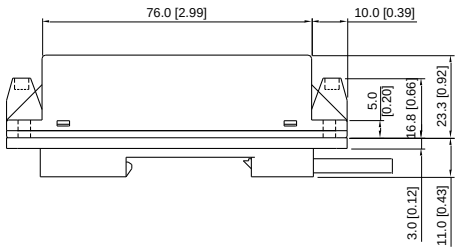
Physical Characteristics

Case Size	:	96.0x54.0x23.3mm (3.78x2.13x0.92 inches)
Case Material	:	Plastic resin (flammability to UL 94V-0 rated)
Weight	:	147g

Package Specifications with DIN Rail Mounting Bracket (order code suffix D)

Mechanical Dimensions

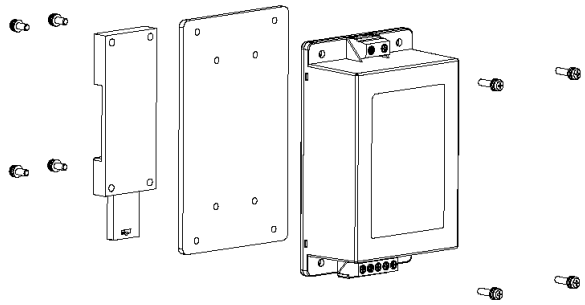


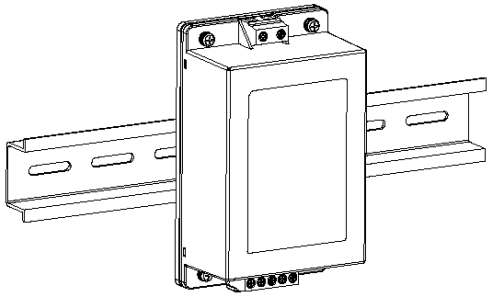


Physical Characteristics

Case Size	:	96.0x54.0x23.3mm (3.78x2.13x0.92 inches)
Case Material	:	Plastic resin (flammability to UL 94V-0 rated)
Weight	:	201g

DIN-Rail Mounting Bracket





Part Numbering System

A	B	24	S	05	00	A
Product type	Family series	Watt	Number of Outputs	Output Voltage I	Output Voltage II	Option Code
AC/DC Power Module	Medical application	24 - 24W	S - Single	05 - 5V	00 - not applicable	A - PCB Mount
			D - Dual	09 - 9V	12 - 12V	C - Chassis Mount
				12 - 12V	15 - 15V	D - Din Rail Mount
				15 - 15V		
				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

WARRANTY

Delta offers a three(3) years limited warranty. Complete warranty information is listed on our web site or is available upon request from Delta.