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TECHNICAL DATASHEET

AC-DC Adapter

24 V 90 W / ADT-090A24AA F-A



ADT- 090A

Highlights & Features

- Efficiency DoE Level VI
- Compact size design
- No load power consumption < 0.15 W
- Universal AC input / Full range
- Fully enclosed plastic case
- Protection: short circuit / over voltage / overload/ over temperature

Standards

CB Certified for worldwide use

Model Number: ADT-090A24AA F-A
Dimensions (L × W x H): 126.0 x 51.0 x 30.0 mm
Unit Weight: 180±10 grams (6.35±0.35 ounces)

General Description

ADT-090A24AA F-A is an extremely compact 24 Vdc 90 W adapter. With an efficiency up to 91.5%, the product meets Efficiency DoE Level VI and no-load power consumption < 0.15 W @ 115 Vac and 230 Vac input. It conforms to major international safety standards according to IEC/EN/UL 62368-1 and IEC/EN 60950-1 approval for ITE including BSMI, PSE and KC. In addition, it also meet the EMI approvals to EN/BS EN 55032 Class B.

Model Information

Model Number	Input Voltage Range	Efficiency Level	Rated Output Voltage	Rated Output Current
ADT-090A24AA F-A	90-264 Vac	Level VI	24 V	3.75 A

Model Numbering

ADT -	090	A	24	A	A	F -	A
Delta AC-DC Adapter	Max wattage	Family Code	Output Voltage (Single Output) 24 for 24 V	Package type: A: Desktop	Input connector type: A: C6 connector	Plug, molding type F: Barrel O.D: 5.5 mm, I.D: 2.5 mm, Length: 11.0 mm	Standard

All parameters are specified at 25°C ambient unless otherwise indicated.
www.DeltaPSU.com (October 2025, Rev.04)

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Specifications

Input Ratings / Characteristics

Nominal Input Voltage		100-240 Vac
Input Voltage Range		90-264 Vac
Nominal Input Frequency		50-60 Hz
Input Frequency Range		47-63 Hz
Input Current (max)	115 Vac	1.3 A
	230 Vac	0.6 A
Efficiency at 100% Load	115 Vac	90% typ.
	230 Vac	91.5% typ.
Average Efficiency (min)		89% @ 115 Vac & 230 Vac
No Load Power Consumption (max)		0.15 W @ 115 Vac & 230 Vac
Power Factor (min)		0.9 @ 230 Vac, Rated output current
Inrush Current		No damage
Leakage Current (max)		0.1mA @ 240Vac/50Hz

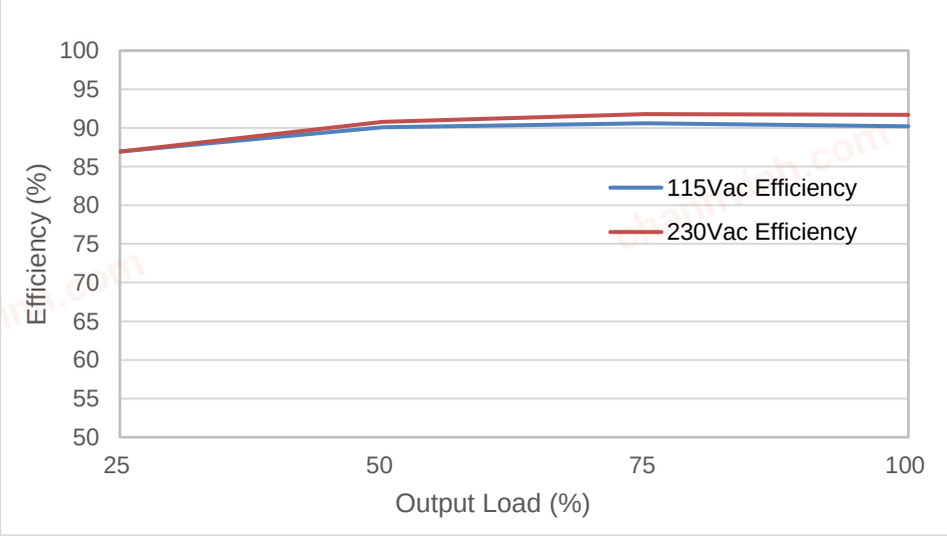


Fig 1. ADT-090A24AA F-A efficiency versus output load.

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Output Ratings / Characteristics

Nominal Output Voltage		24 V
Output Current		0-3.75 A
Output Power		90 W
Line Regulation		± 0.5%
Load Regulation		± 4.5%
PARD* (20 MHz)	0 to 40°C	240 mV pk-pk
	-10 to 0°C	480 mV pk-pk
Start-up Time (typ.)		1000 ms @ 115 Vac 500 ms @ 230 Vac
Rise Time (max)		40 ms @ nominal input, full load
Hold-up Time (typ)		30 ms @ nominal input, full load
Transient Responses		± 5% @ 0.1 A -50% & 50% -100% load change, Slew rate 2.5 A/us ,100 to 10 KHz, 50% Duty Cycle
Capacitive Load (max)		470 uF

*PARD is measured with an AC coupling mode, and in parallel with 0.1 uF ceramic capacitor & 470 uF electrolytic capacitor.

Mechanical

Case		PC
Dimensions (L × W × H)		126 x 51 x 30.0 mm (4.96 x 2.0 x 1.18 inch)
Unit Weight		180±10 grams (6.35±0.35 ounces)
Indicator		N/A
Cooling System		Convection
Terminal	Input	Socket C6 type
	Output	Barrel (O.D: 5.5 mm, I.D: 2.5 mm, length: 11 mm)
	Length	1,800 mm

Environment

Surrounding Temperature	Operating	-10°C to +60°C
	Storage	-40°C to +85°C
Power De-Rating		>40°C de-rated by 2.5%/°C
Operating Humidity		5%-95% RH (non-condensing)
Operating Altitude		5,000 meters (16,400 feet)
Ball Impact Test		Test height 130 cm, 1 sample 1 time, Steel Ball 500g, Concrete floor
Drop Test		Test height 100 cm, 6 face for each sample, concrete floor Function test pass after drop test
Shock Test (Non-Operating)		50 G, 11 ms, 1 shock for each direction
Vibration (Non-Operating)		5-500 Hz, 2.09 Grms, 20 mins, one cycle for each three axis

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Protections

Overvoltage (max)	33 V, Latch
Overload / Overcurrent (max)	120-180% , Latch
Over Temperature	Latch Mode
Short Circuit	Latch Mode
Pollution Degree	2
Protection Against Shock	Class I

Reliability Data

MTBF	> 300,000 hrs. per Telcordia SR-332 at Input: 115 Vac, Output: 100% load, Ta: 25°C
Expected Cap Life Time	5 years (50% load @ 25°C)

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Safety Standards / Directives

Electrical Safety		IEC/EN 60950-1 ; IEC/UL/EN 62368-1
		BSMI CNS14336-1
		PSE J60950-1 (H29)
		KC K60950-1
CE		Comply with EMC Directive 2014/30/EU and the Low Voltage Directive 2014/35/EU
UKCA		In conformance with Electromagnetic Compatibility Regulations 2016 and Electrical Equipment (Safety) Regulations 2016
Galvanic Isolation	I/P to O/P	3,000Vac

EMC

EMC / Emissions		CISPR/EN/BS EN 55032 Class B BSMI CNS13438 FCC Part 15 KN32
Harmonic Current Emissions	IEC61000-3-2	Class D
Immunity to		EN/BS EN 55024; KN35
Radiated and conducted Emissions		Conducted Emissions: EN/BS EN 55032 Class B Radiated Emissions: EN/BS EN 55032 Class B
Voltage Flicker	IEC61000-3-3	
Electrostatic Discharge	IEC61000-4-2	Level 4 Criteria A[1)] Air Discharge: 15 kV Contact Discharge:8 kV
Radiated Field	IEC61000-4-3	Level 2 Criteria A[1)] 80 MHz-1 GHz, 3 V/m , 80% AM (1 KHz)
Electrical Fast Transient / Burst	IEC61000-4-4	Level 2 Criteria A[1)]: 2 kV
Surge	IEC61000-4-5	Level 3 Criteria A[1)] Common Mode[4)]: 2 kV Differential Mode[5)]: 1 kV
Conducted	IEC61000-4-6	Level 2 Criteria A[1)] 150 kHz-80 MHz, 3 Vrms, Sine Wave, 80%, AM modulation
Power Frequency Magnetic Fields	IEC61000-4-8	Level 2 Criteria A[1)] Magnetic field strength 1 A/m
Voltage Dips	IEC61000-4-11	Voltage dips 70% reduction/0.5 periods (Criterion A[1)]) 40% reduction/5 periods (Criterion B[2)]) Voltage short interruptions 5% reduction/250 periods (Criterion B[2)])

1) Criteria A: Normal performance within the specification limits
2) Criteria B: Output out of regulation, or shuts down during test. Automatically restore to normal operation after test.
3) Criteria C: PSU shuts down during test, but need operator to reset.
4) Asymmetrical: Common mode (Line to earth)
5) Symmetrical: Differential mode (Line to line)

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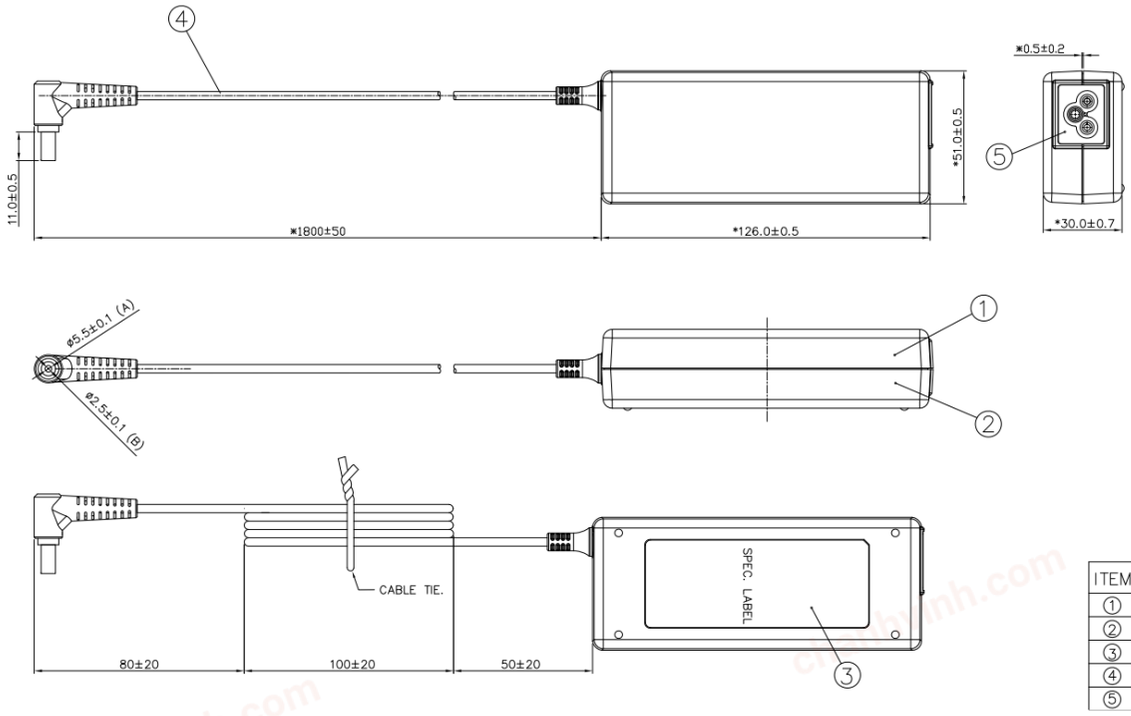
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Dimensions

L x W x H: 126.0 x 51.0 x 30.0 mm (4.96 x 2.0 x 1.18 inch)

NO.	PLUG
A	OUTSIDE −
B	INSIDE +



ITEM	PART NAME	COLOR
①	COVER	BLACK
②	CHASSIS	BLACK
③	SPEC LABEL	BLACK
④	POWER CORD	BLACK
⑤	SOCKET ASS'Y	BLACK

Engineering Data

Output Load De-rating V.S. Surrounding Air Temperature

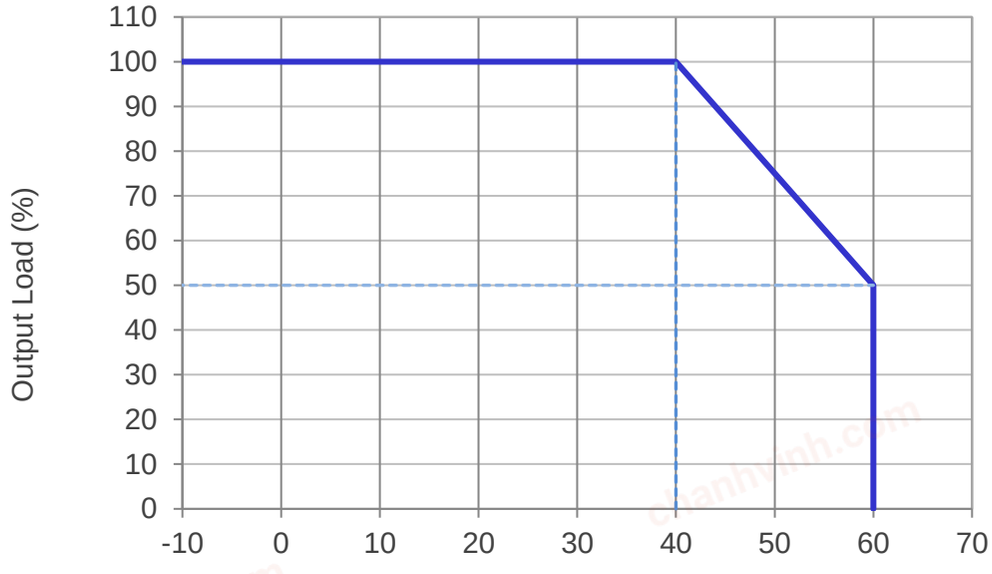


Fig. 2 De-rating for All Mounting Orientation
> 40°C de-rate power by 2.5% / °C

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Attention

Delta provides all information in the datasheets on an “AS IS” basis and does not offer any kind of warranty through the information for using the product. In the event of any discrepancy between the information in the catalog and datasheets, the datasheets shall prevail (please refer to www.DeltaPSU.com for the latest datasheets information). Delta shall have no liability of indemnification for any claim or action arising from any error for the provided information in the datasheets. Customer shall take its responsibility for evaluation of using the product before placing an order with Delta.

Delta reserves the right to make changes to the information described in the datasheets without notice.

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