

AC-DC Adapter

24 V 150 W / ADT-150A24AA

ADT-150A



Highlights & Features

- Meet efficiency DoE Level VI & CoC Tier 2
- No load power consumption < 0.15 W
- Universal AC input / Full range
- Fully enclosed plastic case
- Protection: short circuit / over voltage / overload/ over temperature

Safety Standards



CB Certified for worldwide use

Model Number: ADT-150A24AA □-A
Unit Weight: 405 ±10 grams (14.29 ±0.35 ounces)
Dimensions (L×W×H): 160 x 76.2 x 25.6 mm

General Description

The ADT Series of AC-DC desktop adapter in compact size. ADT-150A24AA meet the DoE Level VI and CoC Tier 2 energy efficiency requirements with levels up to 92% and the extremely low no-load power consumption below 0.15 W. The series conform to major international safety standards according to IEC/EN/UL 62368-1 and IEC/EN 60950-1 approval for ITE. In addition, they 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-150A24AA □-A | 90-264 Vac | Level VI & CoC Tier2 | 24 V | 6.25 A |

Model Numbering

| ADT - | 150 | A | 24 | A | A | □ - | A |
|-------------------------------------|-------------|-------------|-------------------------------|-------------|---------------------------|---|----------|
| Desktop Adapter for ITE application | Max wattage | Family Code | Output Voltage 24 for 24 V | A : Desktop | Input Connector A : C6 | Output Connector H : Tuning fork O.D: 5.5 mm, I.D: 2.5 mm, length: 11.0 mm K : 4 Pin Din | Standard |

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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 | 1.85 A |
| | 230 Vac | 1.0 A |
| Efficiency at 100% Load | 115 Vac | 91.0% typ. |
| | 230 Vac | 92.0% typ. |
| Average Efficiency (min) | 89% @ 115 Vac & 230 Vac | |
| Efficiency @ 10% load | 79% @ 115 Vac & 230 Vac | |
| No Load Power Consumption (max) | 0.15 W @ 115 Vac & 230 Vac | |
| Power Factor @ 100% load (min) | 0.9 @ 230 Vac | |
| Inrush Current | No damage | |
| Leakage Current @ 240 Vac/50 Hz (max) | 250 uA | |

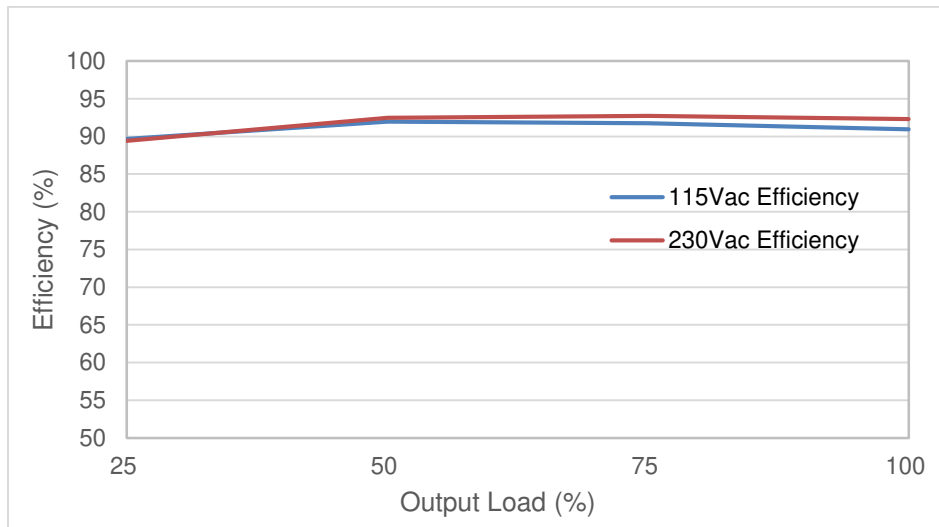


Fig 1. ADT-150A24AA Efficiency versus Output Load

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Output Ratings / Characteristics

| | | |
|------------------------|---|--------------|
| Nominal Output Voltage | 24 V | |
| Output Current | 6.25 A | |
| Output Power | 150 W | |
| Line Regulation | ± 0.5% | |
| Load Regulation | ± 3.0% | |
| PARD* (20 MHz) | 0 to 40°C | 240 mV pk-pk |
| | -10 to 0°C | 480 mV pk-pk |
| Start-up Time | 1000 ms typ. @ 115 Vac 500 ms typ. @ 230 Vac | |
| Rise Time (max) | 40 ms @ nominal input, full load | |
| Hold-up Time (typ.) | 30 ms @ 115 Vac, 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 | |

*PARD is measured with an AC coupling mode, and in parallel with 0.1uF ceramic capacitor & 47uF electrolytic capacitor.

Mechanical

| | | |
|----------------------------|--|--|
| Case | PC | |
| Dimensions (L × W × H) | 160 x 76.2 x 25.6 mm (6.3 x 3 x 1.00 inch) | |
| Unit Weight | 405 ±10 grams (14.29 ±0.35 ounces) | |
| Indicator | N/A | |
| Cooling System | Convection | |
| Output Cable Specification | Connector | Tuning fork (O.D: 5.5 mm, I.D: 2.5 mm, length: 11 mm) / 4 Pin Din |
| | Length | #17AWG , 1800 mm |
| Input Socket | C6 | |

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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 500 g, 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 |

Protections

| | |
|------------------------------|------------------|
| Overvoltage (max) | 33 V, Latch mode |
| 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 CN S14336-1 | |
| | CCC GB 4943.1-2011 | |
| | PSE J 60950-1 (H29) | |
| | KC K 60950-1 | |
| 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 | 3000 Vac |

EMC

| | | |
|-----------------------------------|----------------|--|
| EMC / Emissions | | CISPR/EN/BS EN 55032 Class B BSMI CNS 13438 GB/T 9254-2008 KN 32 |
| Harmonic Current Emissions | IEC 61000-3-2 | Class D ; GB 17625.1-2003 |
| Immunity to | | EN/BS EN 55024; KN 35 |
| Voltage Flicker | IEC 61000-3-3 | |
| Electrostatic Discharge | IEC 61000-4-2 | Level 4 Criteria A ¹⁾ Air Discharge: 15 kV Contact Discharge: 8 kV |
| Radiated Field | IEC 61000-4-3 | Level 2 Criteria A ¹⁾ 80 MHz – 1 GHz, 3 V/m , 80% AM (1 KHz) |
| Electrical Fast Transient / Burst | IEC 61000-4-4 | Level 2 Criteria A ¹⁾ : 1 kV |
| Surge | IEC 61000-4-5 | Level 3 Criteria A ¹⁾ Common Mode ⁴⁾ : 2 kV Differential Mode ⁵⁾ : 1 kV |
| Conducted | IEC 61000-4-6 | Level 2 Criteria A ¹⁾ 150 kHz – 80 MHz, 3 Vrms, Sine Wave, 80%, AM modulation |
| Power Frequency Magnetic Fields | IEC 61000-4-8 | Level 1 Criteria A ¹⁾ Magnetic field strength 1 A/m |
| Voltage Dips | IEC 61000-4-11 | Voltage dips 70% reduction/0.5 periods (Criterion B ²⁾) 40% reduction/5 periods (Criterion C ³⁾) Voltage short interruptions 5% reduction/250 periods (Criterion C ³⁾) |

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)

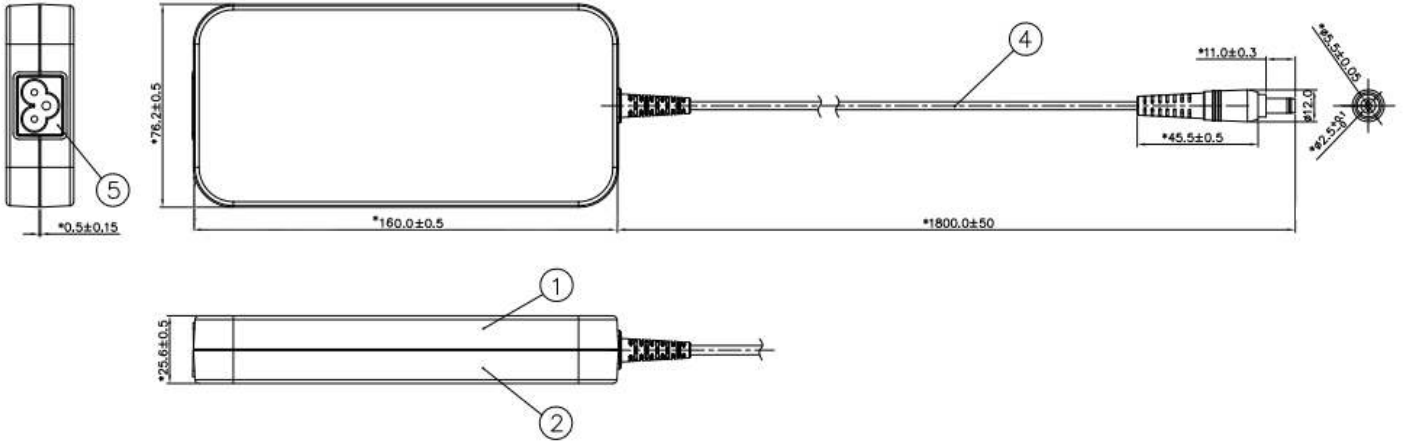
5) Symmetrical: Differential mode (Line to line)

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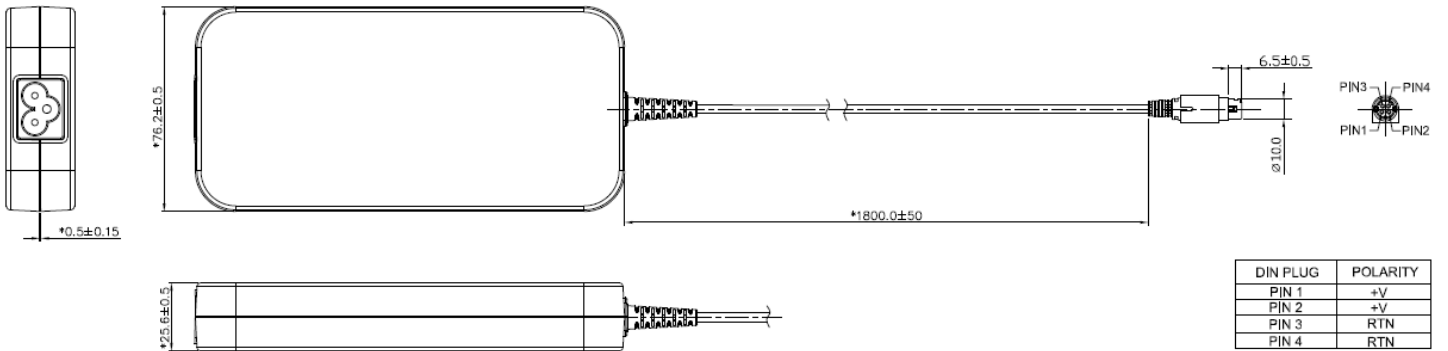
Dimensions (ADT-150A24AA H-A)

L x W x H: 160 x 76.2 x 25.6 mm (6.3 x 3.0 x 1.00 inch)



Dimensions (ADT-150A24AA K-A)

L x W x H: 160 x 76.2 x 25.6 mm (6.3 x 3.0 x 1.00 inch)



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Engineering Data

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

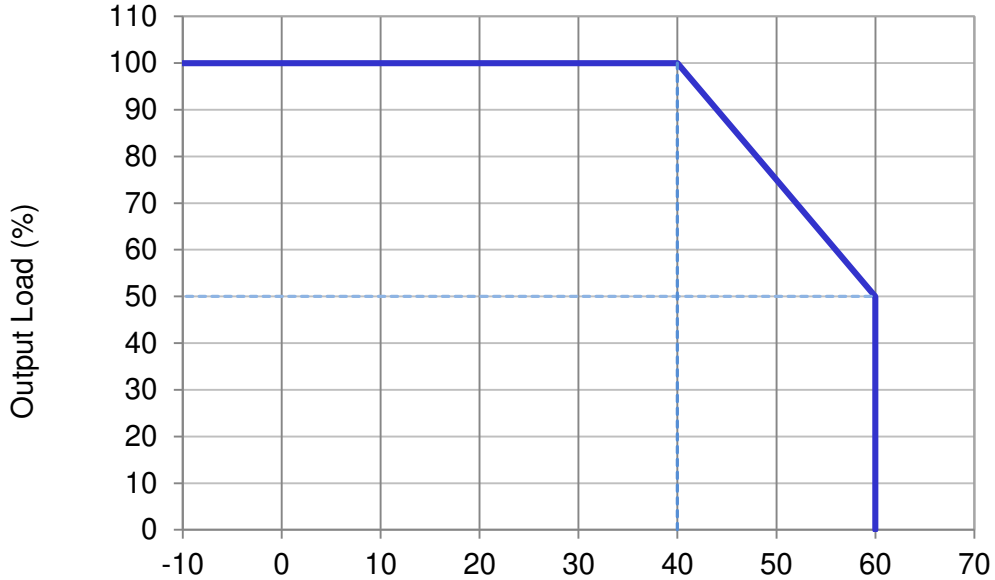


Fig. 1 De-rating for All Mounting Orientation
 > 40°C de-rate power by 2.5% / °C

Others

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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