

AC-DC Adapter

24 V 150 W / ADT-150C24AC K-A

ADT-150C



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-150C24AC K-A
Unit Weight: 0.47 kg (1.04 lb)
Dimensions (L×W×H): 165.1 x 76.1 x 31.5 mm
 (6.5 x 3.0 x 1.24 inch)

General Description

The ADT Series of AC-DC desktop adapter in compact size. ADT-150C24AC K-A meet the DoE Level VI and CoC Tier 2 energy efficiency requirements with levels up to 91% 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 55032 class B.

Model Information

| Model Number | Input Voltage Range | Efficiency Level | Rated Output Voltage | Rated Output Current |
|------------------|---------------------|---------------------------|----------------------|----------------------|
| ADT-150C24AC K-A | 90-264 Vac | DOE Level VI & CoC Tier 2 | 24 V | 6.25 A |

Model Numbering

| ADT - | 150 | C | 24 | A | C | K - | A |
|---------------------|-------------|-------------|-------------------------------|-------------|----------------------------|----------------------------------|----------|
| Delta AC-DC Adapter | Max wattage | Family Code | Output Voltage 24 for 24 V | A : Desktop | Input Connector C : C14 | Output Connector K : 4pin 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 | 90% typ. |
| | 230 Vac | 91% 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 (max) | 0.25 mA @ 240 Vac/50 Hz | |

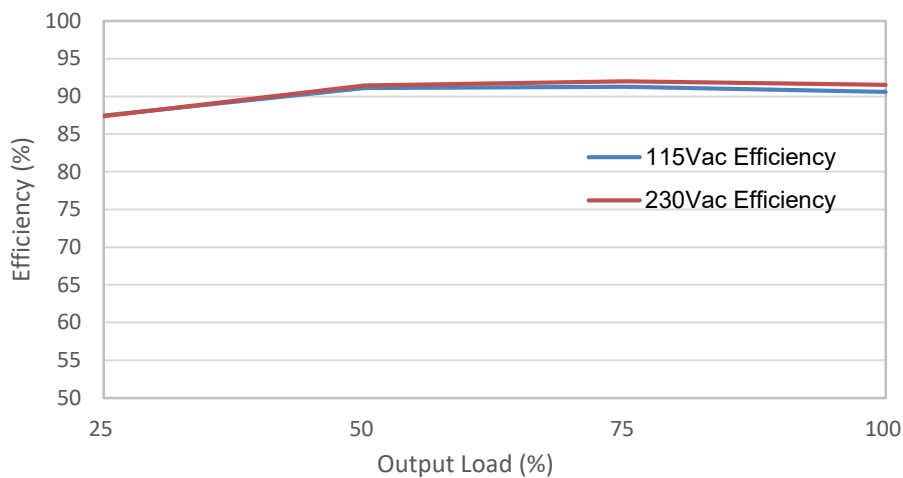


Fig 1. ADT-150C24AC K-A Efficiency versus Output Load

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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.) | 16 ms @ nominal input, full load | |
| Transient Responses | ± 10% @ 0.1 A -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) | 165.1 x 76.1 x 31.5 mm (6.5 x 3.0 x 1.24 inch) | |
| Unit Weight | 0.47 kg (1.04 lb) | |
| Indicator | N/A | |
| Cooling System | Convection | |
| Terminal | Input | C14 |
| | Output | 4Pin Din |
| | Length | UL1571 #17AWG , 1800 mm |

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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 (16400 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, 11ms, 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 Mode |
| 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: 115Vac, 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 CNS 14336-1 |
| | | CCC GB 4943.1 |
| | | PSE J 62368-1 |
| | | 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 FCC Part 15 GB/T 9254 KN 32 |
| Harmonic Current Emissions | IEC 61000-3-2 | Class D ; GB 17625.1 |
| Immunity to | | EN/BS EN 55024; KN 35 |
| Radiated and conducted Emissions | | Conducted Emissions: EN/BS EN 55032 Class B Radiated Emissions: EN/BS EN 55032 Class B |
| 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⁾ : 2 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 95% reduction/0.5 periods (Criterion A ¹⁾) 30% reduction/5 periods (Criterion B ²⁾) Voltage short interruptions 95% 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)

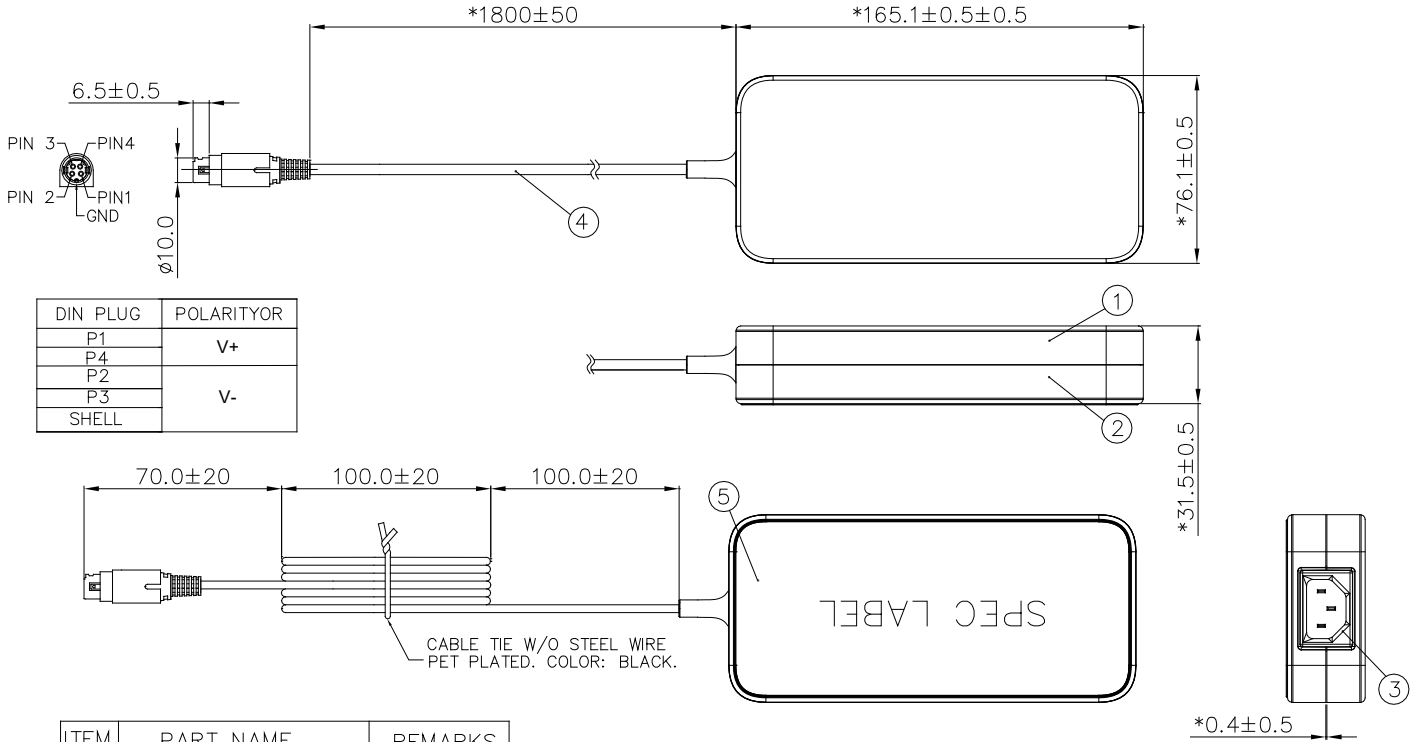
5) Symmetrical: Differential mode (Line to line)

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Dimensions

L x W x H: 165.1 x 76.1 x 31.5 mm (6.5 x 3.0 x 1.24 inch)



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

Engineering Data

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

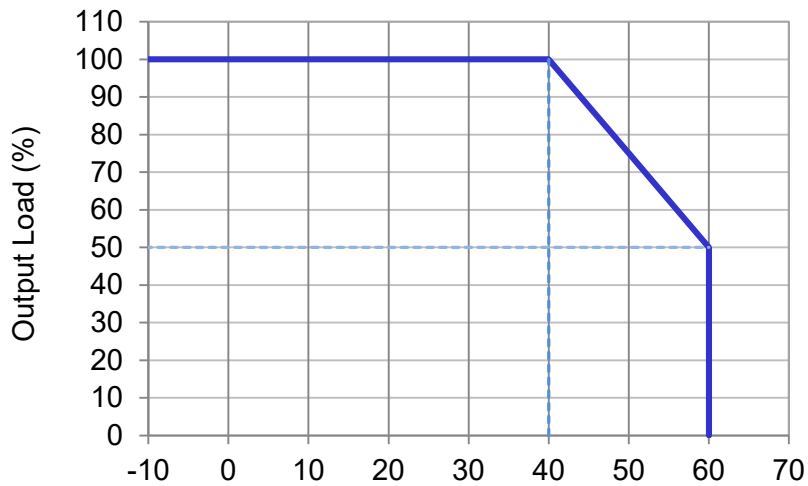


Fig. 1 De-rating for All Mounting Orientation
 > 40°C de-rate power by 2.5% / °C

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Attention

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

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