

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	

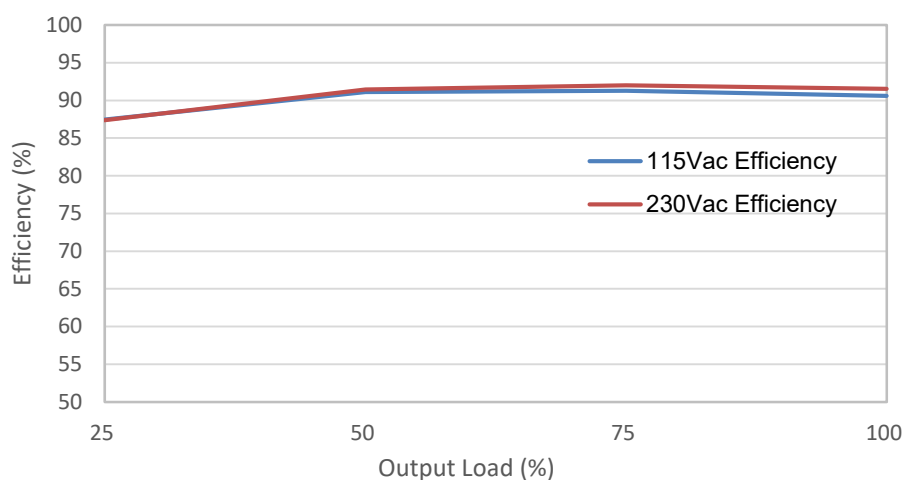


Fig 1. ADT-150C24AC K-A Efficiency versus Output Load

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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

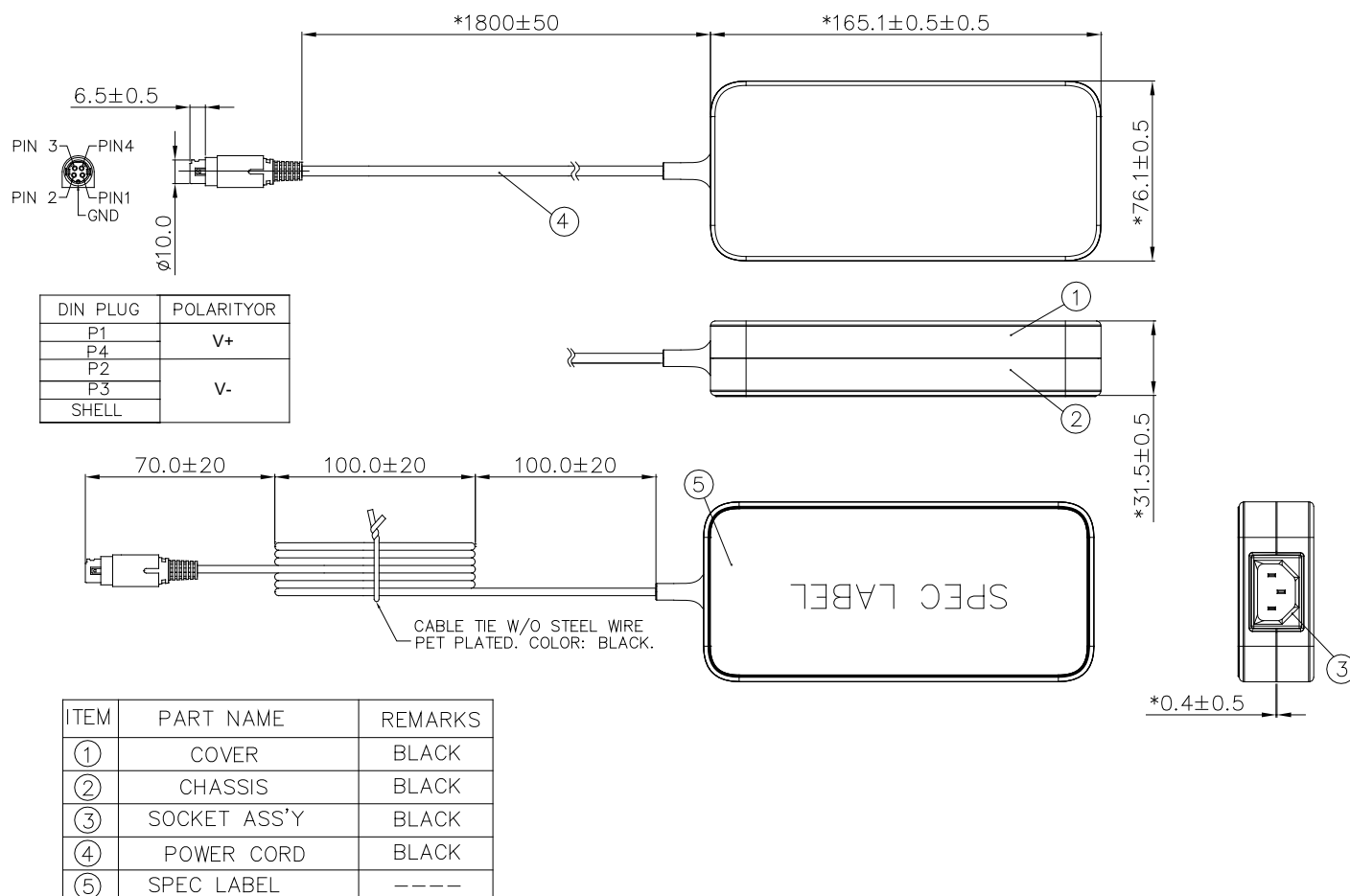
2) Criteria B: Output out of regulation, or shuts down during test. Automatically restore to normal operation after test.

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)

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



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

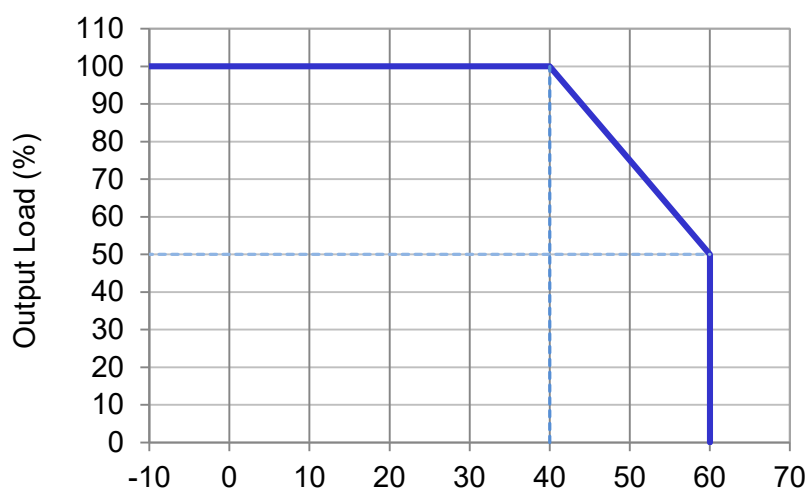


Fig. 1 De-rating for All Mounting Orientation
 $> 40^{\circ}\text{C}$ de-rate power by $2.5\% / ^{\circ}\text{C}$

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