

Features

Universal 100–240V AC input
 5 output voltages, up to 36W
 ANSI/AAMI ES60601-1 medical safety
 Leakage current <300µA
 DoE Level VI, CoC Tier 2, ErP (Lot 7)
 No-load power ≤0.1W
 IEC C14 inlet, Class I
 300,000 hours MTBF @ 25°C
 Natural convection cooling, green
 power LED
 OVP, OCP, SCP

44ATM036T-Pxyz-2.5

36W Medical Desktop AC/DC Power Supply (PSU)



Image for illustration purposes only.



Description

Ideal Power's 44ATM036T-Pxyz-2.5 is a series of up to 36W medical desktop AC/DC power supplies with a regulated single output, available in 5 output voltages. Each unit is a Class I design with an IEC C14 mains inlet, so it must be connected to a supply with protective earth. The series is intended for medical electrical equipment. Applied parts for direct patient contact have not been evaluated, so this is assessed in the end system.

Certified to UKCA, CE, TUV-GS, cURus, FCC and PSE, and built to ANSI/AAMI ES60601-1:2012, EN 60601-1 and IEC 60601-1, with conducted and radiated emissions to FCC Class B. The unit meets DoE Level VI, CoC Tier 2, ErP (Lot 7) and RoHS requirements. These are primarily used in medical equipment, information technology equipment and industrial controllers, and customised solutions are available upon request.

Part Number Breakdown

44ATM	036	T	P	xyz	2.5
Series Name	Output Power	Model Suffix	Input Connector Type P = C14 A = C8	Output Voltage	Output Connector

Models

Part Number	Output Voltage (V DC)	Output Current (A)	Output Power (W)	Output Regulation (V)	Voltage Tolerance (%)	Ripple & Noise (mVp-p)	Efficiency (av.) (%)	Efficiency @ 10% Load (%)
44ATM036T-P050-2.5	5.0	5.0	25.0	4.70–5.30	±6	80	84.245	75.470
44ATM036T-P090-2.5	9.0	4.0	36.0	8.55–9.45	±5	90	87.403	78.303
44ATM036T-P120-2.5	12.0	3.0	36.0	11.40–12.60	±5	120	87.403	78.303
44ATM036T-P180-2.5	18.0	2.0	36.0	17.10–18.90	±5	180	87.403	78.303
44ATM036T-P240-2.5	24.0	1.5	36.0	22.80–25.20	±5	240	87.403	78.303

Input Specifications

Parameter	Specification
Input Voltage	100–240V AC, single phase
Input Frequency	50–60Hz
Input Current	1A max.
Inrush Current (Cold Start at 25°C, Full Load)	70A max. @ 230V AC
No-load Power Consumption	≤0.1W @ 230V AC
Energy Efficiency	DoE Level VI, CoC Tier 2, ErP (Lot 7)

Output Specifications

Parameter	Min.	Typ.	Max.	Units	Notes
Output Voltage Range	5	-	24	V DC	Varies per model – refer to models table
Ripple & Noise	80		240	mVp-p	Measured at nominal line voltage & full load with a 20MHz bandwidth oscilloscope with a 0.1µF multi cap. & a 47µF low-ESR electro cap. across the output connector terminals – refer to models table for details
Voltage Tolerance	-	±5	±6	%	5V is ±6%, all others in series ±5%
Output Cable	UL 1185 single core with shield; strands (TC), OD and finish per model below Cut length 1,560 +10/-0mm, Polarity: Centre positive (+Vcc), sleeve GND				
Output Connector (C = Conductor, S= Shield)	5V: C: TC/0.16 x 65 S: TC/0.16 x 65 #16 AWG OD 4.0mm Black gloss	9V: C: TC/0.18 x 34 S: TC/0.12 x 54 #18 AWG OD 3.5mm Black gloss	12V: C: TC/0.18 x 34 S: TC/0.12 x 54 #18 AWG OD 3.5mm Black gloss	18V: C: TC/0.16 x 26 S: TC/0.12 x 45 #20 AWG OD 3.0mm Black gloss	24V: C: TC/0.16 x 26 S: TC/0.12 x 45 #20 AWG OD 3.0mm Black gloss

Protection

Parameter	Specification
Overvoltage Protection	Vout x 200% max., latch off
Short Circuit Protection	Automatic recovery
Overcurrent Protection	Iout x 200% max., automatic recovery

Environmental Characteristics

Parameter	Specification
Operating Temperature	-20°C to +40°C
Storage Temperature	-20°C to +80°C
Operating Humidity	20–80%RH, non-condensing
Storage Humidity	10–90%RH, non-condensing
Atmospheric Pressure (Operating)	540–1060hPa
Cooling Method	Natural convection

Safety Standards

Parameter	Specification
Certifications	UKCA, CE, TUV-GS, cURus, FCC, PSE, RoHS, REACH
Safety Standards	ANSI/AAMI ES60601-1:2012 (edition 3.1), EN 60601-1, IEC 60601-1
Dielectric Strength (Hi-pot)	Primary to secondary: 4,000V AC for 1 minute Primary to frame ground: 1,770V AC for 1 minute 10mA max. cut-off current
Insulation Resistance	Primary to secondary: 10MΩ Primary to frame ground: 10MΩ 500V DC test voltage
Leakage Current	5V <0.1mA 9V <300μA 12V <300μA 18V <300μA 24V <300μA

Electromagnetic Compatibility (EMC)

Parameter	Specification
EMC Standards	FCC (conducted and radiated emissions Class B), CE

Reliability

Parameter	Specification
MTBF	300,000 hours calculated @ 25°C, Telcordia SR-332
Expected Service Life	100,000 hours

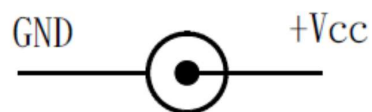
General Specifications

Parameter	Specification
Input Connector	IEC C14 inlet
Enclosure Flammability	UL 94V-0
Power Indicator	Green LED, power on

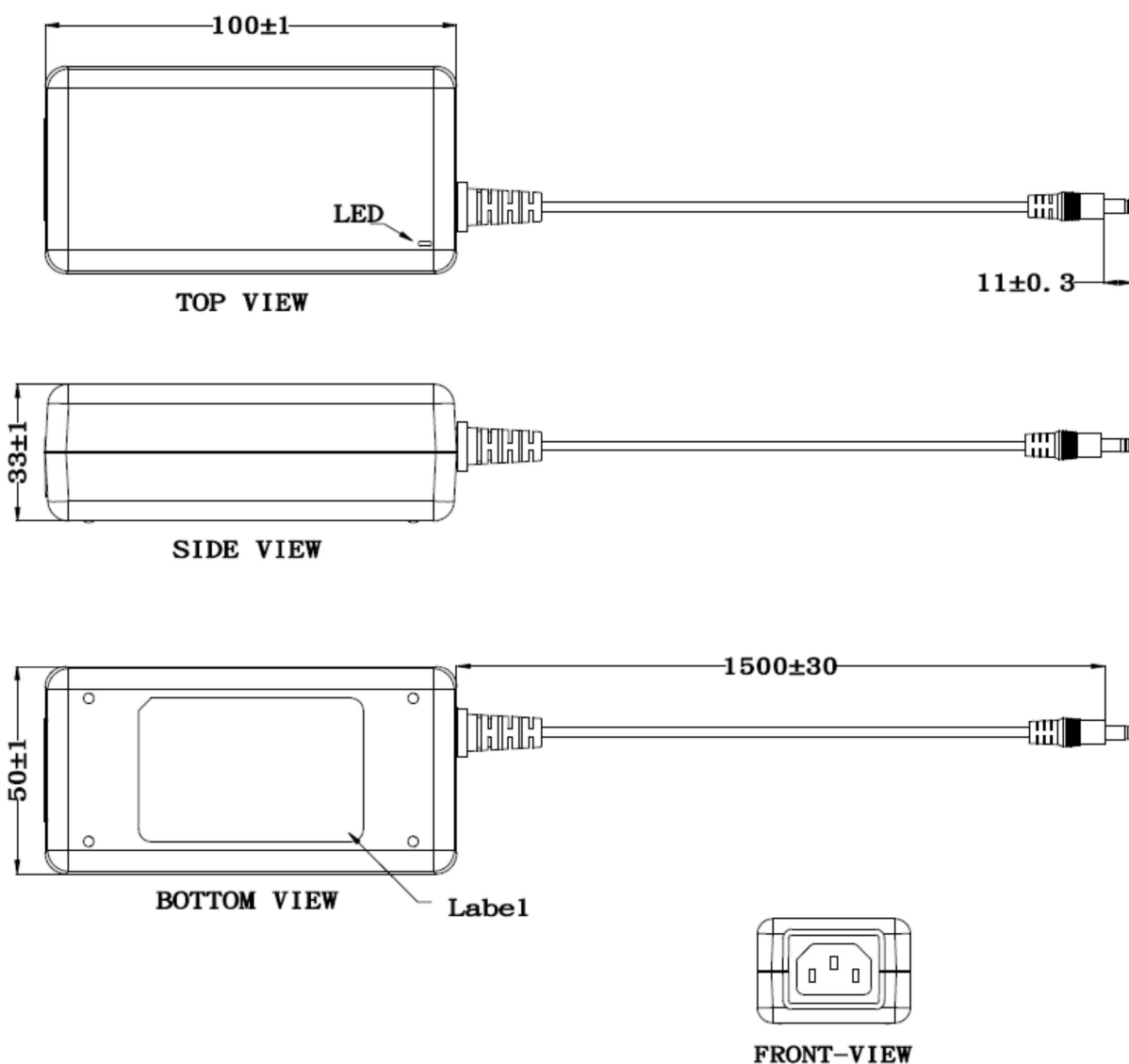
Weight & Dimensions

Parameter	Specification
Dimensions	100mm(L) x 50mm(W) x 33mm(H)
Weight (Typical)	170g

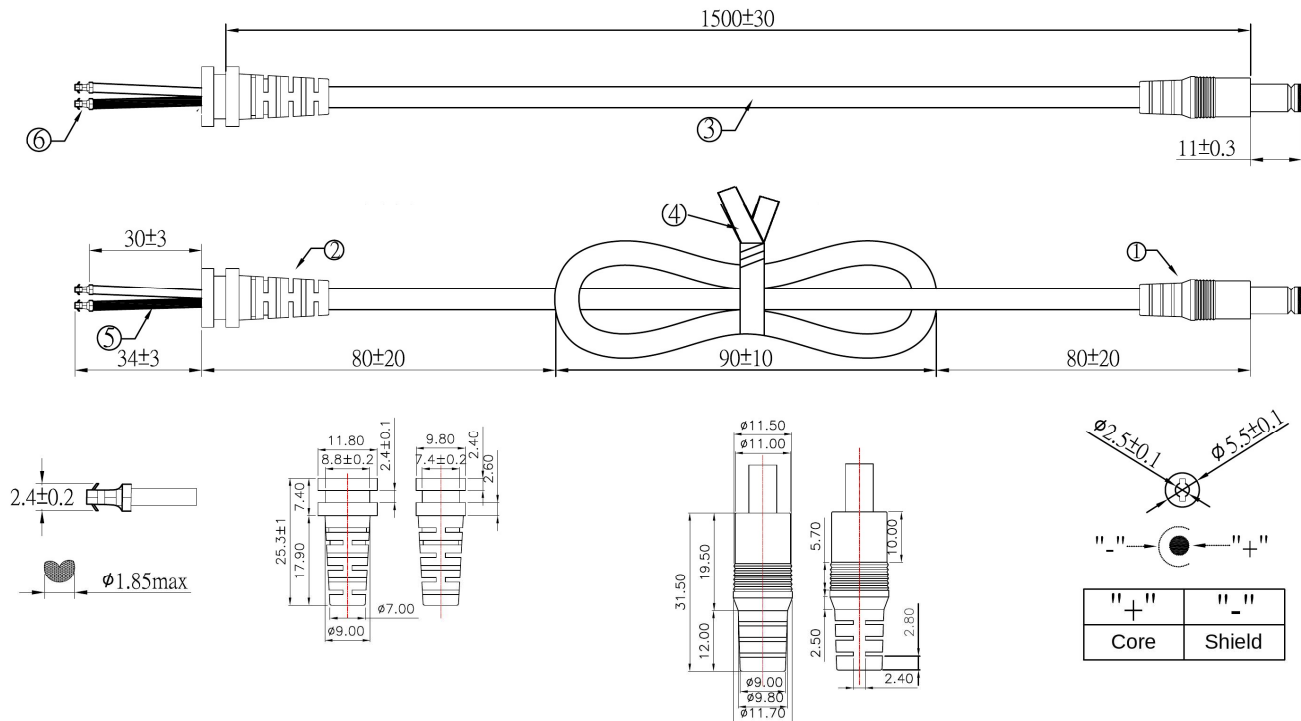
Mechanical Drawing



Output Cable Plug Pin Assignment



Dimensions in millimetres, individual tolerances as marked on the drawing.

DC Cord Drawing


Drawing shown: 44ATM036T-P120-2.5. Other models differ in cable gauge, cable OD and wire-end termination.

- ① **Plug:** Ø2.5 x Ø5.5 x 23mm tuning fork with cannellure, black; two-shot overmould (P-224) in black PVC 60P. DC plug insulation is black.
- ② **Strain relief:** SR-208, black PVC 75P. Cable moulded at least 5mm into the strain relief.
- ③ **Cable:** Varies per model; refer to Output Specifications for details
- ④ **Twist tie:** PET, no iron core, 10cm, black.
- ⑤ **Heat-shrink sleeve:** black, Ø1.0 x 35mm (Ø2.0 x 35mm on the 5V model).
- ⑥ **Terminals:** Ø1.8 double-hook PCB terminals x 2; conductor strands to protrude ≤0.2mm beyond the terminal.

Tests: pull 1m / 20lb / 60S (hanging load); flex 200g load, ±60°, 40 cycles per minute, 2,000 cycles min.; insulation resistance 20MΩ; conductor resistance 1.5Ω max.

Materials: metal parts to RoHS and REACH; PVC parts to RoHS, REACH, PAHs, PAEs and California Proposition 65.

Dimensions in millimetres, general tolerances: ≤2mm ±0.15mm, 2–5mm ±0.20mm, 5–10mm ±0.50mm, 10–30mm ±1.00mm, ≥31mm ±1.50mm.

Label Drawing



Label shown: 44ATM036T-P120-2.5, enlarged. The model and output rating change with each model.

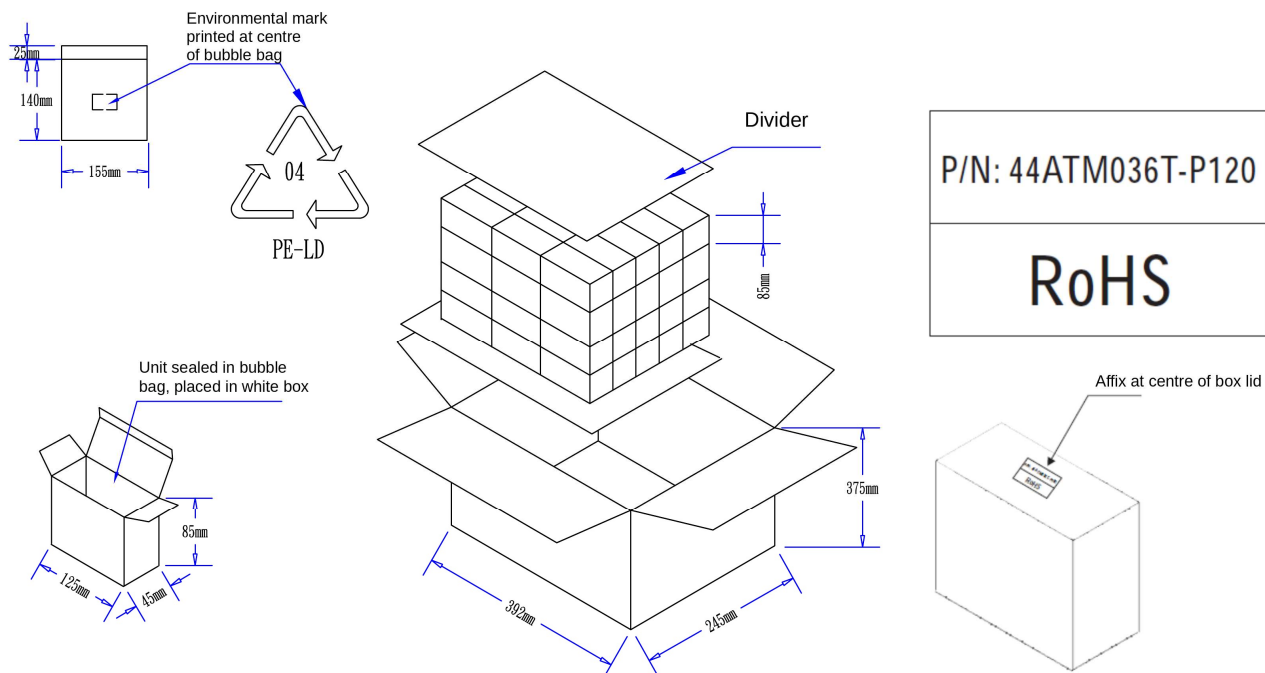
Label: metallised polyester (silver gloss), black background with silver printing, 53.5mm(L) x 34mm(W) ± 0.2 mm, thickness 75#.

Serial number: XXYYZZZZZZ, where XX = year, YY = week and ZZZZZZ = 000001–999999.

Codes: "XXX" is the label supplier code; ID NO. "X" is the manufacturer code.

Packaging

Parameter	Specification
Bubble Bag	140mm(L) x 155mm(W) x 25mm, 9KG, clear, open at one end, environmental mark printed at centre; 1 per unit
White Box	125mm(L) x 45mm(W) x 85mm(H), 350P+CE (C9 paper laminated to 350lb white board); 1 per unit
Cardboard Divider	380mm(L) x 233mm(W) x 6mm, K=K; 2 per carton
Carton	392mm(L) x 245mm(W) x 375mm(H), K=K
Quantity per Carton	60pcs (5 x 3 x 4)
Packing Method	Each unit is sealed in a bubble bag and placed in its white box; all units face the same way. Carton and white box dimensions are external. All packing materials meet environmental requirements.



White box label: PET, white background with black printing, 45mm(H) x 30mm(W) ± 0.2 mm, thickness 50#. Carries the **part number** and **RoHS**, affixed at the centre of the white box lid. Label shown: 44ATM036T-P120-2.5.

Notes

1. In the series name, xyz is the output voltage to one decimal place: 050 = 5.0V, 090 = 9.0V, 120 = 12.0V, 180 = 18.0V, 240 = 24.0V.
2. Efficiency (av.) is the average of the efficiencies at 25%, 50%, 75% and 100% rated load, at 115V AC and 230V AC. Efficiency @ 10% load is measured at 230V AC.
3. Diagram dimensions all in mm unless stated otherwise.