

# Medical Grade Adapter

## APE-0036

*Interchangeable AC blades adapter for medical devices*



### Highlights:

- n For Medical Application
- n Wall plug-in type
- n Output up to 36W
- n Interchangeable AC blades
- n DOE Level V,VI
- n Universal 90VAC~264VAC input
- n OCP,OVP
- n >100kHour MTBF
- n 2MOPP Isolation
- n Small size



### Key Specification

Part number	APE-0036
Output Voltage	5.0V-48.0V
Rated Output Current	0.625-4.8A
Rated Output Power	5-8V@24W 9-11V@27W 12V&24V@36W 12-48V@30W
Output Voltage Regulation	±5%
Ripple & Noise	<2%
Input Type	Interchangeable AC blades
Input Voltage	90VAC~264VAC
Input Current	<1.0A
Average Efficiency	> 80%
Inrush Current	<60A
Touch Current	<100uA @ Normal Condition, <300uA @ Single Fault Condition
Operation Temperature	-10 to +40°C
Life	3 Years
Dimension	73.6x43x32.5mm

Part number:

APE - 0036 - 123 - AB - BB

Series                      Rated power              Output voltage              AC input type              Output connector type

## Output voltage

123	3 digit numbers between 050-480 ,represents the output voltage 5.0-48.0V.
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## AC input type

NA	North America plug
EU	Europe plug
CN	China plug
JP	Japan plug
UK	UK plug
AU	Australia plug
KR	Korea plug
IN	India plug
WW	Interchangeable plug

## Output connector type (we offer different type of output connectors)

BB	Connector Type
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## Specifications

*All specifications are for rated input/output and 25°C unless otherwise specified*

## Output Characteristics

Output Voltage Total Regulation	±5%
Turn on delay	<3 second
Rise Time	<150ms
Holdup Time	>8.3ms

## Protections

Over Current Protection (OCP)	<130% Rated output current Auto-restart after fault condition is removed
Short Circuit Protection (SCP)	Auto-restart after fault condition is removed
Over Voltage Protection (OVP)	Auto recovery
Over Temperature Protection (OTP)	(optional)

## Environmental

No Load Power Consumption	Meet DoE level V,VI
Operation Ambient Temperature	-10°C to 40°C.
Operation Humidity	20%-95% RH non-condensing
Storage Ambient Temperature	-40°C to 85°C
Storage Humidity	10%-95% RH non-condensing
Operating Altitude	0-3,000 meters
Shock (Non-Operation)	50G, 11ms, 3 shocks for each direction
Vibration (Operation)	5-500Hz, 2G <sub>RMS</sub> , 15 Minutes for each three axis

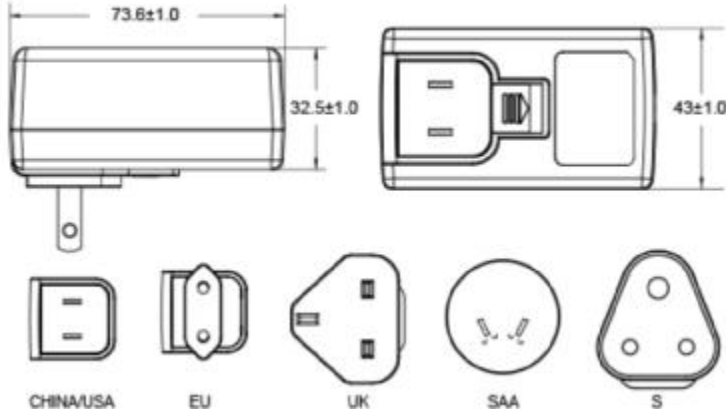
## Specifications

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Reliability	
MTBF	>100K hrs. MIL-HDBK-217F. 25°C
Life	>3 Years
Safety & Directives	
Safety Standards, compliance only	UL60601-1 2 <sup>nd</sup> edition, UL60601-1 3 <sup>rd</sup> edition+A1 CB Report TUV EN60601-1:2006, UL60601-1+CAN/CSA60601-1:(Ed.3.2005)
Directives, Compliance only	MDD Directive 93/42/EEC RoHS Directive 2011/65/EU Compliant
Energy Saving	DOE Level VI
Dielectric Voltage	Primary to Secondary (2XMOPP): 4kVAC
Touch Current @264VAC, 60Hz	<100uA @ Normal Condition <300uA @ Single Fault Condition
EMC	
Emissions	EN55011/EN55022, FCC TITLE 47: Class B
Harmonic Current Emissions	IEC61000-3-2, Class D
Voltage Flicker	IEC61000-3-3
Electrostatic Discharge	IEC61000-4-2, Level 4, Criteria A.
Electrical Fast Transient / Burst	IEC61000-4-4, Level 3 Criteria A. 2kV
Surge	IEC61000-4-5, Level 3 Criteria A. Common mode 2kV, Differential Mode 1kV
Conducted Immunity	IEC61000-4-6, Level 2 Criteria A. 150kHz-80MHz, 3Vrms, 6Vrms at ISM Bands and Amateur radio bands
Power Frequency Magnetic Fields	IEC61000-4-8, Criteria A. 30A/m
Voltage Dips	IEC61000-4-11 Criteria A: 30% 10ms Criteria B: 60% 100ms, 100% 5000ms
	IEC60601-1-2 Criteria A: 100% 10ms at step 45° Criteria B: 30% 500ms, 100% 20ms, 100% 5000ms

## Mechanical Drawing

All dimensions in mm



## Features Descriptions

**n** Turn on delay time

Turn on delay is the delay time from AC turns on o output reaches regulation.

**n** Rise time

Rise time is defined as the time that output voltage or current rises from 10% of regulation number to 90% of regulation.

**n** Ripple & Noise

Ripple & Noise is measured at 20MHz bandwidth, and 12" output cable end, with a 10uF aluminum capacitor and a 0.1uF ceramic capacitor paralleled to the cable end.

**n** Average Efficiency

Average efficiency is defined as average efficiency of 25%, 50%, 75% and 100% load. The input voltage is 115VAC/60Hz and 230VAC/50Hz