

## 45W CONVECTION COOLED

AC-DC POWER SUPPLIES

The AKM45 series of desktop adaptors comply with medical, home-healthcare and IT approvals along with the latest energy efficiency level VI standards with high active mode efficiency and extremely low no load power consumption. Available with a standard jack plug connector these adaptors suit a wide variety of cost sensitive industrial and medical applications while maintaining industry leading performance.



### Features

- IP22 ingress protection
- IEC/EN60601-1-11 for home healthcare applications
- Energy efficiency level VI & EU2019/1782
- Medical (2 x MOPP) and ITE approvals
- 4th edition medical EMC
- Class I & class II versions
- Input voltage range 80 to 264VAC
- Output voltages from 9 to 48VDC
- 0°C to +60°C operating temperature
- 3 years warranty

### Applications



Healthcare



Industrial Electronics



Medical Diagnostic



Technology

### Dimensions

4.82" x 2.02" x 1.24" (122.4 x 51.4 x 31.5 mm)

### Models & Ratings

Model Number <sup>(3)(4)</sup>	Output Power	Output Voltage	Output Current	Total Regulation <sup>(1)</sup>	Efficiency <sup>(2)</sup>
AKM45US09	40.5W	9.0V	4.50 A	5%	89.8%
AKM45US12		12.0V	4.00 A		90.5%
AKM45US15		15.0V	3.20 A		90.5%
AKM45US18		18.0V	2.66 A		90.6%
AKM45US24		24.0V	2.00 A		90.2%
AKM45US48		48.0V	1.00 A		91.2%

#### Notes:

1. Total regulation includes initial set accuracy, line and load regulation.
2. Typical average value measured at 25%, 50%, 75% and 100% at 230 VAC.
3. For white case version add suffix '-W' e.g. AKM45US12-W. MOQ applies, contact sales for details.
4. Model number shown in the table is for Class I version. For Class II version add suffix C2, e.g. AKM45US24C2.

## Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	80		264	VAC	
Input Frequency	47		63	Hz	
Input Current			1.3	A	90VAC
Inrush Current			100	A	230VAC, cold start at 25°C
No Load Input Power			75	mW	
Input Protection	Internal fuse in both line and neutral				

## Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	9		48	V	See Models and Ratings table
Minimum Load	0			A	No minimum load required
Start Up Delay			4	s	
Start Up Rise Time		30	55	ms	
Hold Up Time	10			ms	Full load and 100VAC
Total Regulation			5	%	See Models and Ratings table
Transient Response			4	% deviation	Recovery within <1% within 500µs for a 60% step load change at 0.15A/µs
Ripple and Noise			200	mV pk-pk	Measured with 20MHz bandwidth and 10µF electrolytic in parallel with 0.1µF ceramic capacitor
Overload Protection	130		160	%	
Short Circuit Protection	Continuous, trip and restart (hiccup mode) with auto recovery				
Temperature Coefficient			0.05	%/°C	

## General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		89		%	Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 115VAC input
Energy Efficiency					Level VI
Isolation: Input to Output	4000			VAC	Input to output, 2 x MOPP
Input to Ground	1500				Class I version only
Output to Ground	1500				Class I version only
Leakage Current			100	µA	264VAC, 60Hz
Switching Frequency	24		70	kHz	Variable
Mean Time Between Failure	250			khrs	MIL-HDBK-217F at 25°C GB
Weight		0.75 (340)		lb (g)	

## Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	0		+60	°C	Derate from 100% load at 40 °C to 50% load at 60 °C. Agency approval to 40 °C max.
Storage Temperature	-25		+70	°C	
Ingress Protection	IP22				
Cooling	Natural convection				
Operating Humidity	5		90	%	RH, non-condensing
Operating Altitude			5000	m	
Shock	1m drop onto concrete on each of 6 axes, non operating				
Vibration	2g, 0.3 decades/min, 15 mins for each of 3 axes				

## EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level B	
Voltage Flicker	EN61000-3-3		

## EMC: Immunity

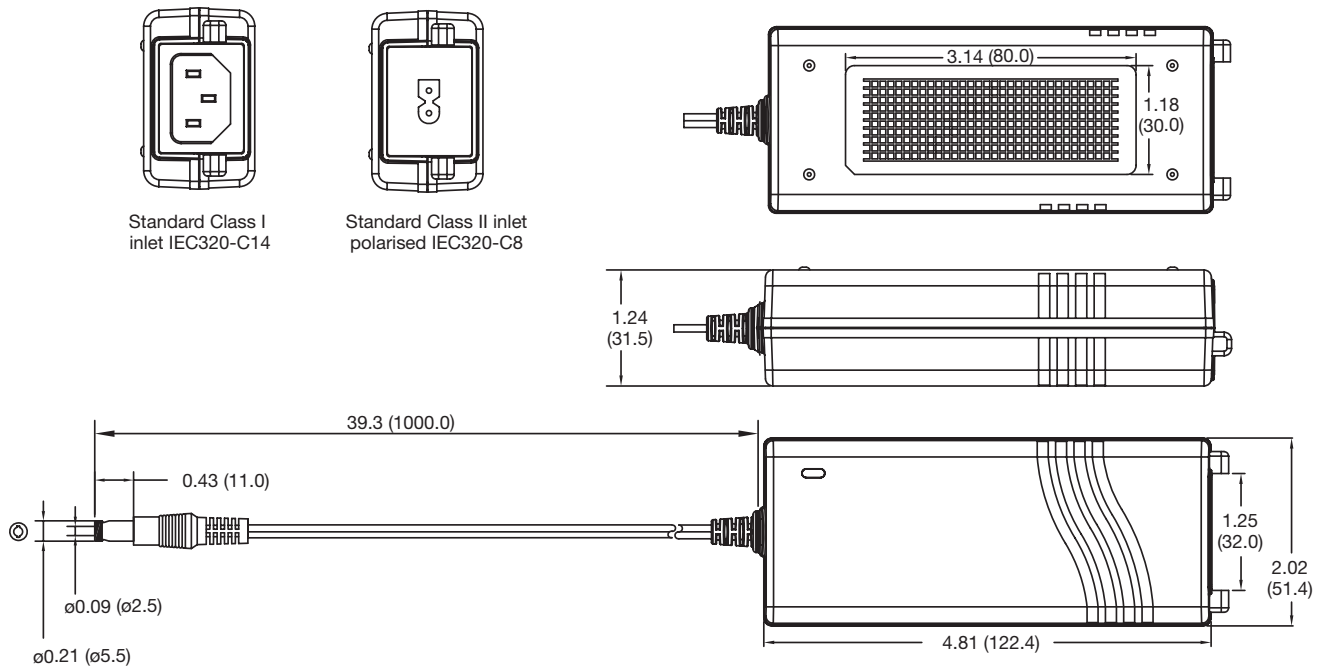
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Medical Device EMC	IEC60601-1-2	Ed.4.0 : 2014	as below	
Low Voltage PSU EMC	EN61204-3	High severity level	as below	
ESD Immunity	EN61000-4-2	±8kV contact, ±15kV air	A	
Radiated Immunity	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	Level 3	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted Immunity	EN61000-4-6	6V	A	
Magnetic Fields	EN61000-4-8	30A/m	A	
Dips and Interruptions	EN61000-4-11	Dip: 100% 10ms	A	
		Dip: 70% 500ms	B	
		Int: 100% 5000ms	B	
	EN60601-1-2	Dip: 30% 25 AC cycles	A	
		Int: 100% 0.5 AC cycle	A	At 8 angles
		Int: 100% 1 AC cycle	B	
		Int.: >95% 5000ms	B	

## Safety Approvals

Certification	Safety Standard	Notes & Conditions
UL	UL 62368-1 & CAN/CSA C22.2 No. 62368-1-14	Information Technology
	ANSI/AAMI ES 60601-1	Medical, 2 x MOPP
EN	EN62368-1	Information Technology
	EN60601-1 (Class I & II versions), EN60601-1-11 (Class II version)	Medical, 2 x MOPP
GB	IEC60950-1:2005 Ed 2 / IEC62368-1	Information Technology
	IEC60601-1 (Class I & II versions), IEC60601-1-11 (Class II version)	Medical, 2 x MOPP
CCC	China Compulsory Certification, GB4943, GB17625.1, GB4943.1, GB/T9254	Information Technology
CSA	CSA C22.2 No. 60601	Medical, 2 x MOPP
AU/NZ	AU/NZ 60950.1	Information Technology
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

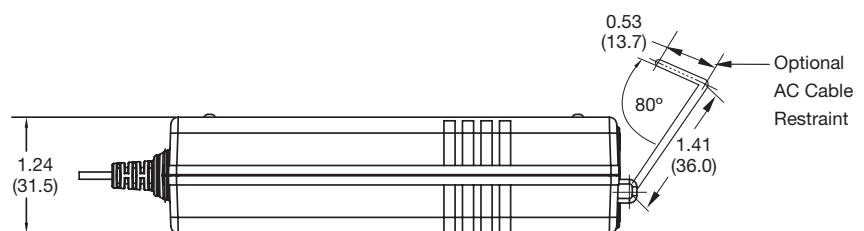
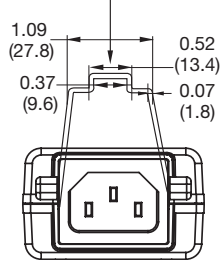
## Mechanical Details

### AKM45USXX



### AKM45USXX with Optional AC Cable Restraint

#### Optional AC Cable Restraint



#### Notes:

- For optional AC cable restraint, order additional part AFM45-65 AC Clip.
- For correct restraint, AC mains lead must be Interpower Corporation, part number 70006020300.
- AC cable restraint is not suitable for use on Class II version.
- Output plug:  $\phi 5.5 \times \phi 2.5 \times 11.0$ mm, centre positive.
- The standard IEC320-C7 cable fits the polarised IEC320-C8 (C8P) connector.