

60W CONVECTION COOLED

AC-DC power supplies

The AEK60 series desktop supplies are an Energy Efficiency Level VI and CoC Tier 2, they have a standby output power of less than 0.15W and an average efficiency of 88-89%. The AEK60 operates from 0°C to +60°C with derating above +40°C. In addition, they meet Level B limits for radiated and conducted EMC and have safety approvals per EN/IEC/UL 60950-1 standards, making them suitable for an array of industrial electronics & ITE applications.



Features

- ▶ Single outputs 12V & 48VDC
- ▶ Energy efficiency level VI
- ▶ European CoC Tier 2
- ▶ <0.15W standby power
- ▶ 0°C to +60°C operation
- ▶ Universal input
- ▶ 3 year warranty

Applications



Home Healthcare



Instrumentation



Technology

Dimensions

120.0 x 53.5 x 31.0mm (4.72" x 2.09" x 1.24")

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Models & ratings

Model number	Output voltage	Output current	Total regulation	Efficiency ⁽¹⁾	Ripple & Noise ⁽²⁾	Output Power
AEK60US12	12.0VDC	5.00A	±5%	89%	100mV	60W
AEK60US15 ⁽³⁾	15.0VDC	4.00A				
AEK60US18 ⁽³⁾	18.0VDC	3.33A				
AEK60US24 ⁽³⁾	24.0VDC	2.50A				
AEK60US48	48.0VDC	1.25A				

Notes:

1. Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 230VAC input.
2. Pk-Pk value measured with 20MHz bandwidth and 0.47µF ceramic capacitor.
3. No longer available.



Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	90		264	VAC	
Input frequency	47		63	Hz	
Input current		1.4/0.8		A	Measured at 100VAC/240VAC
Inrush current			110	A	230VAC cold start, +25°C
Earth leakage current			0.75	µA	264VAC, 60Hz
No load input power			150	W	
Input protection	T2.0A/250VAC internal fuse in line				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output Voltage	12		48	VDC	See models and ratings table
Initial Set Accuracy			±2	%	At 60% load
Minimum Load	No minimum load required				
Hold Up Time	10			ms	Full load and 115VAC
Line Regulation			±1	%	From minimum to maximum input voltage at full load
Regulation			±4	%	Load regulation measured from 20% to 100% load
Transient Response			5	%	Maximum deviation, recovering to less than 1% within 500µs for 25% step load
Ripple and Noise	See models and ratings table				
Overshoot		5		%	At turn on / turn off
Overload Protection	110		150	%	
Short Circuit Protection	Trip and restart (hiccup), auto resetting				
Temperature Coefficient		0.04		%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		89		%	See models and ratings table and curves.
Isolation	1500			VAC	
	3000			VAC	
	500			VDC	
Switching frequency		65		kHz	
Power density			0.35 (5.8)	cm ³ (W/in) ³	
Mean time between failure	100			khrs	MIL-HDBK-217F at +25°C GB
Weight		240.0 (0.53)		g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating Temperature	0		+60	°C	Derate from 100% load at 40°C to 67% load at 60°C
Cooling	Natural convection				
Operating Humidity	5		90	%RH	Non-condensing
Storage Temperature	-40		+85	°C	
Operating Altitude			2000		
Shock	IEC68-2-27, 30 g, 11ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500 Hz, 5 g 10 mins/sweep, 60 mins for each of 3 axes				

Emissions - EMC

Phenomenon	Standard	Test level	Notes & conditions
Emissions	EN55032	Level B	Conducted and radiated
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

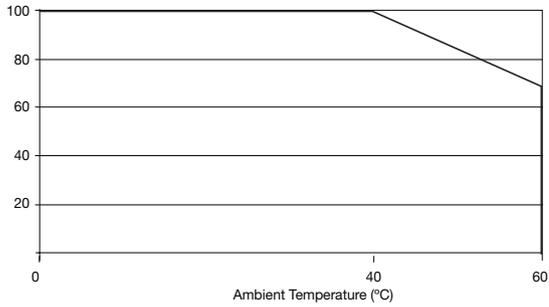
Emissions - immunity

Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	±8kV Air, ±6kV contact	A	
Radiated immunity	EN61000-4-3	3V/m	A	
EFT/burst	EN61000-4-4	2	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	3V	A	
Magnetic fields	EN61000-4-8	3A/m	A	
Dips and interruptions	EN61000-4-11	Dip: 30% 10ms	A	
		Dip: 60% 100ms	A/B	
		Int: 100% 5000ms	B	High Line/low line
		Int: 100% 10ms	A	

Safety approvals

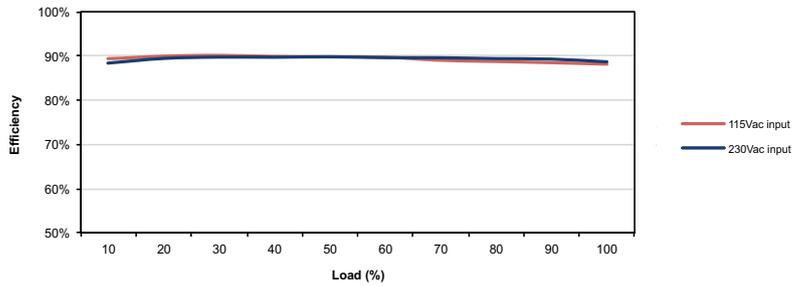
Safety agency	Standard	Notes & conditions
UL	UL62368-1	
EN	EN62368-1	
CB	IEC62368-1	
AU/NZ	AU/NZ 60950.1	
CE	Meets all applicable legislation	
UKCA	Meets all applicable legislation	

Derating curve

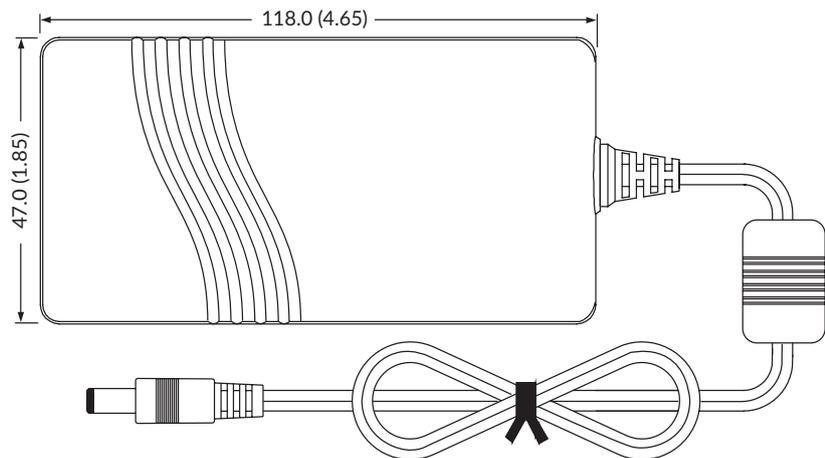
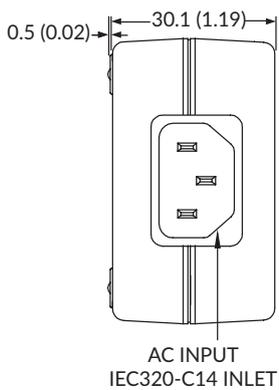


Efficiency curve

AEK60US12



Mechanical details



Notes:

- All dimensions shown in mm (inches).
- Weight: 240g (0.53lbs) approx.
- Tolerance is ± 0.5 (± 0.02) maximum, except output cable length which is ± 50 mm (± 2 ").
- Output connector is 5.5mm dia. outer barrel, inner dia. is 2.5mm with a center + and outer shell - polarity.
- Cable length: 12V: 1220mm (48") 16 AWG
Others: 1220mm (48") 18 AWG