

60W, AC/DC converter



FEATURES

- Wide input voltage range: 90~264VAC/122~370VDC
- Low standby power consumption: 0.5W
- Conversion efficiency up to 86%
- High isolation voltage up to 4K VAC
- Output short circuit, over-current, over-voltage protection
- IEC60950, UL60950, EN60950 approval
- Mounting: Chassis mounting

LH60 is a series of high efficiency 60W AC-DC power supplies which have advantages of high surge resistance, reliability, and low power consumption. The series products are widely used in industrial control, home automation, access control and a broad range of other electrical instruments and applications

Selection Guide

RS Stock No.	Part No.*	Output Power	Nominal Output Voltage and Current(Vo/Io)	Efficiency (230VAC, %/Typ.)	Max. Capacitive Load (μF)
1446276	LH60-20B12A5	60W	12V/5A	86	14000
1446277	LH60-20B24A5		24V/2.5A	86	4000

Input Specifications

Item	Operating Conditions			Min.	Typ.	Max.	Unit
Input Voltage Range	AC input			90	--	264	VAC
	DC input			122	--	370	VDC
Input Frequency				47	--	63	Hz
Input Current	115VAC			--	--	1.4	A
	230VAC			--	--	0.7	
Inrush Current	115VAC			--	30	--	
	230VAC			--	50	--	
Input Under-voltage Protection	Start-up Voltage	AC input		65	--	90	VAC
		DC input		92	--	122	VDC
Shutdown Voltage	AC input			55	--	75	VAC
	DC input			79	--	105	VDC
Built in input fuse				3.15A/250V, slow blow.			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load	--	±2	--	%
Line Regulation		--	±0.5	--	
Load Regulation	5%-100% load	--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	--	150	mV
Temperature Coefficient		--	±0.02	--	%/°C
Stand-by Power Consumption		--	--	0.5	W
Short Circuit Protection		Continuous, self-recovery			
Over-current Protection		≥110%Io self-recovery			



Over-voltage Protection	12V DC Output	≤16VDC		
Over-voltage Protection	24V DC Output	≤35VDC		
Min. Load		0	--	--
Trim		--	--	±10
Hold-up Time	115VAC input	--	15	--
	230VAC input	--	80	--

General Specifications

Item	Operating Conditions			Min.	Typ.	Max.	Unit				
Isolation Voltage	Input-output	Test time: 1min		4000	--	--	VAC				
	Input-			1500	--	--					
	Output-			500	--	--					
Operating Temperature				-40	--	+70	°C				
Storage Temperature				-40	--	+85					
Storage Humidity				--	--	95	%RH				
Switching Frequency				--	100	--	KHz				
Power Derating		-40°C to -30 °C		4.0	--	--	%/°C				
		+50°C to +70 °C (12V output)		2.5	--	--					
		+55°C to +70 °C (24V output)									
Safety Standard		IEC60950/EN60950/UL60950									
Safety Certification		EN60950/UL60950									
Safety Class		CLASS I									
MTBF		MIL-HDBK-217F@25°C ≥300,000 h									

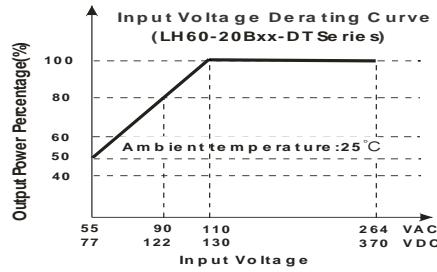
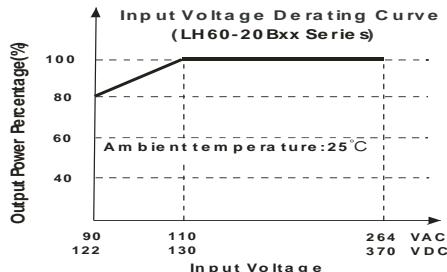
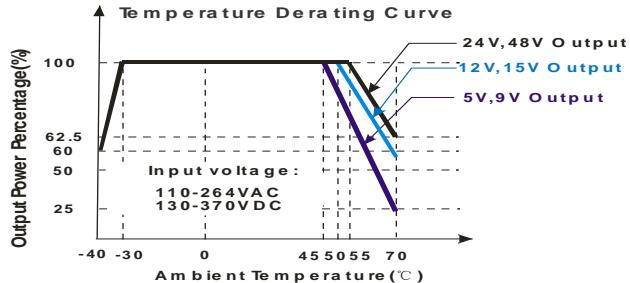
Physical Specifications

Casing Material	Black flame-retardant and heat-resistant plastic (UL94V-0)
Dimension	A5 chassis mounting
Weight	A5 chassis mounting
Cooling Method	Free air convection

EMC Specifications

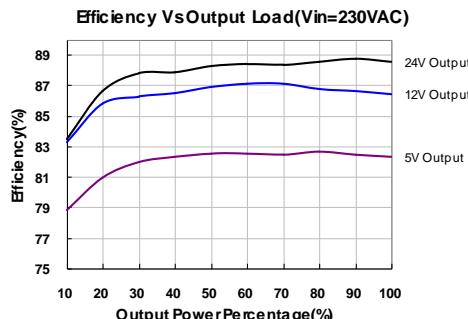
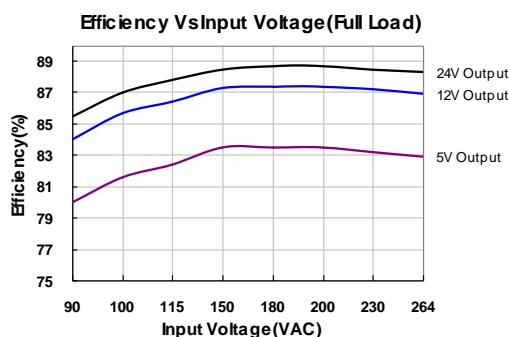
EMI	CE	CISPR22/EN55022 CLASS B	
	RE	CISPR22/EN55022 CLASS B	
EMS	ESD	IEC/EN61000-4-2 Contact ±6KV/Air ±8KV	Perf. Criteria B
	RS	IEC/EN61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4 ±4KV	perf. Criteria B
	Surge	IEC/EN61000-4-5 line to line ±2KV/line to ground ±4KV	perf. Criteria B
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	PFM	IEC/EN61000-4-8 10A/m	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%,70%	perf. Criteria B

Product Characteristic Curve

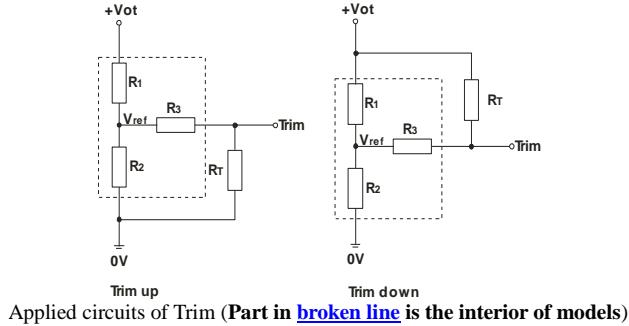


Note: ① Input voltage should be derated based on temperature derating when it is 55~110VAC/77~130VDC;

② This product is suitable for use in natural air cooling environments, if in a closed environment, please contact our company's FAE.



1. Application of Trim and calculation of Trim resistance



Calculation formula of Trim resistance:

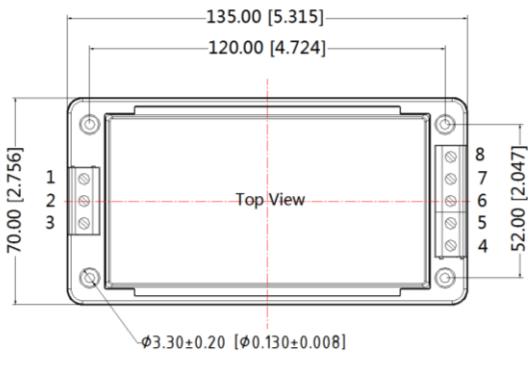
$$\begin{array}{ll} \text{up: } R_T = \frac{a R_2}{R_2 - a} - R_3 & a = \frac{V_{ref}}{V_{out} - V_{ref}} \cdot R_1 \\ \text{down: } R_T = \frac{a R_1}{R_1 - a} - R_3 & a = \frac{V_{out} - V_{ref}}{V_{ref}} \cdot R_2 \end{array}$$

R_T is Trim resistance a is a self-defined parameter, with no real meaning.

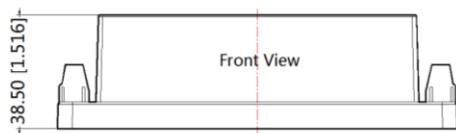
Vout	R1(KΩ)	R2(KΩ)	R3(KΩ)	Vref(V)	Vot(V)
12V	3.83	1	1	2.5	Output voltage after regulation, variation ≤ ±10%
24V	8.66	1	1	2.5	

A5 Chassis mounting Dimensions

THIRD ANGLE PROJECTION



Pin-Out	
Pin	Function
1	AC(N)
2	AC(L)
3	—
4	Trim
5	-Vo
6	+Vo
7	NC
8	NC



Note:
Unit:mm[inch]
Wire range:24~12 AWG
General tolerances:±1.00[±0.040]

Notes:

- Packing bag number: 58220031(A5 package)
- If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% with nominal input voltage and rated output load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- We can provide product customization service, please contact our technicians directly for specific information;
- Specifications are subject to change without prior notice.