



■ Features :

- 180-264VAC input only
- Fully encapsulated with IP67 level
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Pass LPS
- 100% full load burn-in test
- Suitable for LED lighting and moving sign applications
- High reliability / Low cost
- 2 years warranty

**SPECIFICATION**

LPS IP67  

MODEL		LPH-18-12	LPH-18-24	LPH-18-36
OUTPUT	DC VOLTAGE	12V	24V	36V
	RATED CURRENT	1.5A	0.75A	0.5A
	CURRENT RANGE	0 ~ 1.5A	0 ~ 0.75A	0 ~ 0.5A
	RATED POWER	18W	18W	18W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE TOLERANCE Note.3	±3.0%		
	LINE REGULATION	±1.0%		
	LOAD REGULATION	±2.0%		
	SETUP, RISE TIME	1500ms, 30ms / 230VAC		
HOLD UP TIME (Typ.)	50ms/230VAC at full load			
INPUT	VOLTAGE RANGE	180 ~ 264VAC		
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY(Typ.)	78%	82%	83%
	AC CURRENT	0.3A/230VAC		
	INRUSH CURRENT(max.)	Cold start 50A/230VAC		
	LEAKAGE CURRENT	0.25mA / 240VAC		
PROTECTION	OVER CURRENT	Above 105% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed		
	OVER VOLTAGE	13.8~ 16.2V	27.6~ 32.4V	41.4 ~ 48.6V
	OVER TEMPERATURE	Tj 170 t ypically (U1) Detect on main control IC Protection type : Hiccup mode, recovers automatically after temperature goes down		
ENVIRONMENT	WORKING TEMP.	-30 ~ 70°C (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes		
SAFETY & EMC (Note 4)	SAFETY STANDARDS	Design refer to UL1310 Class 2, TUV EN60950-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91, IP67 approved		
	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC		
	ISOLATION RESISTANCE	I/P-O/P: >100M Ohms / 500VDC / 25°C / 70% RH		
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B		
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3		
OTHERS	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, Light industry level, criteria A		
	MTBF	1200.6K hrs min. MIL-HDBK-217F (25)		
	PACKING	140*30*22(L*W*H) 0.175Kg; 70pcs/13.3Kgs/0.66CUFT		
NOTE	<ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF &amp; 47uF parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.</li> </ol>			

**■ Mechanical Specification**

Unit:mm

The drawing shows a side view of the power supply with the following dimensions: total length 300±20mm, central section length 140mm, and end section length 300±20mm. Terminal labels include AC/N (Blue), AC/L (Brown), AC IN, DC OUT, -V (Black), and +V (Red). Wire gauges are specified as 18AWG 1015. A height dimension of 22mm is shown at the bottom.

**■ Block Diagram**

The block diagram illustrates the power flow from the I/P (Input) through an EMI FILTER, RECTIFIERS, and POWER SWITCHING (containing a transformer) to a second set of RECTIFIERS & FILTER. The output is +V and -V. A PWM CONTROL block is connected to the power switching stage. A DETECTION CIRCUIT is connected to the output terminals. The switching frequency is noted as fosc : 60KHz.

**■ Derating Curve**

The derating curve shows that the load capacity is constant at 100% for ambient temperatures up to 50°C. Beyond 50°C, the load capacity decreases linearly to 60% at 70°C. The x-axis is labeled '(HORIZONTAL)'.

Ambient Temperature (°C)	Load (%)
-30	100
0	100
10	100
20	100
30	100
40	100
50	100
60	70
70	60

**■ Static Characteristics**

The static characteristics graph shows the load capacity as a function of input voltage at Ta=25°C. The load capacity is 80% at 180VAC and increases to 100% at 190VAC, remaining constant thereafter up to 264VAC.

Input Voltage (VAC) 60Hz	Load (%)
180	80
190	100
200	100
210	100
220	100
230	100
240	100
250	100
264	100