

# LD20 SERIES

## 20W AC-DC CONVERTER

LD20 series --- is a compact 20W PCB mount power supply. Featuring international approvals and standby power consumption of 0.5W (max) this high efficiency series can be widely used in industrial, telecom, medical and instrumentation applications.



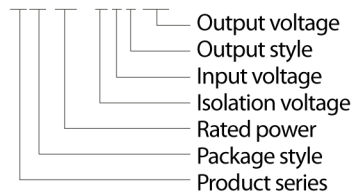
RoHS

### Product features

### Model selection

Universal Input : 85 ~ 264VAC, 50/60Hz  
 DC input 120~370Vdc  
 EMC meets EN55022 level B  
 Low Ripple and Noise  
 EN55024/IEC/EN 61000-4-2/3/4/5 level 4  
 High density solution 53.3 x 28.5 x 23.5mm  
 High efficiency  
 Standby Power consumption 0.5W (max)  
 Output short circuit protection, over-current protection and over-voltage protection  
 Meet UL60950 and EN60950 certification standards  
 Three years warranty

### LD20-10B24



PRODUCT									
RS STOCK NO.	MODEL NO.	PACKAGE	POWER	APPROVAL	OUTPUT (Vo1 / Io1)	RIPPLE & NOISE (TYP.)	EFF. (TYP.)	STANDBY POWER (MAX.)	
751-1406	LD20-10B05	53.5 x 28.5 x 23.5mm	18W	UL / CE	5V/3600mA	50mV	78%	0.5W	
751-1409	LD20-10B12		20W		12V/1660mA		82%	0.5W	
751-1403	LD20-10B15		20W		15V/1330mA		83%	0.5W	
751-1412	LD20-10B24		20W		24V/833mA		83%	0.5W	

Specifications measured at rated input voltage & rated output load, TA=25 °C, humidity <75%

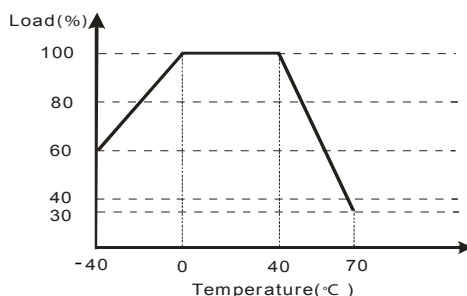
INPUT SPECIFICATIONS	
Input voltage range	85~264Vac, 120~370Vdc
Input frequency	47~440Hz
Input current	110Vac
	370mA, typ
Inrush current	230Vac
	40A, typ
Leakage current	0.75mA (max) @ Vin=220Vac
External input fuse (recommended)	3.15A/250V time lag



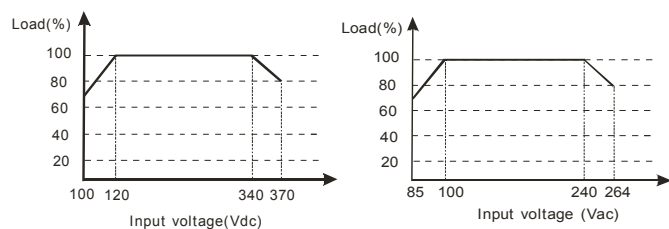
OUTPUT SPECIFICATIONS		
Voltage set accuracy		± 2% (typ)
Input variation		±0.5% (typ)
Load variation (10% to 100%)		± 1% (typ)
Ripple & noise (p-p)	(20 MHz bandwidth)	120mV (max)
Short circuit protection		Continuous and auto resume
Over current protection		≥110% I <sub>o</sub> , and auto resume
Over voltage protection		Zener diode clamp

CONTROL SPECIFICATIONS			
Temperature ranges	Operating		-40°C to + 70°C
	Power derating	(above 40°C)	2.5% / °C
		(below 0°C)	1% / °C
	Storage		-40°C to + 105°C
Case temperature		+95°C max	
Hold-up time	(vin=230Vac)	50ms (typ)	
	(Vin=115Vac)	10ms (typ)	
Humidity		95% (max)	
Temperature coefficient		±0.02% / °C	
Switching frequency		100kHz (typ)	
Isolation voltage (input-output)		3000Vac / 1 min	
EMI / RFI conducted		EN55022, CLASS B	
EMC compliance	Electrostatic discharge	EN55024/IEC/EN 61000-4-2 level 4	8kV/15kV
	RF field susceptibility	EN55024/IEC/EN 61000-4-3 level 4	10V/m
	Electrical fast transients/bursts on mainsline	EN55024/IEC/EN 61000-4-4 level 4	4kV
	Surge	EN55024/IEC/EN 61000-4-5 level 4	2kV/4kV
Safety standards		IEC60950/EN60950/UL60950	
Safety approvals		EN60950/UL60950	
Safety class		CLASS II	
Case material		UL94V-0	
Install		PCB	
Cooling		Free air convection	
MTBF		>300,000h @25°C	
Package		53.5 x 28.5 x 23.5mm	

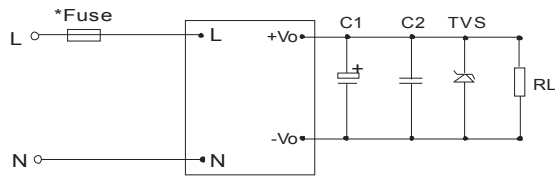
Temperature vs load



Input voltage vs load



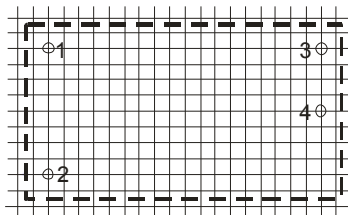
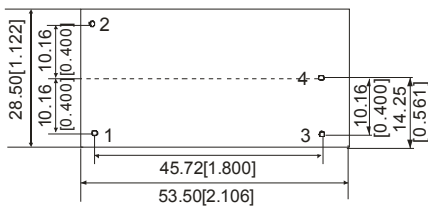
Typical applications



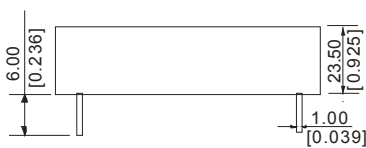
EXTERNAL CAPACITORS TYPICAL VALUE (UNIT: $\mu\text{F}$ )			
MODEL	C1	C2	TVS
LD20-10B05	220 $\mu\text{F}$ /10V	0.1 $\mu\text{F}$ /50V	P6KE6.8A
LD20-10B12	120 $\mu\text{F}$ /25V	0.1 $\mu\text{F}$ /50V	P6KE20A
LD20-10B15	120 $\mu\text{F}$ /25V	0.1 $\mu\text{F}$ /50V	P6KE20A
LD20-10B24	68 $\mu\text{F}$ /35V	0.1 $\mu\text{F}$ /50V	P6KE30A

Note:  
 1. Output filtering capacitor C1 is an electrolytic capacitor, It is recommended to use high frequency and low impedance electrolytic capacitors. For capacitance and current of capacitor please refer to manufacture's datasheet. Voltage derating of capacitor should be 80% or above. C2 is a ceramic capacitor, it is used to filter high frequency noise. TVS is a recommended component to protect circuitry (if converter fails).  
 2. It is recommended to fit an external fuse 3.15A/250V time lag.

Outline dimensions & pin connections



RECOMMENDED FOOTPRINT  
 Top view, grid: 2.54mm[0.100inch],  
 diameter: 1.60mm[0.063inch]



FOOTPRINT DETAILS	
PIN	FUNCTION
1	N
2	L
3	+Vo
4	-Vo

Note:  
 First Angle Projection  
 Unit: mm[inch]  
 Pin diameter: 1.00  $\pm$  0.10mm  
 General tolerances:  $\pm$ 0.50mm  
 Weight: 50 $\pm$ 3g

