

Datasheet

RS 20W, 1 Output, Embedded Switch Mode Power Supply (SMPS), 24V, 833mA

RS Stock 751-1412



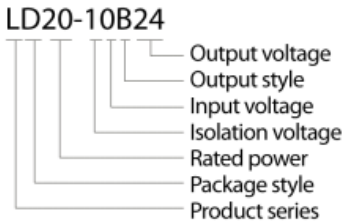
Description

- A compact 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 compliant

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



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	230Vac
	370mA, typ	240mA, typ
Inrush current	110Vac	230Vac
	20A, typ	40A, typ
Leakage current	0.75mA (max) @ Vin=220Vac	
External input fuse (recomended)	3.15A/250V time lag	

Typical applications

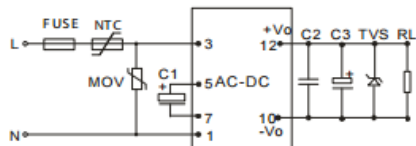


Figure 1 LS01-15BXXS

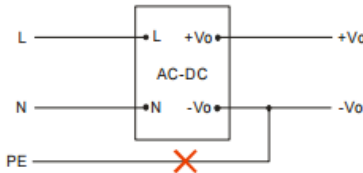


Figure 2 Note: This application is not supported for this series.

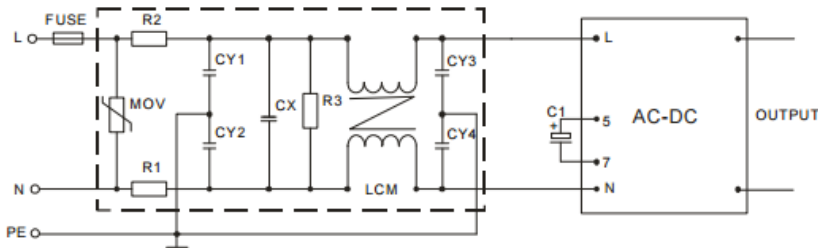


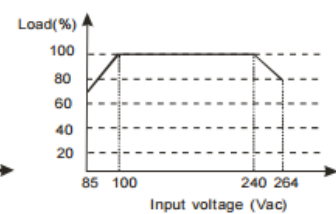
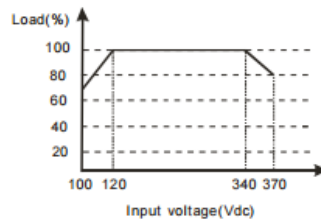
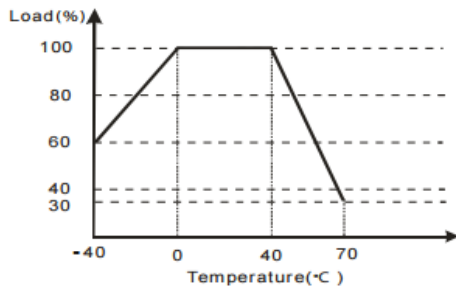
Figure 3 Improved EMC circuit protection (external circuit output as figure 1)

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 _o and auto resume
Over voltage protection		Zener diode clamp

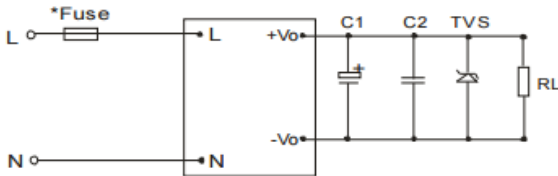
CONTROL SPECIFICATIONS			
Temperature ranges	Operating		-40°C to + 70°C
	Power derating	(above 40°C)	2.5% / °C
		(below 0°C)	1% / °C
	Storage		-40°C to + 105°C
	Case temperature		+95°C max
Hold-up time	(vin=230Vac)		50ms (typ)
	(Vin=115Vac)		10ms (typ)
Humidity			95% (max)
Temperature coefficient			±0.02% / °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

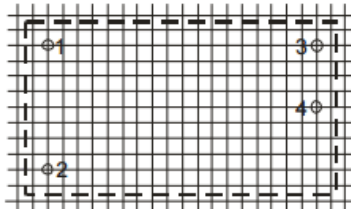
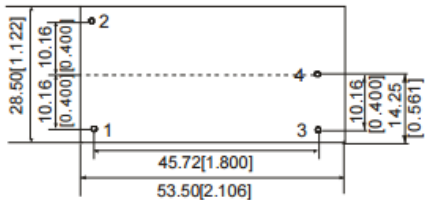


EXTERNAL CAPACITORS TYPICAL VALUE (UNIT: μ F)			
MODEL	C1	C2	TVS
LD20-10B05	220 μ F/10V	0.1 μ F/50V	P6KE6.8A
LD20-10B12	120 μ F/25V	0.1 μ F/50V	P6KE20A
LD20-10B15	120 μ F/25V	0.1 μ F/50V	P6KE20A
LD20-10B24	68 μ F/35V	0.1 μ F/50V	P6KE30A

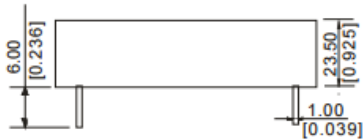
Note:

- 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).
- 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