



RoHS



## FEATURES

- Wide input voltage range 85 - 264VAC or 120 - 370VDC
- Accepts AC or DC input (dual-use of same terminal)
- Built-in active PFC function
- Operating ambient temperature range: -40°C to +70°C
- High reliability, efficiency up to 94%
- Wide range of adjustable output voltage
- Output short circuit, 5s constant-current, over-voltage, over-temperature protection
- Support 3+1 parallel redundancy, current sharing
- Operating up to 5000m altitude
- Fan speed automatic adjustable
- Safety according to IEC/EN/UL62368-1, EN/ES/IEC60601-1, IEC60335-1, GB4943.1

LMF1500-20Bxx series is one of Mornsun's enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, low no load power consumption, high efficiency, high reliability and double or reinforced insulation. These converters offer excellent EMC performance and meet IEC/EN/UL62368, EN/ES/IEC60601, IEC60335, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home. etc.

## Selection Guide

Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)		Main Output Voltage Adjustable Range ADJ (V) Vo1	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)	
		Vo1/Io1	Vo2/Io2			Vo1	Vo2
LMF1500-20B12	1510	12V/125A	5V/2A	12-14.4	92	40000	1000
LMF1500-20B15	1510	15V/100A		15-18	92	20000	
LMF1500-20B24	1510	24V/62.5A		24-28.8	94	10000	
LMF1500-20B27	1522	27V/56A		27-32.4	94	8000	
LMF1500-20B36	1522	36V/42A		36-43.2	94	6000	
LMF1500-20B48	1546	48V/32A		48-56	94	4000	
LMF1500-20B54	1522	54V/28A		54-58	94	3000	

## Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	Rated input	100	--	240	VAC
	AC input	85	--	264	
	DC input	120	--	370	VDC
Input Voltage Frequency		47	--	63	Hz
Input Current	115VAC	--	--	15.5	A
	230VAC	--	--	8	
Inrush Current	115VAC	Cold start	16	20	
	230VAC		32	40	
Power Factor	115VAC	Room-temperature, full load	PF≥0.99		
	230VAC		PF≥0.95		
Leakage Current	240VAC	Earth leakage current	<0.5mA		
		Touch current	<0.5mA		
Hot Plug		Unavailable			

## Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load	Vo1	±1.0	--	%
		Vo2	±2.0	--	

Line Regulation	Rated load	Vo1	--	±0.5	--	
		Vo2	--	±1.0	--	
Load Regulation	0%-100% load	Vo1	--	±0.5	--	
		Vo2	--	±3.0	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	Vo1:12V/15V/24V/27V	--	--	150	mV
		Vo1: 36V/48V	--	--	200	
		Vo1: 54V	--	--	250	
		Vo2: 5V	--	--	100	
Hold-up Time	Full input voltage		12	--	--	ms
Short Circuit Protection*	After the short-circuit disappears, the recover time < 5s	Hiccup, self-recover				
Constant Current Protection*	230VAC	Constant current limit, output voltage turn off after 5s, self-recover				
Over Voltage Protection	12V	≤16.5V	Output voltage turn off, re-power & PS_ON on for recover			
	15V	≤25.0V				
	24V	≤33.0V				
	27V	≤35.0V				
	36V	≤48.0V				
	48V	≤60.0V				
	54V	≤63.0V				
Over-temperature Protection	Over-temperature protection activation	--	--	70	°C	
	Over-temperature protection deactivation	50	--	--		
Minimum Load		0	--	--	%	
Dynamic Minimum Load		10	--	--		
Fan		The fan speed is linearly adjusted and determined by the output power and output voltage together				
<p>Note: 1. *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to enclosed switching power supply application notes for specific information; 2.*Over current protection is realized in constant current mode, see section 2.6 of the application manual below; 3.*For auxiliary short-circuit mode, refer to Section 2.7 of the Application Manual below.</p>						

General Specifications.

Item	Operating Conditions		Min.	Typ.	Max.	Unit	
Isolation Test	Input - output	Test for 1min, leakage current <10mA	4000	--	--	VAC	
	Input - ⊕		2000	--	--		
	Output - ⊕		1250	--	--		
Insulation Resistance	Input - output	Environment temperature: 25±5°C Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC	100	--	--	MΩ	
	Input - ⊕			--	--		
	Output - ⊕			--	--		
Operating Temperature			-40	--	+70	°C	
Storage Temperature			-40	--	+85		
Storage Humidity	Non-condensing		10	--	95	%RH	
Operating Humidity			20	--	90		
Switching Frequency	PFC @ rated output		--	65	--	kHz	
	LLC @ rated output		--	85	--		
Power Derating	Operating temperature derating	12V/15V	-40°C to -30°C	5	--	--	% / °C
			-30°C to +45°C	0	--	--	
			+45°C to +70°C	1.6	--	--	
		24V/27V36/ 48V/54V	-40°C to -30°C	5	--	--	
			-30°C to +50°C	0	--	--	
			+50°C to +70°C	2	--	--	
	Input voltage derating	85VAC - 100VAC	2	--	--	%/VAC	

Safety Standard		Safety according to IEC/EN/UL62368-1, EN/ES/IEC60601-1, IEC60335-1, GB4943.1
Safety Class		CLASS I
Isolation Level	Input - output	2 x MOPP
	Input - ⊕	1 x MOPP
	Output - ⊕	1 x MOPP
MTBF	MIL-HDBK-217F@25°C	>250,000 h

### Mechanical Specifications

Case Material	SUS 304
Dimensions	250.0mm x 127.0mm x 40.5mm
Weight	1800g (Typ.)
Cooling Method	Forced cooling (25CFM)

### Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV/Air ±15KV	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 PE ±4KV	perf. Criteria B
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

### Functional Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Remote Control Switch	All input voltage range, all load range	Power on	PS_ON (CN7, Pin6) and GND (CN7, Pin7/14) are shorted			
		Power off	PS_ON (CN7 Pin6) and GND (CN7 Pin7/14) are open			
DC_OK Signal	All input voltage range, all load range	Power on	2.5	--	5	V
		Power off	--	--	0.5	
Oring			Support direct parallel use, achieve 3+1 parallel			
Current Sharing Accuracy	Io >50%Io1		--	±5	--	%
LED Signal*	Main output status indication	Normal output	Green on			
		Abnormal output, protected	Red on			
		Power off (AC without input)	Light off			
Remote Sense	Total compensate voltage, Vs+/Vs- (CN7 Pin1/8) shorted to Vo+/Vo- respectively		--	200	--	mV
SDA, SCL for I <sup>2</sup> C			Internal 2.4kΩ pull-up resistor to internal 3.3V			

Note: \*If the product is used in medical equipment, the terminal system should shield the LED signal light to meet the medical certification requirements that operators should not see the indicator light after the product is installed.

**Per visualizzare il catalogo completo siete invitati ad [effettuare il login sul sito](#) oppure ad [effettuare la registrazione gratuita](#).**