



■ Features

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- High efficiency up to 94%
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Medical safety approved (2xMOPP)
- Suitable for BF application with appropriate system consideration
- Built-in cooling fan ON-OFF control
- Current sharing up to 4000W (3+1)
- Built-in DC OK signal
- Built-in remote ON-OFF control
- Standby 5V@0.3A
- Built-in remote sense function
- No load power consumption<0.75W (Note.6)
- 5 years warranty

■ Certificates

- Safety: ANSI/AAMI ES60601-1
IEC60601-1
- EMC: EN55032

■ Applications

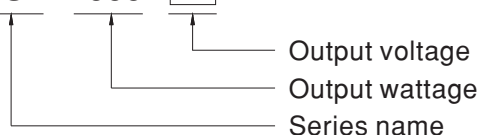
- MRI scanner
- CT and PET scanner
- Medical bed
- Surgery table
- Medical measurement device

■ Description

MSP-1000 is a single output enclosed type AC/DC power supply delivering 1000 W output power for a wide range of medical applications. The entire series operates for 90~264 VAC input voltage and supplies different output voltages between 12 V and 48 V that can satisfy the demands for all kinds of medical equipments. Meanwhile, the circuitry design meets the international medical standards, 2x MOPP, suitable for medical electrical devices. MSP-1000 is equipped with various built-in functions such as auxiliary power, remote sense and remote on-off control, offering vast design flexibility for the purpose of using control solutions.

■ Model Encoding / Order Information

MSP - 1000 - 12



SPECIFICATION

MODEL		MSP-1000-12	MSP-1000-15	MSP-1000-24	MSP-1000-48	
OUTPUT	DC VOLTAGE	12V	15V	24V	48V	
	RATED CURRENT	80A	64A	42A	21A	
	CURRENT RANGE	0 ~ 80A	0 ~ 64A	0 ~ 42A	0 ~ 21A	
	RATED POWER	960W (max. 1000W for 3 sec.)	960W (max. 1000W for 3 sec.)	1008W	1008W	
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	200mVp-p	250mVp-p	
	VOLTAGE ADJ. RANGE	11 ~ 14V	14 ~ 17V	22 ~ 28V	46 ~ 56V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.5%	±1.0%	±1.0%	
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	
	LOAD REGULATION	±2.0%	±1.5%	±0.5%	±0.5%	
	SETUP, RISE TIME	1000ms, 50ms/230VAC 2000ms, 50ms/115VAC at full load				
HOLD UP TIME (Typ.)	16ms/230VAC 16ms/115VAC at full load					
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC(300VAC for 5 sec.)		127 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz				
	POWER FACTOR (Typ.)	PF>0.95/230VAC		PF>0.98/115VAC at full load		
	EFFICIENCY (Typ.)	91.5%	92%	93%	94%	
	AC CURRENT (Typ.)	8.5A/115VAC 5A/230VAC				
	INRUSH CURRENT (Typ.)	20A/115VAC 40A/230VAC				
	LEAKAGE CURRENT	Earth leakage current < 360µA/264VAC , Touch leakage current < 100µA/264VAC				
PROTECTION	OVERLOAD	105 ~ 135% rated output power Protection type : Constant current limiting, recovers automatically after fault condition is removed				
	OVER VOLTAGE	14.5 ~ 16.5V	18.2 ~ 20.6V	29 ~ 33V	58 ~ 65V	
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down				
FUNCTION	CURRENT SHARING	Up to 4000W or (3+1) units. Please refer to the Function Manual.				
	REMOTE ON-OFF CONTROL	Power ON : short; Power OFF : open. Please refer to the Function Manual.				
	REMOTE SENSE	Compensate voltage drop on the load wiring up to 0.5V. Please refer to the Function Manual.				
	DC-OK SIGNAL	The TTL signal out, PSU turn on = 3.3 ~ 5.6V ; PSU turn off = 0 ~ 1V. Please refer to the Function Manual.				
	5V STANDBY	5VSB : 5V@0.3A ; tolerance ±5%, ripple : 50mVp-p(max.)				
	FAN CONTROL	Fan on/off by NTC(RT50) or 30% load min.				
ENVIRONMENT	WORKING TEMP.	-40 ~ +70°C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)				
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 8)	SAFETY STANDARDS	ANSI/AAMI ES60601-1, IEC60601-1 ; CAN/CSA-C22.2 No.60601-1:14-Edition 3 approved				
	ISOLATION LEVEL	Primary-Secondary: 2×MOPP, Primary-Earth: 1×MOPP, Secondary-Earth: 1×MOPP				
	WITHSTAND VOLTAGE	I/P-O/P:4.5KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH				
	EMC EMISSION	Parameter	Standard		Test Level / Note	
		Conducted	EN55032 (CISPR32) / EN55011 (CISPR11)		Class B	
		Radiated	EN55032 (CISPR32) / EN55011 (CISPR11)		Class B	
		Harmonic Current	EN61000-3-2		Class A	
	Voltage Flicker	EN61000-3-3		-----		
	EMC IMMUNITY	Parameter	Standard		Test Level / Note	
		ESD	EN61000-4-2		Level 4, 15KV air ; Level 4, 8KV contact	
		Radiated	EN61000-4-3		Level 3	
		EFT / Burst	EN61000-4-4		Level 3	
		Surge	EN61000-4-5		Level 4, 2KV/Line-Line 4KV/Line-Earth	
Conducted		EN61000-4-6		Level 3		
Magnetic Field		EN61000-4-8		Level 4		
Voltage Dips and Interruptions		EN61000-4-11		100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods		
OTHERS	MTBF	286.3K hrs min. Telcordia SR-332 (Bellcore) ; 105.7K hrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	218*105*63.5mm (L*W*H)				
	PACKING	1.53Kg;8pcs/13.3Kg/1.34CUFT				

- NOTE**
- All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
 - Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.
 - Tolerance : includes set up tolerance, line regulation and load regulation.
 - Derating may be needed under low input voltages. Please check the derating curve for more details.
 - Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
 - No load power consumption<0.75W when RC+ & RC- (CN100 pin3,4) open.
 - When the input voltage is less than 40VAC, the SPS may exhibit degradation of performance. The final product manufacturers must re-confirm this deviation that does not affect basic safety or essential performance.
 - The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*700mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on <http://www.meanwell.com>)
 - The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).