



■ Features

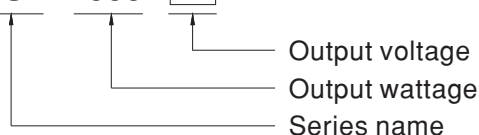
- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- High efficiency up to 94%
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Medical safety approved (2xMOPP)
- Suitable for BF application with appropriate 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

■ 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



■ Certificates

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

■ Applications

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

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	
		Protection type : Shut down o/p voltage, re-power on to recover				
	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℃ (Refer to "Derating Curve")			
WORKING HUMIDITY		20 ~ 90% RH non-condensing				
STORAGE TEMP., HUMIDITY		-40 ~ +85℃, 10 ~ 95% RH non-condensing				
TEMP. COEFFICIENT		± 0.03%/℃ (0 ~ 50℃)				
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℃ / 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	EN60601-1-2				
		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℃)				
	DIMENSION	218*105*63.5mm (L*W*H)				
	PACKING	1.53Kg;8pcs/13.3Kg/1.34CUFT				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Derating may be needed under low input voltages. Please check the derating curve for more details. 5. 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. 6. No load power consumption<0.75W when RC+ & RC- (CN100 pin3,4) open. 7. 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. 8. 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) 9. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).					