

Open Frame ("O" Suffix)



Size: 5.03 x 3 x 1.38in (127.8 x 76.2 x 35mm)

OPTIONS

- Case Type -Open Frame -U-Chassis -Enclosed Case with Top Fan
- Paralleling

APPLICATIONS

- ITE
- Medical

U-Chassis ("U" Suffix)

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Size: 5.5in x 3.25in x 1.6in (139.7mm x 82.55mm x 40.6mm)

Enclosed Case with Top Fan ("F" Suffix)



Size: 5.5in x 3.25in x 2.42in (139.7mm x 82.55mm x 61.4mm)

Open Frame & U-Chassis Feature Built-In

• UL/IEC/EN 60601 3.1 Edition (2xMOPP) &

UL/IEC/EN 60950 AM2, UL/IEC/EN 62368

• Over Power, Over Voltage, Over Temperature,

12V/0.3A Auxiliary Output

and Short Circuit Protection

Safety Approvals

- **FEATURES**
- Input Voltage Range of 90~264VAC (127~370VDC)
- Open Frame, U-Chassis, or Enclosed with Top Fan Case
- Option Remote ON/OFF Function
- PFC Function
- High Efficiency
- Current Share Function Available (Except for 15V Model)

DESCRIPTION

The PSMQF500 series of medical and ITE AC/DC switching power supplies offers 500 watts of output power in a compact open frame, u-chassis, or enclosed with top fan package. This series consists of single output models with a wide input voltage range of 90~264VAC (127~370VDC) and high efficiency. Features of this series include remote ON/OFF, PFC function, as well as over power, over voltage, over temperature, and short circuit protection. This series also has UL/IEC/EN 60601 3.1 Edition (2xMOPP) & UL/IEC/EN 60950 AM2, and UL/IEC/EN 62368 safety approvals. Parallel operation is available for this series, please contact factory for details.

Open Frame Models											
Model Number	Input Voltage Range	Output	Output Current	Output C Air Co	urrent (Free nvection)	Typ. Ripple	Maximum Capacitive	Efficiency	Out	put Power	
		vollage	30CFM Fan	115VAC	230VAC	& NOISE	Load	-	30CFM Fan	115VAC	230VAC
PSMQF500-12SO		12VDC	41.5A	19.16A	20A	160mV	5,000µF	90.5%		230W	240W
PSMQF500-15SO	90~264VAC	15VDC	33.3A	14A	14.66A	160mV	3,750µF	90.5%	500W	210W	220W
PSMQF500-24SO	(127~370VDC) 2	24VDC	20.8A	9.58A	10A	240mV	2,500µF	92%	50000	230W	240W
PSMQF500-48SO		48VDC	10.41A	4.8A	5A	480mV	1,250µF	93%		230W	240W

MODEL SELECTION TABLE											
U-Chassis Models											
Model Number	del Number		Output Current	Output C Air Co	urrent (Free nvection)	Typ. Ripple	Maximum Capacitive	Efficiency	Out	put Power	
	Range	voltage	30CFM Fan	115VAC	230VAC	& Noise	Load		30CFM Fan	115VAC	230VAC
PSMQF500-12SU		12VDC	41.5A	15.83A	16.6A	160mV	5,000µF	90.5%		190W	200W
PSMQF500-15SU	90~264VAC	15VDC	33.3A	11.33	12A	160mV	3,750µF	90.5%	FOOM	170W	180W
PSMQF500-24SU	(127~370VDC)	24VDC	20.8A	7.91A	8.33A	240mV	2,500µF	92%	50000	190W	200W
PSMQF500-48SU		48VDC	10.41A	3.96A	4.17A	480mV	1,250µF	93%		190W	200W

MODEL SELECTION TABLE							
	Enclosed with Top Fan Models						
Model Number	Input Voltage Range	Output Voltage	Output Current	Typ. Ripple & Noise	Maximum Capacitive Load	Efficiency	Output Power
PSMQF500-12SF		12VDC	41.5A	160mV	5,000µF	89%	
PSMQF500-15SF	90~264VAC	15VDC	33.3A	160mV	3,750µF	89%	50014/
PSMQF500-24SF	(127~370VDC)	24VDC	20.8A	240mV	2,500µF	91%	50000
PSMQF500-48SF		48VDC	10.41A	480mV	1,250µF	92%	



SPECIFICATIONS

All specification	ns are based on Nominal Input Volta We reserve the right to change	age, Full specific	Load, and 25°C afte ations based on tech	er warm-up time nnological adva	unless otherwinces.	se noted.			
SPECIFICATION	TEST COND	DITIONS		Min	Тур	Max	Unit		
INPUT SPECIFICATIONS									
	See Derating Curve for More	AC		90		264	VAC		
Input voltage Range	Details		127		370	VDC			
Input Frequency				47		63	Hz		
		@	115VAC			6.3			
Input Current	Full Load	a	230VAC			3.15	- A		
		@	0115VAC			40	1.		
Inrush Current	<2mS, Cold Start	0	230VAC			80	- A		
Leakage Current	264VAC. Touch Current					0.1	mA		
Power Factor	@230VAC. Full Load			0.94					
OUTPUT SPECIFICATIONS	G_000000000000000000000000000000000000			0.01		1			
Output Voltage					See T	able			
Voltage Accuracy					+2		%		
Line Regulation	115-264VAC				±0.5		%		
Load Regulation	10-100%				+1		%		
							% Output		
Voltage Adj. Range					±4		Voltage		
Output Power					See T	able	g-		
Output Current					See T	able			
Minimum Load				3			%		
Maximum Capacitive Load					See T	able	70		
Ripple & Noise ⁽¹⁾					See T	able			
Hold Up Time ⁽²⁾	@115VAC			8			ms		
	0~50°C			0	+0.03		1110		
Temperature Coefficient	-30~0°C				+0.06		%/⁰C		
PROTECTION	-00 0 0				10.00				
	Protection Level 1 (Nominal)				Continuous A	uto Recovery			
Short Circuit Protection	Protection Level 2 (Instantaneous	s Hiah Ci	urrent)		Lat	ch			
Over Power Protection		o riigii O	unonty		Automatic	Recovery			
Over Voltage Protection					Automatic	Recovery			
Over Temperature Protection				Automatic Recovery					
ENVIRONMENTAL SPECIFICATI	ONS				ratomatio	riceevery			
Operating Temperature	With Derating			-30		+70	°C.		
Storage Temperature	That Borading			-35		+85	<u></u>		
Altitude	During Operation				5000		m		
Humidity	Bailing operation				95		%RH		
Atmospheric Pressure				56		106	kPa		
	10~500Hz 2G 10min /1cvcle 60r	min eac	h along X Y Z				ni u		
Vibration	axes				IEC600	68-2-6			
Shock					IEC6006	68-2-27			
MTBF	@25°C. MIL-HDBK-217F			160.000			Hours		
GENERAL SPECIFICATIONS									
Efficiency	@230VAC				See T	able			
,	Input-Output				4000VAC or	r 5656VDC			
Isolation Voltage	Input-PE			2000VAC					
	Output-PE				1500	VAC			
PHYSICAL SPECIFICATIONS				1		-			
	Open Frame				16.93oz	(480a)			
Weight	U-Chassis				20.46oz	(580g)			
5	Enclosed with Top Fan			24.34oz (690g)					
		Frame	5 03in x 3in x 1 38in (127 8mm x 76 2mm x 35mm)						
Dimensions (L x W x H)	Tolerance +0 5mm	U-Cha	assis	5 5in x 3 25in x 1 6in (139 7mm x 82 55mm x 40 6mm)					
		Enclo	sed with Top Fan	5.5in x 3.25in x 2.42in (139.7mm x 82.55mm x 61.4mm)					
Cooling Method	0.0.17 X 0.2011	Free Convection	on/30 CFM an						
SAFETY CHARACTERISTICS									
					UI /IEC/EN 6	0601 3 1 Editi			
		15V Models	UL/IEC/EN 00001 3.1 Edition (2XMOPP),						
Satety Approvals ⁽⁵⁾				UI /IFC/FN 60601 3 1 Edition (2xMOPP)					
			Others	UI /IEC/EN 60950 AM2_UI /IEC/EN62368					
	Co	onducted	d and Radiated EMI	EN5	5011 Conducte	d Class B. Ra	diated Class A		
EMC			FMS	FN60601_1_2 4 th Edition					

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NOTES Ripple & noise are measured at 20MHz bandwidth with ceramic 0.1uF & chemi-con KY 47uF parallel capacitor. 1. To Oscilloscope A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope Load probe ground led should connect right to the ground ring of the probe and -Output + 47uF should be as short as possible. The oscilloscope bandwidth should be 0.1uF ÷. +Output 20MHz and connected to AC ground. Twisted Pair : # 18AWG-30cm Hold-Up Time measured at 90% Vout. 2. 3. Main Vout >3% Load, 12V (Aux)/0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2~13.3V 4. It is strongly recommended to conduct this test with DC voltage. If customer wishes to test AC voltage, disconnect all Y-Capacitors within supply. 5. This product is Listed to applicable standards and requirements by UL. 6. Current Share Board (Optional) The output voltage difference of each parallel single element should be less than 0.2V а. b. Output power at parallel operation = rated power per unit x number of unit x 90% Connect no more than 2 units in parallel. Please contact factory for advice if more than 2 are needed. C. d. Minimum load should be 15% PSMQF500 PSMQF500 -Vo +Vo +S -S -Vo +Vo +S -S Vin+Vin +S -S -Vin+Vin +S -S nt Sha ng Board -Vo +Vo -Vo +Vo -Vo +Vo Load 7 CAUTION: Double pole, neutral fusing. Disconnect mains before servicing. Due to advances in technology, specifications subject to change without notice.

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CHARACTERISTIC CURVES



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MECHANICAL DRAWINGS



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CURRENT SHARE FUNCTION -



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Brands		Alex		JST									
PIN# Sing	e Mating Hou	sing Termi	nal Mating Ho	using	Terminal	_				Conne	ector Pin (CN2)		107
1 PE 2 AC IN	- (N)	- 961	-		- SVH-41T-	_	PIN#	Brands	s Single	Cherr Mating Housing	ng Weei Terminal	Mating	JST Terminal
4 AC IN	(L) 9390-3	Serie	s vnk-s	IN	P1.1		C1		-S	CP-H20-	CP-T20B	PHR-2	SPH-002T-
5 +DC C	UT Terminal: M	5 Pan HD scre lbs-in (90 cNm	w in 2 positions				C2		+S	02	01 1205	111112	P0.5L
0 000	Co	nnector Pin (CN1)				Г			Mating H	lousing Pin (CN	3)	
Brands	Cherr	ig Weei		JST			-		Brand	ds	Cherng Weei		JST
C1 -5VSB	Mating Housi	ng Termir	al Mating Ho	busing	Termina	1	_	PIN#		Single	Connector	Co	nnector
C2 +5VSB C3 GND C4 DC OK C5 -RC C6 +RC	PHD-H20-2X4	IP PHD-T	20 PHDR-0	8VS	SPHD- 001T- P0.5			C1 C2 C3 C4 C5 C6		-5VSB +5VSB GND DC OK -RC +RC	CP-W20-06	B6B	-PH-K-S
C7 -S C8 +S	_									Conne	ector Pin (CN4)		
	Co	nnector Pin (FAN)		•			Brand	S	Cher	ng Weei		IST
Brands	Cherng	Weei		JST			PIN#	5	Single	Mating Housing	Terminal	Mating Housing	Terminal
PIN# Single	Mating Housing	g Termina	Mating Hou	sing	Terminal		C1		LS	CP-H20-	CP T20B		SPH-002T-
F1 F12V	CX-H250-02	T2501	XHP-2		002T-P0.	6	C2		LS	02	01-1200	11111-2	P0.5L
	FA	N CN2	U-Chas	sis Mo	dels ("U" :	Suffix) with C	Curren	t Funct	ion			
	4-93.2	2 20 4 6 11 10 5 0 10 5		335	24.0 9.85 63.35 30.1 20.0 8 05	A A A A A A A A A A A A A A A A A A A	E CFM	50.0 8 0 16,28 A= For fixtu a=M3x0.5F Fororque:3±0 21,6 +	re to chassis e to pcb/cha 5.5 Kgf.cm	: only ssis only	This advise of the second seco	J Case T=1 d not to scr nore than 1 Mou	-Mounting Screw
Brands PIN# Sing	e Mating Hou	Alex	inal Mating H	JST	Termina	1							
A,B PE	-		-		-					Conne	ector Pin (CN2)		
1 AC IN	(N)	96	T VUD	3N	SVH-41	г-		Brands	S	Cherr	ng Weei	Mating	JST
3 AC IN	(L) 9390-0	' Sei	ies	SIN	P1.1		PIN#		Single	Housing	Terminal	Housing	Terminal
4 +DC C 5 -DC O	UT Terminal: Ma UT Torque to 8	5 Pan HD scre lbs-in (90 cNm	w in 2 positions) max.				C1 C2		-S +S	CP-H20- 02	CP-T20B	PHR-2	SPH-002T- P0.5L
	Cr	nnector Pin (,									0)	
Brands	Che	erng Weei		JST			Г		Brond	Mating H	Chorpe Wee	3)	IST
PIN# Si	ngle Mating Housing	Termina	I Mating Housing	Tei	rminal		_	PIN#	Diano	Single	Connector	C	
C1 -5 C2 +5 C3 G C4 DC C5 -1 C6 + C7 - C8 -	/SB VSB ND OK RC 2X4P S S	PHD-T2	0 PHDR- 08VS	SPHI F	D-001T- P0.5			C1 C2 C3 C4 C5 C6		-5VSB +5VSB GND DC OK -RC +RC Conne	CP-W20-06	B6B	-PH-K-S
		nnector Pin /	FAN)	1				Brands	S	Cher	ng Weei		JST
Brands	Cherr	ig Weei	,	JST]	PIN#	5	Single	Mating Housing	Terminal	Mating Housing	Terminal
PIN# Singl	e Mating Housing	Terminal	Mating Housing	Ter	minal		C1		LS	CP-H20-	CP-T20B	PHR-2	SPH-002T-

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F1

F2

+12V

GND

CX-H250-

02

XHP-2

CX-T2501

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SXH-002T-P0.6

C2

LS

02

P0.5L





FUNCTION DESCRIPTION OF CN1

Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal (-V). Return for DC-OK and –RC signal output.
<u></u>		Standby voltage output ground 4.2~5.5V, referenced to pin C1(-5VSB).
62	+3V3B	The maximum load current is 1A with Fan, 0.4A without Fan.
C3	GND	This pin connects to the negative terminal (-V). Return for DC-OK and –RC signal output.
C4	DC OK	DC-OK Signal is a DC output, referenced to pin C3 (DC-OK GND)
C5	-RC	This pin connects to the negative terminal (-V). Return for DC-OK and –RC signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C5 (-RC), Short: Power OFF, Open: Power ON. The input voltage must be less than 1V in order to disable VOUT and greater than 3.3V (up to 5V) to enable it.
C7	-S	Negative sensing. The –S signal should be connected to the negative terminal of the load. The –S and +S leads should be twisted in pair to minimize noise pick-up effect.
C8	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and –S leads should be twisted in pair to minimize noise pick-up effect.



FUNCTION MANUAL & APPLICATION NOTE -



REMOTE

OVER VOLTAHE PROTECTION +RC (ON/OFF)

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CONTROL

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MODEL NUMBER SETUP -

PSMQF	500	-	12	S	Ο	-	Р
Series Name	Output Power		Output Voltage	Output Quantity	Form Factor		Paralleling
			 12: 12VDC 15: 15VDC 24: 24VDC 48: 48VDC 	S: Single Output	O: Open FrameU: U-ChassisF: Enclosed with Top Fan		Blank: No Paralleling P: Paralleling

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COMPANY INFORMATION ·

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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