

date 12/12/2014

page 1 of 7

DESCRIPTION: AC-DC POWER SUPPLY SERIES: PSF-100

FEATURES

- up to 100 W continuous power
- universal input (90~264 Vac)
- built-in constant current limit circuitry
- alarm signal for AC OK and battery low
- short circuit, over load, over voltage, brown-out, battery low, and battery polarity protections
- withstand 2G vibration test
- efficiency up to 87%







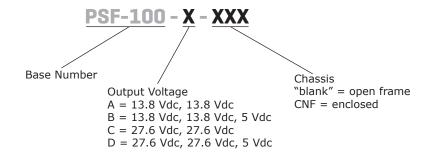


MODEL		output voltage	output current¹	output power²	ripple and noise ³	efficiency
		(Vdc)	max (A)	max (W)	max (mVp-p)	typ (%)
PSF-100-A	Vo1 Vo2	13.8 13.8	7.3 2.875	100	100 150	86
PSF-100-B	Vo1 Vo2 Vo3	13.8 13.8 5	6.2 2.875 3	100	100 150 100	85
PSF-100-C	Vo1 Vo2	27.6 27.6	3.65 1.725	100	100 150	87
PSF-100-D	Vo1 Vo2 Vo3	27.6 27.6 5	3.1 1.725 3	100	100 150 100	85

Notes:

- 1. Vo2 battery discharge current must not exceed 50% of the rated power.
- Maximum total combined power (rated power).
 At 20 MHz bandwidth using a 12" twisted pair-wire, each output terminated with a 47 μF and 0.1 μF parallel capacitors.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage		90 127		264 373	Vac Vdc
surge voltage	for maximum of 5 seconds			300	Vac
frequency		47		63	Hz
current	at 115 Vac at 230 Vac		2.0 1.2		A A
inrush current	at 115 Vac, cold start at 230 Vac, cold start		35 70		A A
leakage current	at 264 Vac			1	mA

OUTPUT

parameter	conditions/description		min	typ	max	units
line regulation	low line to high line, at rated lo	oad		±0.5		%
load regulation	10% to 100% rated load Vo1 Vo3			±0.5 ±1.5		% %
voltage accuracy	Vo1 Vo3			±2 ±3		% %
hold-up time	at 115 Vac, full load at 230 Vac, full load			8 50		ms ms
setup time	at 115/230 Vac, full load, cold start		800			ms
rise time	at 115/230 Vac, full load			50		ms
adjustability	Vo1			±10		%
temperature coefficient	Vo1, 0°C~50°C			±0.03		%/°C
AC OK	•	open collector output y contact output				
battery low	- · · · · · · · · · · · · · · · · · · ·	V ±3% V ±3%				

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection Vo1, latch off mode		115		150	%
over current protection	auto recovery, hiccup mode Vo1, Vo3 Vo2	110 100			% %
battery cut off	PSF-100-A, PSF-100-B PSF-100-C, PSF-100-D	9.5 19	10 20	10.5 21	Vdc Vdc

SAFETY & COMPLIANCE

conditions/description	min	typ	max	units
input to output	3,000			Vac
input to ground	1,500			Vac
output to ground	500			Vac
input to output at 500 Vdc 100			MΩ	
UL 60950-1, EN 60950-1				
		11)		
PSF-100-A, PSF-100-B as per MIL-HDBK-217	F 103,400			hrs
PSF-100-C, PSF-100-D as per MIL-HDBK-217	F 92,100			hrs
2011/65/EU				
	input to output input to ground output to ground input to output at 500 Vdc UL 60950-1, EN 60950-1 EN 55022, EN 61000-6-(1,3), EN 61000-3-(2 EN 55024, EN 50204, EN 61204-3, EN 61000 PSF-100-A, PSF-100-B as per MIL-HDBK-217/ PSF-100-C, PSF-100-D as per MIL-HDBK-217/	input to output input to ground 1,500 output to ground 1,500 output to ground 500 input to output at 500 Vdc 100 UL 60950-1, EN 60950-1 EN 55022, EN 61000-6-(1,3), EN 61000-3-(2,3), EN 55024, EN 50204, EN 61204-3, EN 61000-4-(2, 3, 4, 5, 6, 8, PSF-100-A, PSF-100-B as per MIL-HDBK-217F 103,400 PSF-100-C, PSF-100-D as per MIL-HDBK-217F 92,100	input to output 3,000 input to ground 1,500 output to ground 500 input to output at 500 Vdc 100 UL 60950-1, EN 60950-1 EN 55022, EN 61000-6-(1,3), EN 61000-3-(2,3), EN 55024, EN 50204, EN 61204-3, EN 61000-4-(2, 3, 4, 5, 6, 8, 11) PSF-100-A, PSF-100-B as per MIL-HDBK-217F 103,400 PSF-100-C, PSF-100-D as per MIL-HDBK-217F 92,100	input to output 3,000 input to ground 1,500 output to ground 500 input to output at 500 Vdc 100 UL 60950-1, EN 60950-1 EN 55022, EN 61000-6-(1,3), EN 61000-3-(2,3), EN 55024, EN 50204, EN 61204-3, EN 61000-4-(2, 3, 4, 5, 6, 8, 11) PSF-100-A, PSF-100-B as per MIL-HDBK-217F 103,400 PSF-100-C, PSF-100-D as per MIL-HDBK-217F 92,100

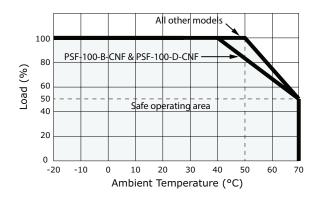
Note: 1. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

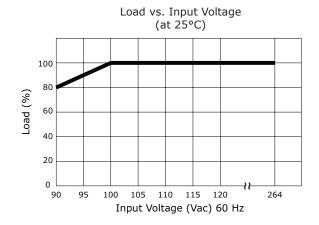
ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-20		70	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	20		90	%
storage humidity	non-condensing	10		90	%
vibration	at 10~500 Hz, 10 min per cycle for 60 minutes each test along the X, Y, and Z axis		2		G

DERATING CURVES







MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	open frame: $123 \times 95 \times 31$ enclosed: $129.5 \times 97.5 \times 37.5$				mm mm
weight	open frame enclosed		0.34 0.47		kg kg

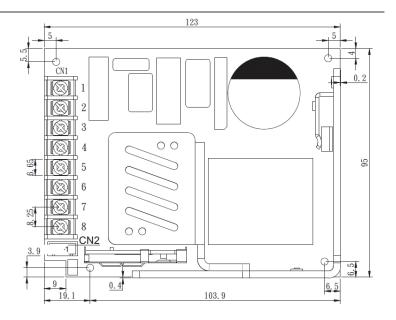
MECHANICAL DRAWING

OPEN FRAME

units: mm

CN1 Pin Connections			
PIN	Function		
1	AC/L		
2	AC/N		
3	FG <u></u>		
4	-Vo1		
5	+Vo1		
6	+Vo2 (+ BAT)		
71	-Vo2 (- BAT)		
82	+Vo3 (+5 V)		

	CN2 Pin Connections			
PIN	Function			
Р	SF-100-A, PSF-100-C ³			
1	AC OK			
2	BAT LOW			
3	PSF-100-A: (13.8 V/20 mA) PSF-100-C: (27.6 V/20 mA)			
P	SF-100-B, PSF-100-D ⁴			
1 2	AC OK			
3 4	BAT LOW			



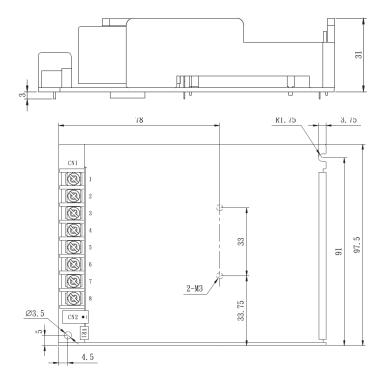
CNF

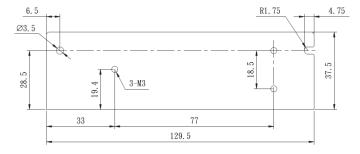
Notes:

units: mm

CN1	CN1 Pin Connections			
PIN	Function			
1	AC/L			
2	AC/N			
3	FG ↓			
4	-Vo1			
5	+Vo1			
6	+Vo2 (+ BAT)			
71	-Vo2 (- BAT)			
8 ²	+Vo3 (+5 V)			
	1			

	CN2 Pin Connections			
PIN	Function			
Р	PSF-100-A, PSF-100-C ³			
1	AC OK			
2	BAT LOW			
3 PSF-100-A: (13.8 V/20 m PSF-100-C: (27.6 V/20 m				
Р	PSF-100-B, PSF-100-D4			
1 2	AC OK			
3 4	BAT LOW			

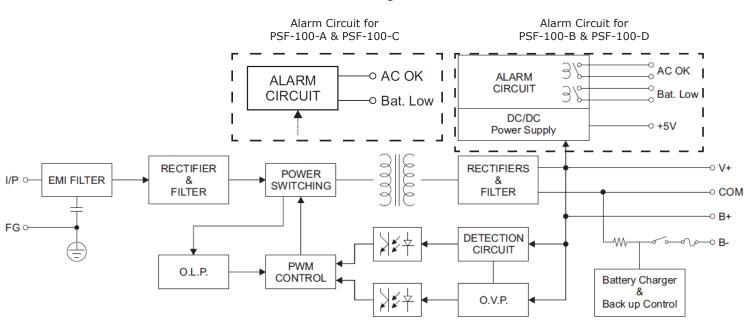




- To protect product damage do not connect the GND port with -BAT port.
 PSF-100-B and PSF-100-D only.
 For PSF-100-A & PSF-100-C, CN2 mates with JST XHP-3 or equivalent and JST SXH-001 T-P0.6 or equivalent.
 For PSF-100-B & PSF-100-D, CN2 mates with JST XHP-4 or equivalent and JST SXH-001 T-P0.6 or equivalent.

BATTERY CHARGING SPECIFICATIONS

Block Diagram



PSF-100-A & PSF-100-C

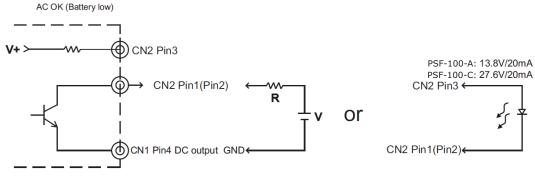
Alarm Signal for AC OK and Battery Low

Function	Description	Alarm Output
AC OK	The signal is low when the power supply turns on	Low (0.3 V max. at 30 mA)
AC OK	The signal is high when the power supply turns off	High/open (external voltage < 50 V)
Battery	The signal is low when the voltage of the battery is below: 12 V (PSF-100-A), 22 V (PSF-100-C)	Low (0.3 V max. at 30 mA)
Low	The signal is high when the voltage of the battery is above: 12 V (PSF-100-A), 22 V (PSF-100-C)	High/open (external voltage < 50 V)

Notes:

- Alarm signal is sent out through "AC OK" and "Battery Low" pins.
 An external voltage source is required for this function. The maximum applied voltage is 50 V and the maximum sink current is 30 mA.

Internal Circuit of AC OK and Battery Low



BATTERY CHARGING SPECIFICATIONS (CONTINUED)

PSF-100-B & PSF-100-D

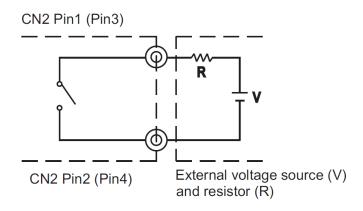
Alarm Signal for AC OK and Battery Low

Function	Description	Alarm Output	
AC OK	The signal is low when the power supply turns on	Low or short	
	The signal is high when the power supply turns off	High/open (external voltage < 30 V)	
Battery Low	The signal is low when the voltage of the battery is below: 12 V (PSF-100-B), 22 V (PSF-100-D)	Low or short	
	The signal is high when the voltage of the battery is above: 12 V (PSF-100-B), 22 V (PSF-100-D)	High/open (external voltage < 30 V)	

Notes:

- Alarm signal is sent out through "AC OK" and "Battery Low" pins (relay contact type).
 An external voltage source is required for this function. The maximum applied voltage is 30 V and the maximum sink current is 1 A.

Internal Circuit of AC OK and Battery Low



REVISION HISTORY

rev.	description	date
1.0	initial release	11/25/2013
1.01	updated datasheet	12/12/2014

The revision history provided is for informational purposes only and is believed to be accurate.



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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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