



PST21A

AC-DC 1200W Conduction cooled



Features

- 85-264 Vac Input voltage ranges , PFC
- 1-6 isolated outputs
- 255*127* 40mm very low profile
- Industrial or ruggedized versions
- Active very low Inrush current
- Many output configurations available
- Conduction cooled 100°C baseplate

Safety IEC/EN 60950-1, RoHS lead-free-solder compliant



The PST21A, very compact and low profile 1200W AC-DC power supply in chassis format, incorporates input filtering, input and output protections, very robust mechanical mounting and connection, conformal coating and MIL-STD options required in most of the severe environment for industrial, defense applications. The PSU provides high reliability thanks to the integration of Vicor Corp. modules, high efficiency, input-to-output isolation, soft start and **active very low inrush circuit**, overtemperature protection, input over/undervoltage lockout. The PSU is configurable with 1 to 6 outputs in many output voltages from 3V3 to 48Vdc, other outputs are even possible as semi-standard versions, they are continuously short-circuit proof. The 100°C baseplate allows operation in high temperature environment.

Electrical Input Data

Characteristics	Input Conditions	Input			Unit
		min	typ	max	
Operating input voltage		85		264	Vac
Operating input voltage		100		350	Vdc
Frequency		47	50	440	Hz
Power Factor	230Vac, 50Hz, Pnom.		0,96	0,98	
Input current	At Vin min			16	A
No-load input power	At Vin typ		15		W
Peak inrush current	Vin max, Active circuit			1	A
Start-up time				1	s

Electrical Output Data

PST211200 can be equipped with up to two boards of the models below (mix possible example 1 Maxi board + 1 Micro board with 1,2 or 3 micro modules)																						Unit	
Output	3V3			5V			12V			15V			24V			28V			48V				
Characteristics	Conditions	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	
Output voltage		3V3			5			12			15			24			28			48			V
Trim range	Factory set	3	3,6	4,5	5,5	10,8	13,2	13,5	16,5	21,6	26,2	25,2	30,8	43,2	51,8								V
Overvoltage protection			4,5		6,5		14,9		18,5				34		58								V
Output noise	20MHz		75		75		100		100		100		100		150								mVpp
Efficiency			75		83		85		84				83		84								%
Load Regulation	Vin nom.		1		1		0,5		0,5		0,4		0,4		0,4		0,4		0,4				%
Maxi Board (M)	Each board includes 1 Maxi module below																						
Output current		0	80	0	80	0	50	0	40	0	25	0	21,5	0	12,5	0	10,7	0	6,25	0	3,1	0	A
Max. power			264		400		600		600		600		600		600		600		600		600		W
Output current limit		92	104	92	108	57,5	67,5	46	56	29	39	24	29	14	17								A
Mini Board (m)	Each board includes up to 2 Mini modules below																						
Output current		0	45	0	40	0	25	0	20	0	12,5	0	10,7	0	6,25	0	5,3	0	3,1	0	3,1	0	A
Max. power			150		200		300		300		300		300		300		300		300		300		W
Output current limit		54	64	46	52	29	35	23	26	14,5	17	12,5	14,5	7,2	8,2		6,2	7	3,6	4,4		A	
Micro Board (μ)	Each board includes up to 3 Micro modules below																						
Output current		0	22,7	0	20	0	12,5	0	10	0	6,25	0	5,3	0	3,1	0	3,1	0	3,1	0	3,1	0	A
Max. power			75		100		150		150		150		150		150		150		150		150		W
Output current limit		25	31	23	26	14,5	17	11	14	7,2	8,2	6,2	7	3,6	4,4							A	

System





Temperature

Conditions		Standard			T option			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
Ambiant	Operating	-20		+100	-40		+100	°C
Heatsink		-20		+100	-48		+100	
Storage	Not operating	-40		+125	-40		+125	

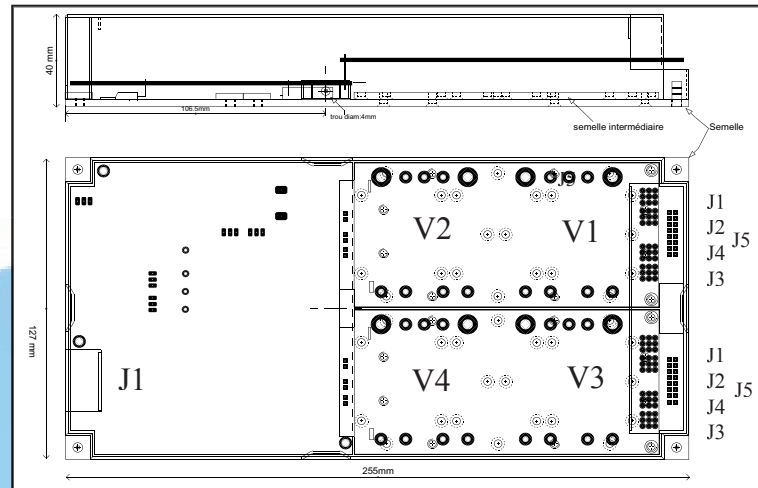
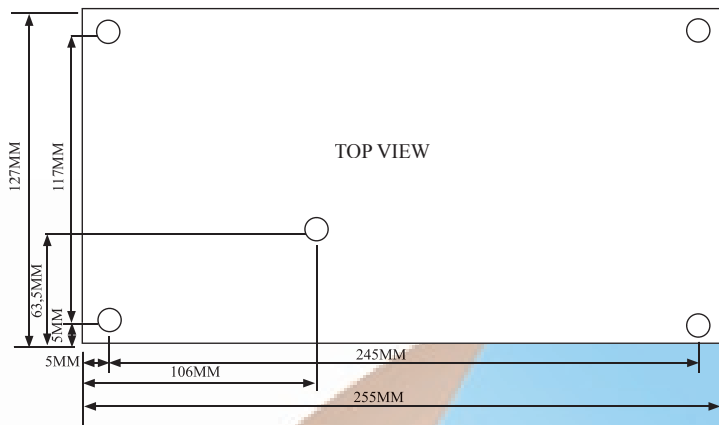
MTBF

MIL-HDBK-217F, notice 2	Model	Heatsink Temp.	GB	GF
MTBF (Hours)	PST21A 3 outputs	40°C	285000	165000
		70°C	139500	82300
		100°C	86600	51000

Mechanical

MOUNTING : 5 holes Diam. : 4,2mm

TOP VIEW



Connector Pin Allocation

PST21A		
Description	PIN	Connector
Input Screw type connector GMKDS 3/3-7.62		
1	J1-1	Earth
2	J1-2	Neutral AC/N
3	J1-3	Line AC/L
Output Maxiboard Power connectors		
OUT+	J1	Würth Pres Fit M4 Ref : 7461095
OUT-	J2	Würth Pres Fit M4 Ref : 7461095
Output Miniboard Power connectors		
OUT1+	J1	Würth Pres Fit M3 Ref : 7461093
OUT1-	J2	Würth Pres Fit M3 Ref : 7461093
OUT2+	J3	Würth Pres Fit M3 Ref : 7461093
OUT2-	J4	Würth Pres Fit M3 Ref : 7461093
Output Microboard Power connector 6 Pins Male		
OUT1+	J1-1	WURTH TBL3117691311700006
OUT1-	J1-2	
OUT2+	J1-3	
OUT2-	J1-4	
OUT3+	J1-5	
OUT3-	J1-6	
Signals Würth 690368191472 Female Male 27 pins		
MICRO BOARD	MINI BOARD	MAXI BOARD
J5-1 : ACFAIL	J5-1 : ACFAIL	J5-1 : ACFAIL
J5-2 : PGOOD	J5-2 : PGOOD	J5-2 : PGOOD
J5-3 : RTN	J5-3 : RTN	J5-3 : RTN
J5-4 : INHIB	J5-4 : INHIB	J5-4 : NC
J5-5 : +5VAUX	J5-5 : +5VAUX	J5-5 : +5VAUX
J5-6 : NC	J5-6 : S1+	J5-6 : NC
J5-7 : NC	J5-7 : S1-	J5-7 : NC
J5-8 : ADJ1	J5-8 : ADJ1	J5-8 : NC
J5-9 : NC	J5-9 : PR1	J5-9 : PR1
J5-10 : NC	J5-10 : NC	J5-10 : NC
J5-11 : ADJ2	J5-11 : PR2	J5-11 : INHIB
J5-12 : NC	J5-12 : S2+	J5-12 : S1+
J5-13 : NC	J5-13 : S2-	J5-13 : S1-
J5-14 : ADJ3	J5-14 : ADJ2	J5-14 : ADJ1

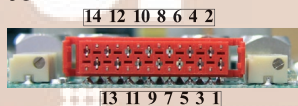
Signals

- PGOOD : Collector isolated optocoupled signal referred to RTN, closed when all output voltages are OK. Led is also available for each output
- INHIB : Connect to RTN for disabling the output. Other combinations, consult factory.
- S+,S- : Remote Sense, max 0,5V per line compensation (If local sense, connect locally S+ to OUT+ and S- to OUT- of the corresponding output). Senses are not included on Microboard.
- +5VAUX : auxiliary supply limited to 1mA. Referred to RTN
- ADJ : output can be adjusted 50-110%Vnom. with the potentiometer at the output side or by an external voltage 0,6 to 1,25Vmax voltage referred to RTN.
- PR : Parrallel only identical outputs (voltage and power). Outputs in parrallel will current share when their corresponding PR are connected together. When outputs are coming from different boards, RTN have to be connected together.

Options

- H : 15mm heatsink longitudinal fins
- H1 : 15mm heatsink transversal fins
- M : MIL-STD ruggedized
- T : -40°C operation
- V : conformal coating

J5

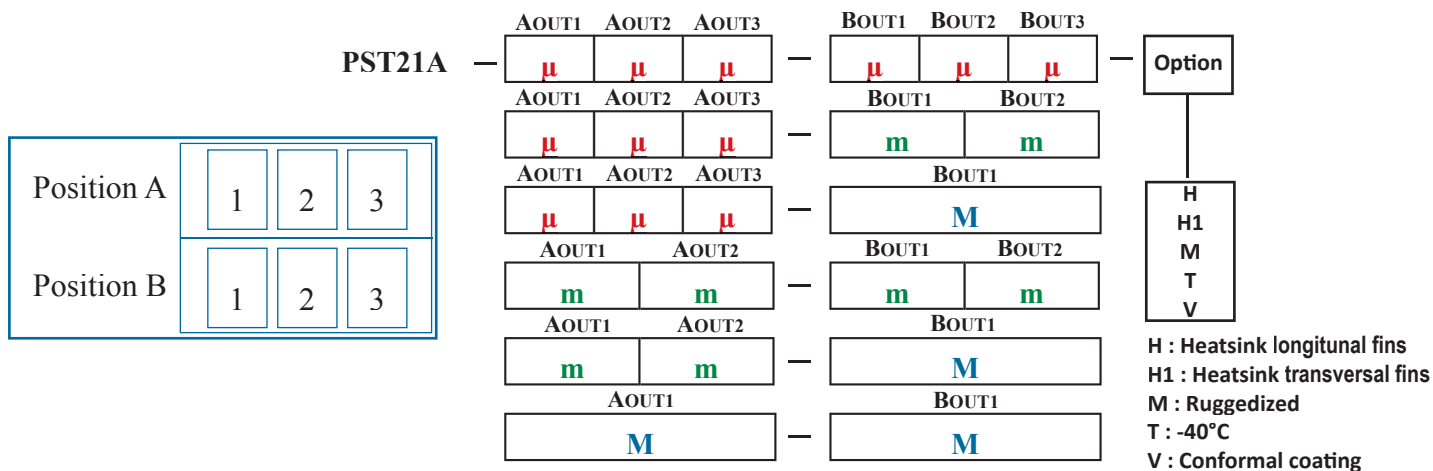


Standards

The converters are built to meet the safety standards IEC 60950-1, EN 60950-1. (85-264Vac/47-63Hz, 85-132Vac/44-440Hz), EN55022A, EN61000-3-2, -3 and EN61000-4 -2,-4,-5,-11,-15.
 Option M : built to meet MIL-STD 461E CE102, MIL-STD 1399-300A, MIL-STD810E shock & vibrations
 Option V : built to meet MIL-STD 810E humidity
 'Built to meet' mentioned in the different paragraphs of the datasheet means that Power System Technology has designed the product to meet the standard but not certified it in a laboratory.



How to order



μ-μ-μ : Microboard Aout1,Aout2,Aout3 or Bout1,Bout2,Bout3 : Up to 3 outputs with micromodules from 2V to 48Vdc 150W (see table page 1)

μ		μ		μ	
N	N	N	N	N	N
2	50	2	50	2	50
3V3	50, 75	3V3	50, 75	3V3	50, 75
5	50, 100	5	50, 100	5	50, 100
8	100	8	100	8	100
12	75, 150	12	75, 150	12	75, 150
15	75, 150	15	75, 150	15	75, 150
24	75, 150	24	75, 150	24	75, 150
28	75, 150	28	75, 150	28	75, 150
36	75, 150	36	75, 150	36	75, 150
48	75, 150	48	75, 150	48	75, 150

m-m : Miniboard Aout1,Aout2 or Bout1,Bout2 : Up to 2 outputs with minimodules from 2V to 48Vdc 300W (see table page 1)

Note: High current, low voltage outputs have to be placed on Aout1 or Bout1 in priority

m		m	
N	N	N	N
2	100	2	100
3V3	100, 150	3V3	100, 150
5	150, 200	5	150, 200
8	200	8	200
12	200, 300	12	200, 300
15	200, 300	15	200, 300
24	200, 300	24	200, 300
28	200, 300	28	200, 300
36	200, 300	36	200, 300
48	200, 300	48	200, 300

M : Maxiboard Aout1 &/or Bout1: 1 output with maximodule from 2V to 54Vdc 600W (see table page 1)

M	
N	N
2V	160
3V3	200, 264
5	300, 400
8	300, 400
12	400, 600
15	400, 600
24	400, 600
28	400, 600
32	600
36	400, 500, 600
48	400, 600
54	600

Example :

PST21A-48150-48150-48150-48150-48150-48150-M (2 microboards with 6 outputs of 48V 150W with MIL-STD option)

PST21A-3V375-5100-12150-24300-28300 (1 microboard with 3 different outputs and 1 miniboard with 2 different outputs)

Power System Technology