

# PST21B

## AC-DC 600W Conduction cooled



### Features

- 85-264 Vac Input voltage ranges , PFC
- 1-3 isolated outputs
- 200\*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 PST21B, very compact and low profile 600W 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 3 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.

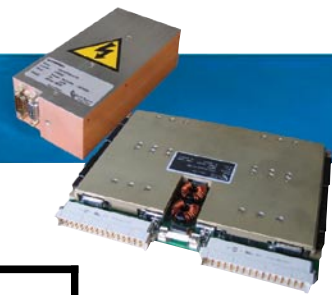
### Electrical Input Data

Characteristics	Input Conditions	PST21B			Unit
		min	typ	max	
Operating input voltage		85		264	Vac
Operating input voltage		120		350	Vdc
Frequency		47	50	440	Hz
Power Factor	230Vac, 50Hz, Pnom.		0,96	0,98	
Input current	At Vin min			10	A
No-load input power	At Vin typ		8		W
Peak inrush current	Vin max, Active circuit			1	A
Start-up time				1	s

### Electrical Output Data

PST21B can be equipped with one board of the models below (1 Maxi board / 1 Mini board / 1 Micro board)																						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		29,1		34		58								V
Output noise	20MHz		100		100		150		150		150		150		200								mVpp
Efficiency			75		83		85		84		85		83		84								%
Load Regulation	Vin nom.		1		1		0,5		0,5		0,4		0,4		0,4								%
<b>Maxi Board (M)</b>	includes 1 Maxi module below																						
Output current		0	80	0	80	0	50	0	40	0	25	0	21,5	0	12,5	0	12,5	0	6,25	0	6,25	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
<b>Mini Board (m)</b>	includes up to two 2 Mini modules below																						
Output current		0	45	0	40	0	25	0	20	0	12,5	0	10,7	0	6,25	0	10,7	0	6,25	0	6,25	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								A
<b>Micro Board (µ)</b>	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





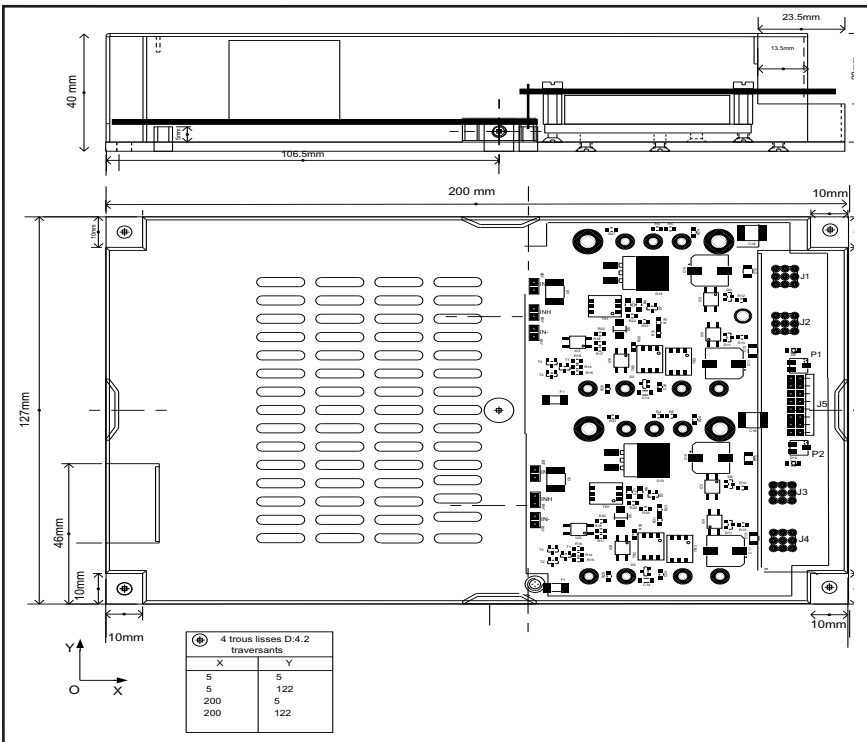
## Temperature

PST21B		Standard			T option			Unit
Conditions		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	Units
MTBF	PST21B 3 outputs	40°C	285000	165000	Hours
		70°C	139500	82300	
		100°C	86600	51000	

## Mechanical



## Connector Pin Allocation

Description	PST21B	
	PIN	Connector
<b>Input Screw type connector GMKDS 3/3-7.62</b>		
1	J1-1	Earth
2	J1-2	Neutral AC/N
3	J1-3	Line ACL
<b>Output Maxiboard Power connectors</b>		
OUT+	J1	Wurth Pres Fit M4 Ref : 7461095
OUT-	J2	Wurth Pres Fit M4 Ref : 7461095
<b>Output Miniboard Power connectors</b>		
OUT1+	J1	Wurth Pres Fit M3 Ref : 7461093
OUT1-	J2	Wurth Pres Fit M3 Ref : 7461093
OUT2+	J3	Wurth Pres Fit M3 Ref : 7461093
OUT2-	J4	Wurth Pres Fit M3 Ref : 7461093
<b>Output Microboard Power connectors</b>		
OUT1+	J1	Wurth Pres Fit M3 Ref : 7461093
OUT1-	J2	Wurth Pres Fit M3 Ref : 7461093
OUT2+	J3	Wurth Pres Fit M3 Ref : 7461093
OUT2-	J4	Wurth Pres Fit M3 Ref : 7461093
OUT3+	J6	Wurth Pres Fit M3 Ref : 7461093
OUT3-	J7	Wurth Pres Fit M3 Ref : 7461093
<b>Signals Wurth 690368191472 Female 27 pins</b>		
<b>Microboard</b>	<b>Miniboard</b>	<b>Maxiboard</b>
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 : +SVAUX	J5-5 : +SVAUX	J5-5 : +SVAUX
J5-6 : S1+	J5-6 : S1+	J5-6 : NC
J5-7 : S1-	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 : S2+	J5-12 : S2+	J5-12 : S1+
J5-13 : S2-	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)
- +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: Parallel only identical outputs (voltage and power). Outputs in parallel will current share when their corresponding PR are connected together. When outputs are coming from different boards, RTN have to be connected together.

## Options

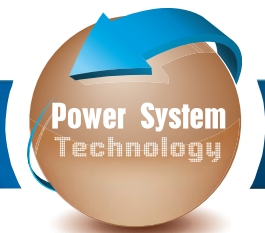
- H : 15mm heatsink longitudinal fins, H1 : transversal fins
- M : MIL-STD ruggedized
- T : -40°C operation
- V : conformal coating

J5

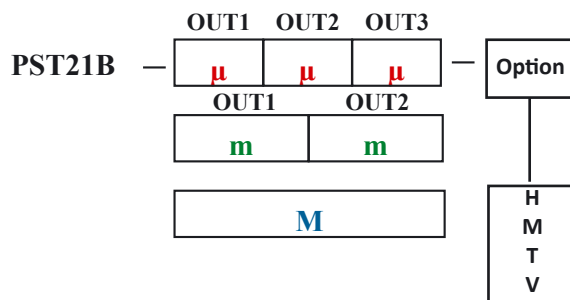


## Standards

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



H : Heatsink  
M : Ruggedized  
T : -40°C  
V : Conformal coating

**μ-μ-μ** : Microboard V1,V2,V3 : Up to 3 outputs with micromodules from 3V3 to 48Vdc 150W (see table page 1)

μ		μ		μ	
N	N	N	N	N	N
3V3	75	3V3	75	3V3	75
5	100	5	100	5	100
12	150	12	150	12	150
15	150	15	150	15	150
24	150	24	150	24	150
28	150	28	150	28	150
48	150	48	150	48	150

**m-m** : Miniboard V1,V2 : Up to 2 outputs with minimodules from 3V3 to 48Vdc 300W (see table page 1)

m		m	
N	N	N	N
3V3	150	3V3	150
5	200	5	200
12	300	12	300
15	300	15	300
24	300	24	300
28	300	28	300
48	300	48	300

**M** : Maxiboard V1 : 1 output with maximodule from 3V3 to 48Vdc 600W (see table page 1)

M	
N	N
3V3	264
5	400
12	600
15	600
24	600
28	600
48	600

Example :

PST21B-48150-48150-48150-M (1 microboards with 3 outputs of 48V 150W with MIL-STD option)

PST21B-24300-28300 (1 miniboard with 2 different outputs)

# Power System Technology

