

Solar Power Conditioning Unit

FEATURES:

- No Load Shut Down for load $\leq 5\%$
- Short Circuit & Over Load Protection
- Over heating Protection
- Inbuilt Heavy Duty Solar Charge Controller.
- Fully equipped with powerful Grid Charger.
- Dual Display showing PV & Inverter output.
- User friendly client and Web based Software



Single Phase Solar Power Conditioning Unit								
DSP Based PWM Technology								
Type	1KW	2KW	3KW	4KW	5KW	6KW	7.5KW	10KW
Technology								
Ratings								
Model No.	PCU1K24	PCU2K48	PCU3K48	PCU4K96	PCU5K96	PCU6K120	PCU7.5K120	PCU10K180

INVERTER

INPUT PARAMETERS								
Nominal Input Voltage (DC)	24V		48V		96V		120V	180V
Input Voltage Range (DC)	21V-31V		44-60V		88-120V		110-150V	165-225V
OUTPUT PARAMETERS								
Voltage Regulation				230V $\pm$ 2% / 110V $\pm$ 2%				
Frequency Regulation				50Hz / 60Hz $\pm$ 0.05Hz				
Efficiency				>87%				
Output Waveform				Pure Sine Wave				
Total Harmonic Distortion				<3% (On Linear Load)				
Crest Factor				>4:1				

SOLAR CHARGE CONTROLLER

Series Regulator Common Negative								
Type								
Maximum Input PV Voltage				25V Per 12V Solar Panel				
Charging Current				Upto 40Amp				
Solar Array				Single Array				
Bulk Voltage			56.4V	113V	141V	212V		
Adjustable Bulk Voltage			54-58V	108-116V	135-145V	202-218V		
Absorption Period								
Float Voltage			108V	124V	135V	270V		
Protection								

Hold battery voltage at bulk setting for a cumulative period of 1 hour

Over Current, Battery Over Charge Protection, PV/Battery Reverse Polarity, Reverse

Current Flow, High Temperature

GRID CHARGER

Grid Input Voltage Range	150VAC - 270VAC
Charging Current	Upto 20Amp

Other Specifications
Indications

Indications for PV Voltage, Battery Voltage, Output Voltage, Output Frequency, Output Current, Charging Current, Charging Mode, High Temperature, High Current, Array/Battery Reverse Polarity etc.

Operating Temperature	0°C to +45°C
Storage Temperature	0°C to +55°C
Acoustic Noise (at 1mts)	<60dB

Specifications are subject to change without prior notice.

Su-Kam
Ek nayi soch

Global Certifications

ISO 9001:2000 ISO 14001:2004



Customer Care No.: 1800-102-4423 (Toll Free)
sms: 'SUKAM06' to 57007

Su-Kam Power Systems Limited

54, Udyog Vihar Phase - VI, Sector - 37,
Gurgaon - 122 001 (Haryana) India

Tel.: 91-124-4170500, 4030700, Fax : 91-124-4038700,
e-mail: info@su-kam.com. Website: www. su-kam.com

Solar power

Tues - 14/12/10 -

Sukam
Solar Power Conditioning Unit
~~etc.~~ (PCU)

Solar panels

req. - 1 kVA - for each bungalow.
100 - 150 bungalows.

* - Common lighting - Sweet lights.
* - Indoor " - geysers, lights, etc.

* - Pumps - submersible pumps -
3 HP - 2,350 watts.
motor running - $3 \times 2,350 =$ [Rs 5,000
Rs 10,000]

motor start time
17.5 ~~watts~~ solar panel.

Solar charge controller.
↓
12.5 volts -
During daylight - surge.

During evenings & no sun light.
it won't charge solar panels.

web based Siasa

↓
Computer - PC

- regulate voltage
eg ^{set} to low 220 voltage

P.C.U - can ~~increase~~ ^{increase} parameters.
in P.C.

Input. etc.

"Sukam" Battery is maintenance free.
for 1KVA - P.C.U.
2 nos of 12 V/A each.

Warranty : 2 yrs on P.C.U.
: 15 months.

Backup -
3 Hours.

$$2 \text{ KW} = \frac{2,500 \text{ VA}}{2.5 \text{ KVA}}$$

Su - kan.

h

21/8/11

Solar power.

* PCU (power control unit).

2kVA - PCU = 45,000/-

Solar panel - Rs. 125 / watt.

Battery - Gel type - . Rs. 20/- per
2Vohm * 1 AH.

200 A x ~~1~~²⁰ = 1 battery = 4000/-

1000 WSP +
500 WSP +

22/8/11

Sukam

- a) 1,000 watts - solar panel.
- 2) Power Conditioning Unit - P.C.U.
- 3) Battery & 3 Hour backup.

KVA
500 - 2 KW.
(2,000 KVA)

- 1 KW
- P.C.U
- ~~Battery~~ Battery

VSC - B.no 18
or 81.

11kv
2kv 7 miles

Sat. - Dec. 18, 2010

20w - 70w
LED
LED

12,500 - 70w - LED
Sukam equivalent

Conditioning
'Sukam' - Power Control Unit.
(PCU)

In Solar Panels. 4
Sukam Power

DB
PCU
Pure board

Moobarbaer
Total BP
7 PV

In PCU - in built Inverter & battery charger?

Inverter - cost?
external - extended to
charge & store
battery.

Wed 1 Pm
afternoon - tech!

PCU
quotes for

Warranty: - 2 yrs - PCU.
extended - 3 yrs - per yr.
warranty + ATAC.

1 KVA
& 2 KVA

for common
intention like fan.
may be geyser

★ - cut off parameter - for us

Menu Incl. - Mahesh Desai

for pump -
P.C.U. - for 1 HP pump.
simpler, cheapest Rs.
+ farmers

Not pumps?
Mahesh Desai

for
SPM

Costing calculation:

1 Kw System ,4 hrs solar power backup

Effective hours of sunlight is considered 5 hrs

				MODULE	Rs/wp	INR 100.00
S.no	Item Description	Model No.	Qty	Unit	Unit Price	Total
1	Solar Module 800 Wp	800	1	Nos	100.00	80,000.00
2	Battery tubular 150 Ah /24 V	12V/150Ah	2	Nos	8,445.00	16,890.00
3	Solar PCU 1000va//24V	1Kva/24V	1	No	15,500.00	15,500.00
4	Solar charge Controller 12-48 V /20Aamp	12-48V/20A	1	No	-	-
	Mod mou legs		1			8,000.00
5	Battery Rack		1		-	2,000.00
	Sub_total					122,390.00
	A. Inventory Costs		Percentage	Amount		
	1. Carrying Costs		1.00%			1,223.90
	2. Handling Costs		1.0%			1,223.90
	3. Packaging		1.0%			1223.90
	B. Distributor margin		15%			18,358.50
	Installation cost		8.00%			9,791.20
	2. Transit Insurance		0.50%			611.95
	C. Warranty Expenses		3%			3671.70
	Sub-Total					158,495.05
	Margin to Company		15%			23,774.26
	Sub-Total					182,269.31
	vat Tax		5%			9,113.47
	Total					191,382.77

PC – 1 No or TV – 1 No

3 Tube Lights and 3 Fans for 7 to 8 hours Backup

total load 700 watt

Approved By :

Date of Approval :

Gaurang

From: "Breakeven Technologies" <breakeventech@gmail.com>
To: <gaurang@modiproperties.com>
Sent: Wednesday, December 15, 2010 4:17 PM
Attach: Costing for centralized system 15 dec hyderabad- Copy.xls
Subject: Fwd: FW: Costing for centralized system 15 dec hyderabad- Copy

----- Forwarded message -----

From: Raja Gopal <rgopal@su-kam.com>
Date: Wed, Dec 15, 2010 at 4:08 PM
Subject: FW: Costing for centralized system 15 dec hyderabad- Copy
To: breakeventech@gmail.com

Dear Sir,

Fyi..

Regards
 Rajagopal.K

From: Bettaswamy Gowda
Sent: Wed 12/15/2010 3:44 PM
To: Raja Gopal
Cc: Vijay.cr
Subject: Costing for centralized system 15 dec hyderabad- Copy

<<Costing for centralized system 15 dec hyderabad- Copy.xls>> Mr.Rajgopal,

Pl see the attached costing for your info

Thanks/BSGOWDA

"This e-mail message may contain confidential, proprietary or legally privileged information. It should not be used by anyone who is not the original intended recipient. If you have erroneously received this message, please delete it immediately and notify the sender. The recipient acknowledges that Su-Kam Power Systems Limited, are unable to exercise control or ensure or guarantee the integrity of/over the contents of the information contained in e-mail transmissions and further acknowledges that any views expressed in this message are those of the individual sender and no binding nature of the message shall be implied or assumed unless the sender does so expressly with due authority of Su-Kam Power Systems Limited. Before opening any attachments please check them for viruses and defects."

--
 A.Srinivas
 for
 Breakeven Technologies
 9490746336
 9246208036
 66485188

15-Dec-10

Costing calculation:

1 Kw System ,4 hrs solar power backup

S.no	Item Description
1	Solar Module 800 Wp <i>800 watts power solar panel</i>
2	Battery tubular 150 Ah /24 V
3	Solar PCU 1000va//24V ✓
4	Solar charge Controller 12-48 V /20Aamp ✓ Mod mou legs
5	Battery Rack
	Sub_total
	A. Inventory Costs
	1. Carrying Costs
	2. Handling Costs
	3. Packaging
	B. Distributor margin
	Installation cost
	2. Transit Insurance
	C. Warranty Expenses
	Sub-Total
	Margin to Company
	Sub-Total
	vat Tax
	Total

Approved By :

Effective hours of sunlight is considered 5 hrs

		MODULE		Rs/wp	INR 100.00
Model No.	Qty	Unit	Unit	Total	
			Price		
800	1	Nos	100.00	80,000.00	
12V/150Ah	2	Nos	8,445.00	16,890.00	
1Kva/24V	1	No	15,500.00	15,500.00	
12-48V/20A	1	No	-	-	
	1			8,000.00	
	1			2,000.00	
				122,390.00	
	Percentage	Amount			
	1.00%			1,223.90	
	1.0%			1,223.90	
	1.0%			1223.90	
	15%			18,358.50	
	8.00%			9,791.20	
	0.50%			611.95	
	3%			3671.70	
	15%			158,495.05	
				23,774.26	
				182,269.31	
	5%			9,113.47	
				191,382.77	

Date of Approval :

PC - 1 No or TV - 1 No
3 Tube Lights and 3 Fan

total load 700 watt

10 yrs - warranty -
Solar Panel
System - 2 yrs
batteries - 2 yrs
Lead acid.

quote not clear
Let me give clear quote - by
to come in Friday
@ 2 pm
Mr. Sahar
15/12/10

is for 7 to 8 hours Backup



5-7 yrs

for Solar Panel

2yrs warranty
Power pack unit
(P.C.U.)

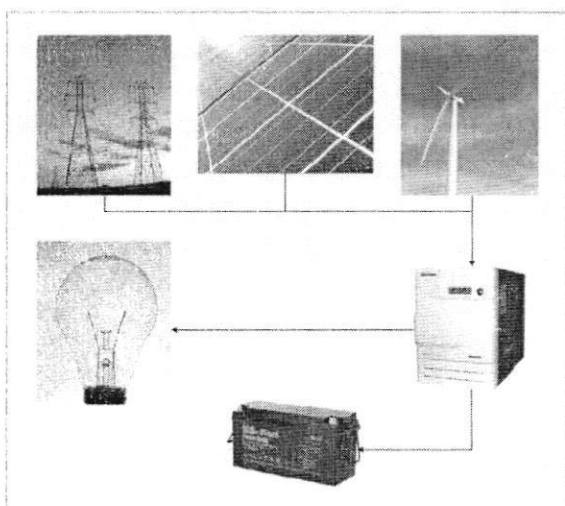


Photo voltaic

Su-Kam

Su-Kam Power Systems Limited

34, Uday Vinay Prasad - VI, Sector - 31,
Gurgaon - 122 001 (Haryana) India
Tel: 91-124-4170535, 4170100, 4030700, Fax: 91-124-4038700
e-mail: info@su-kam.com, website: www.su-kam.com
SIN: SUKAVI to 57001

ISO 9001:2000 ISO 14001:2004 CE

Su-Kam
powered by innovation

Solar Power Conditioning Unit

FEATURES

- It can be charged by Grid, Mains.
- Priority of charging is Solar.
- Over heating Protection
- Dual Display showing PV % Inverter output.
- Short Circuit & Over Load Protection
- Inbuilt Heavy Duty Solar Charge Controller.
- No Load Shut Down for load $\leq 5\%$
- Fully equipped with powerful Grid Charger.
- User friendly client and Web based Software

1 KVA, 2 KW to 6 KW

www.su-kam.com

Call Su-Kam's representative to get-
best supply

Interested! - 1KVA, 2KW to 6KW.
meeting on Wed - with Mr. Sharma
Su-Kam person to come Wed, after 1pm
13/12/10 & 14/12/10
13/12/10

Technical Specifications

INVERTER OUTPUT POWER 100W-450W DC	
Wave form type	Sine wave
Technology	PWM (pulse width mod)
Output voltage in Vrms (AC)	230 V ± 5%
Output frequency in Hz	50 ± 1% ± 1
Operating temperature	-5 to +40 °C
Humidity	0 to 95% RH
Efficiency	Typical 85% on resistive load 80-100%
Distortion (THD)	<1% on linear load
Forced ventilation	Taru Cooling Fan
Nominal input voltage (DC)	24V
Battery low voltage warning (VDC)	21.6V ± 0.4V
Low Voltage Disconnect	To be provided through DC MCB
Input Terminal Reverse protection, No Battery	No load shut down to load < 10s
No Load Error	100% for 4 times & permanent cut out OFF
Short Circuit protection	100% for 5 times & permanent cut out OFF
Over load warning	> 80% ± 1%
Over Load Protection	Grid power connected to load when battery voltage > 23.6 ± 0.4
Over Heating protection	Battery charging low place by grid power if it is available in specified range
Grid Charging and By-pass Mode	
Grid VP Range	
Wide Window Range	
Grid low cut	175VAC ± 10V
Grid low cut recovery	185VAC ± 10V
Grid high cut	175VAC ± 10V
Grid high cut recovery	185VAC ± 10V
Narrow Window Range	
Grid low cut	205VAC ± 10V
Grid low cut recovery	205VAC ± 10V
Grid high cut	205VAC ± 10V
Grid high cut recovery	205VAC ± 10V
Grid charging current (A) (VP)	1.2A ± 1A
Change over time	Grid charging stop when battery reaches 27.2V ± 0.4V and transfer to backup mode. Trans to backup mode in wide window range < 40 milliseconds Trans to backup mode in narrow window range < 15 milliseconds Backup to Main mode < 15 milliseconds
Solar Charge Controller	
Type	Series Regulator Common Negative
Maximum PV PV Voltage	25V Per 12V Solar Panel
Short Area	Single Array
Charging Current (max)	> 40A
B.V. Voltage	28.4V
Adjustable Bulk Voltage	26.4V to 28.4V
Absorption Period	Hold battery voltage at bulk setting for a cumulative period of 1 hour
Float Voltage	27V
Protection	Over Current, Battery over Charge Protection, Inverter Reverse Polarity, Reverse Current, Low High Temperature
Automatic Charger Reset Time after High Current	3-5 Minutes
Solar Charge Controller Power	27VDC @ 40Amps
Minimum PV Voltage for night	< 1V (in sample there is only 1 indication)
Maximum PV Voltage for day	> 6V (in sample there is only 1 indication)
Solar Charge Controller to PV power connection time	< 100ms
Display	PV voltage, Battery voltage, Battery low, grid charging, Output Voltage, Overload, short circuit, MCB trip, Charging Current, Daylight mode, Wide window & Narrow window mode
Operating Temp	7°C to +45°C
Storage Temp	2°C to +55°C
Acoustic Noise	< 50dB
PCU Weight	215 Kg
PCU dimensions	450 x 345 x 305

Specifications are subject to change without prior notice

Technical Specifications

Single Phase Solar Power Conditioning Unit	
DSP Based PWM Technology	
Model No.	20W PCUK48
Model No.	30W PCUK46
Model No.	40W PCUK46
Model No.	50W PCUK46
INPUT PARAMETERS	
Nominal IP Voltage	48V
Input Voltage Range	64-120V
OUTPUT PARAMETERS	
Voltage Regulation	230 ± 2% ± 110V ± 2%
Frequency Regulation	50Hz ± 0.5Hz
Efficiency	> 87%
Output Waveform	Pure Sine Wave
THD	< 3% (on Linear Load)
Power Factor	> 0.9
GRID CHARGER	
Grid VP Voltage Range	168VAC-200VAC
Charging Current	1.25Amp ± 150g
BATTERY CHARGE CONTROLLER	
Type	Series Regulator Common Negative
Maximum PV PV Voltage	25V Per 12V Solar Panel
Short Area	Single Array
Charging Current (max)	> 40A
B.V. Voltage	28.4V
Adjustable Bulk Voltage	26.4V to 28.4V
Absorption Period	Hold battery voltage at bulk setting for a cumulative period of 1 hour
Float Voltage	27V
Protection	Over Current, Battery over Charge Protection, Inverter Reverse Polarity, Reverse Current, Low High Temperature
Automatic Charger Reset Time after High Current	3-5 Minutes
OTHER SPECIFICATIONS	
Indicators	Indicators for PV voltage, Battery voltage, Output Voltage, Output Frequency, Output Current, Charging Current, Charging Mode, High Temp., High Current, Any Reverse Polarity etc.
Operating Temp	0°C to +45°C
Storage Temp	0°C to +55°C
Acoustic Noise	< 50dB
Relative Humidity	0-95% Non-Condensing

Specifications are subject to change without prior notice