

INTELLIGENT POWER DISTRIBUTION UNIT (iPDU)



Installation & Operation Manual

75/100/150/225 kVA 20/05/2013 Ver. 6.0





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1. Safety Instructions

This manual contains important instructions that must be followed during operation and maintenance of the equipment.

WARNING: Opening enclosures expose hazardous voltage. Always refer service to qualified personnel only.



WARNING: As standards, specifications, and designs are subject to change, please ask for confirmation of the information given in this publication.

MARNING: To reduce the risk of fire or electric shock, install in a controlled indoor environment free of conductive contaminants. This equipment is intended only for installations in a RESTRICTED ACCESS LOCATION.

WARNING: HIGH LEAKAGE CURRENT. Earth connection is important before connecting supply.

Product Safety

- Hardwiring of iPDU should be performed by Qualified Service Personnel only.
- A protection circuit breaker must be installed upstream and be easily accessible.



2. Site Conditions

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Ensure the iPDU is installed in a controlled environment as specified below.

• Install the iPDU indoors only.

iPDU

- Install the iPDU away from direct sunlight and away from objects which give off excessive heat.
- Allow 0.6 meters side (either left or right) clearance for input cable termination for all models.
- For iPDU models, allow minimum 0.6 meters front & rear clearance for routine maintenance
- For iPDU-TX (with build in Transformer) model, allow 1 meter front & rear clearance for routine maintenance.
- If rear clearance is not permitted, please allow minimum 0.6 meters side (either left or right) clearance for routine maintenance for all models.



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<u>iPDU-TX</u>





3. Important Installation Instructions

- 3.1 Install the iPDU in a vertical upright position.
- 3.2 Ensure floor structure is able to withstand iPDU weight.
- 3.3 Leveling Jacks

Use the leveling jacks on the iPDU to prevent the iPDU from tilting when place on an elevated platform.

Once the iPDU is in its final position, the leveling jacks on all four corners should be lowered to keep the iPDU securely in place.

3.4 Cable Landing

The iPDU can be mounted on a raised or solid floor. Conduit landings are provided for bottom cable entry.

3.5 Power Supply

Ensure the power supply is in accordance with the table below.

Power	Input Voltage	Input Current	AVG (mm²)
(kVA)	(V)	(A)	
75	480 / 400 / 380 / 208	92 / 110 / 116 / 213	22 / 30 / 30 / 100
100	480 / 400 / 380 / 208	123 / 147/ 155 / 283	38 / 60 / 60 / 150
150	480 / 400 / 380 / 208	184 / 221 / 232 / 425	80 / 100 / 100 / 250
225	480 / 400 / 380 / 208	276 / 331 / 348 / 638	125 / 200 / 200 / (150x2)

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Voltage/Current/Cable Size recommendation table





4. System Overview

The intelligent Power Distribution Unit (iPDU) serves as a power distribution centre suitable with all types of non-linear loads. The system is equip with colour LCD touch screen display and can measure up to 168 distributed MCBs in the distribution panelboards.

Two types of systems available with various rating from 75kVA to 600kVA -

- a) iPDU
- b) IPDU-TX (with built-in isolation transformer)

The system dimensions for iPDU and iPDU-TX are shown on the next pages.





<u>iPDU</u>

iPDU-TX

Ablerex is Power Converter

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4.1 iPDU Front View



А	7" Colour LCD Touch Screen Display
В	Emergency Power Off (EPO)

Note:

a) The actual layout and dimension are subject to change, depending on customer requirements and iPDU ratings.

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b) Please refer to as-built drawings for actual layout and dimension.





4.2 iPDU-TX Front View



- A Power Monitoring and Control Touch Screen Display
- B Emergency Power Off (EPO)

Note:

a) The actual layout and dimension are subject to change, depending on customer requirements and iPDU ratings.

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b) Please refer to as-built drawings for actual layout and dimension.





4.3 iPDU Bottom View







4.4 iPDU-TX Bottom View



Note:

- a) The actual layout and dimension are subject to change, depending on customer requirements and iPDU ratings.
- b) Please refer to as-built drawings for actual layout and dimension.





4.5 Location of major components for iPDU



1	Sub-Main Circuit Breaker	6	Control PCBs - Main Parameter
2	BCTB, Branch Current Monitor CTs strip		Measurement Board (MPMB) & Branch
3	42-Pole Distribution Panelboard		Current Measurement Board (BCMB)
4	Neutral Bus	Ø	Customer Input Terminal Block Connections
5	Ground Bus		

Note:

- a) The actual layout and dimension are subject to change, depending on customer requirements and iPDU ratings.
- b) Please refer to as-built drawings for actual layout and dimension.







1	Control PCBs -										
	Main Parameter Measurement Board (MPMB) & Branch Current Measurement Board (BCMB)										
2	Shunt Capacitor Trip Device (option)	6	Neutral Bus								
3	INPUT Main Circuit Breaker & Sub Main	Ø	Ground Bus								
	Circuit Breakers										
4	BCTB, Branch Current Monitor CTs strip	8	Fuse Block								
5	42-Pole Distribution Panelboard	9	Customer Input Terminal Block Connections								
	lata.										

Note:

- a) The actual layout and dimension are subject to change, depending on customer requirements and iPDU ratings.
- b) Please refer to as-built drawings for actual layout and dimension.









Note:

- a) The actual layout and dimension are subject to change, depending on customer requirements and iPDU ratings.
- b) Please refer to as-built drawings for actual layout and dimension.





5. Installation Procedures

Please follow the steps below for correct installation, and the sequence to be followed any time when the system is restarted or shut down completely with no power applied to the system.

- a) Ensure all input protection switches/breakers and branch breakers set to "OFF" position.
- b) Ensure all the fuses are in the fuse blocks and working normally.
- c) Remove the top two screws of the Access panel on the right side (Note: other designs is on the left) of the iPDU. Remove the Access panel.
- d) Remove the "openings stamped plate" located at the bottom of the iPDU.
- e) Connect input power cables to the Mains Power (mains) marked R, S, T (or R, S, T, N) and ensure phase sequence is correct.
- f) Ensure the input ground wire is securely connected to the receptacle marked GND.
- g) Connect the output power cables to the corresponding branch circuit breakers (note: the power cord – "L" (Live) must go through the corresponding CT, the N (Neutral) cord connects to the "N" terminal block.
- h) Ensure the output ground cable is securely connected to the terminal marked GND.
- i) Upon completed termination, ensure the openings stamped plate are cut to appropriate sizes to allow cables to route through and to cover the iPDU base. Trim the edges of the plate to prevent the sharp edges chafing the cables insulation.
- j) Ensure the right or left panels of the iPDU are covered and secured.
- k) Ensure the "openings stamped plate" is covered and secured.

Initial Startup

After completing the above "Check Before Startup", proceed as follows:

- a) Close the upstream circuit breaker.
- b) Close the main circuit breaker.
- c) Close the sub-main circuit breakers to the panelboard (for iPDU-TX model)
- d) Close individual output circuit breakers as required.

Checks After Startup

Normal operation of the iPDU should be verified immediately after the initial startup has been performed.



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Ratings	Voltage	Input	Sub-Main	No. of	Poles	Dimension	- W x D x H	Weigh	t (kg)
(kVA)	(V)	Breaker	Breaker			(m	m)		
		(A)	(A)	Standard	Optional	iPDU-TX	iPDU	iPDU-TX	iPDU
	480	125	60			1000 x	600 x 000		
75	400	150	80	Up to	Up to	900	(1000)* v	~620	280
75	380	150	80	84P	168P	(1200)* x	(1000) X	(710)**	(310)**
	208	250	125			2000	2000		
	480	150	80			1000 x	600 x 000		
100	400	200	100	Up to	Up to	900	(1000)* v	~750 (840)**	~320
100	380	200	100	84P	168P	(1200)* x	2000		(410)**
	208	350	200			2000	2000		
	480	225	125			1200 v	600 x		
150	400	300	150	Up to	Refer to	1200 x	1000 x		
150	380	300	150	168P	Note 1	2000	2000	~930	~430
	208	500	250			2000	2000		
	480	225	125			1200 v	600 v		
225	400	300	150	Up to	Refer to	1200 x	1000 x	1050	500
225	380	300	150	168P	Note 1	1200 X	2000 X	~1050	~500
	208	500	250			2000	2000		

5.1 Capacity

Note 1: Additional poles available upon request, up to 336 poles max.

Note 2 ()*: Depth for iPDU models with optional higher no. of poles.

Note 3 ()**: Weight for iPDU with optional higher no. of poles. All weight indicated are without built-in Isolation Transformer.





5.2 Specifications:

Input Voltage:	3Phase + G 208VAC, 380VAC, 400VAC, 480VAC , 60/50HZ
	(Rack mount: 3Phase+N 208/120VAC 380/220VAC 400/230VAC 480/277VAC)
Output Voltage:	3Phase + N 208/120VAC 380/220VAC 400/230VAC 480/277VAC · 60/50HZ
Transformer:	K Factor ISOLATION H Class Transformer (without rack)
Noise Attenuation:	50 decibels
Operating Temperature:	0°C ~ 40°C
Relative Humidity:	0% ~ 95%
Efficiency:	iPDU > 99.5%
	iPDU-TX > 98%
Grounding System	Equipment grounding, system grounding (with PC-class grounding and anti-static
	protection)
Communication Port	RS-422、 RS-485 、 TCP/IP
Cooling System	Force air cooling





6. Operating Procedures

6.1 Touch Screen Display

The main menu is a 7" touch screen display equipped with control panel and monitoring functions.







6.2 Data Measurement

The iPDU provides multiple data measurement parameters and statistical data for user analysis. Other features include "Setting" function (see 8. Setting Procedure) which allows user to configure the iPDU, communications function (see 8.3 Communication Interface) and "Reset" function (see 8.9 Reset Counter) which enables statistical data reset, re-computing and remote monitoring.

I) Input Power Display

- Input Voltage & Current
- Maximum & Average Input Voltage & Current
- R-phase input current harmonic distortion
- S-phase input current harmonic distortion
- T-phase input current harmonic distortion
- Input Frequency
- R-S phase input voltage harmonic distortion
- S-T phase input voltage harmonic distortion
- R-T phase input voltage harmonic distortion
- kW, kvar, kVA, kWH, KvarH, Cos∳
- Max. kW, kVA, kvar
- Input power factor
- Voltage / Current Waveform
- Voltage / Current Spectrum
- Demand & Max. Demand current, kW, kVA
- Transformer Temperature

II) Output Power Supply Monitoring

- Output line voltage
- Output phase voltage
- Output current harmonic distortion
- Output voltage harmonic distortion
- Output neutral line current
- Output phase current
- Output ground current
- KVA rating
- Output frequency





- Output power factor
- kW rating
- Max. output phase current rating
- kWH
- Max. kVA output rating
- Voltage / Current Waveform
- Voltage / Current Spectrum
- Maximum & Average Input Voltage & Current
- Demand & Max. Demand current, kW, kVA
- Isolation transformer temperature (iPDU-TX model only)
- Cabinet internal temperature

III) Branch circuit current monitoring (Panelboard 1 & 2)

- Current
- Average current display
- Maximum current display
- Current demand display
- Maximum current demand display
- kW
- kW Average
- kWH
- Power Factor
- kW demand capacity
- Maximum power demand capacity





7. Main Menu Display and Functions







A. Status Indicator Display

Status indicator display "Normal" and "Abnormal" status.



Click the status indicator to show the PMMS (iPDU) status.

	PMMS Status					
						Refresh
Item	Node	Descrip	otion			
1 2 3 4	Input Input#1 Main Breaker#1 Main Breaker#2	Voltage Voltage Voltage	e Interrupt e Interrupt e Interrupt e Interrupt			
Main Br	eaker#2 - Voltage Interrupt		SD Card	8%	Used	2013-01-24 09:05:20





B. Menu List

Click Menu to display the function list: Meter, Setting, Event Logs, About



C. Main Parameter Measurement (MPMB) Alarm & Branch Current Measurement Board (BCMB) Alarm

Click the Input#1 to view the Input#1 alarm status.



- D. PMMS Status Bar
- E. Display the SD Card Capacity.
- F. Display System Time.





7.1 Meter Menu

The meter menu allows user to view the various data measurement.

Click [Meter] from the menu list



7.2 Main Parameter Measurement Board (MPMB)

Click [Input] / [Input#1] / [Main Breaker#1] / [Branch#1] to view various parameters measurement.







7.2.1 Input / Input #1



The table below shows the measurement available for Input, Input#1 and Main breaker.

	Voltage & Current	Power	Waveform	Spectrum	Max. & Avg.	Demand & Max Demand	Chassis Temperature	Transformer Temperature
Input	1	1	1	1	1	1		
Input#1	1	1	1	1	1	1	1	1
Main Breaker	1	1	1	1	1	1		

7.2.2 Voltage & Current

Display three phase voltage and current parameters.

🔯 Meter Input - Voltage & Current						Θ	5	ا 🕥	O Meter Input#1 - Vo					k Curre	int		J		
Freq	60.00	Hz	THI	Dv				THD	i	Freq	0	Hz	TH	Dv				THE	Di
V 1	401.8	V	0.6	%	П	173.9	A	6.7	%	V12	0	V	0	%	П	0	A	0	%
V2	400.9	V	0.8	%	12	169.7	A	7.4	%	V23	0	V	0	%	12	0	Α	0	%
V3	399.1	V	0.7	%	13	172.1	A	7.2	%	V31	0	V	0	%	13	0	A	0	%
										V1	0	V	0	%	In	0	Α		
										V 2	0	V	0	%	Ig	0	mA		
										V3	0	v	0	%					
Input - V	oltage Interru	pt			SD Car	d 8 % Used	2	013-01-24 10	2:42:07	Main Break	##2 - Vo	Itage Inter	rupt	-	SD Card	8% Us	ed 20	13-01-24 1	0:43:15





7.2.3 Power

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Display three phase kW, kVA, kvar PF, CosΦ, kWh, kVAh and Kvarh parameters.

6	Meter	1	input - Pow	er	Θ 🕹		Meter	In	Θ	J		
	P (kW)	S (kVA)	Q (kvar)	PF	CosΦ		P(kW)	S (kVA)	Q (kvar)	PF	CosΦ	
Σ	115.7	119.4	2.4	0.979		Σ	0	0	0	0		
1	39.3	40.2	0.8	0.977	0.977 €	1	0	0	0	0	0	Ę
2	37.9	39.5	0.7	0.959	0.959 E	2	0	0	0	0	0	Ę.
3	38.5	39.7	0.9	0.969	0.969 E	3	0	0	0	0	0	E
	kWh	kVAh	kvarh				kWh	kVAh	kvarh			
Σ	0	0	0			Σ	0	0	0			
1	0	0	0			1	0	0	0			
2	0	0	0	laga s	87	2	0	0	0	-		
3	0	0	0	0	23.38 h	3	0	0	0	8	23.39 h	
Input#	1 - Voltage Inter	rupt	SD Car	d 8 % Used	2013-01-24 10:45:44	Input#	1 - Voltage Inter	mot	SD Can	d 8 % Used	2013-01-24 1	0:46:37

7.2.4 Waveform

Display the voltage or current waveform. Click the buttons on the left to view the desired voltage or current.

🙆 Meter	Input - Waveform 🛛 🔴 😺	🙆 Meter	Main Breaker#1 - Waveform 🛛 📔 😺
V12 I1		V12 I1 50 V23 I2 60 V31 I3 80 V1 In 3 V2 400 400 V3 13 100 V1 In 3 V2 400 400 V3 V3 400	
100 V/Div	5D Card 8 % Used 2013-01-24 10:50:16	150 V/Div	S0 Card 8 % Used 2013-01-24 10:51:35

The table shows the selectable voltage and current display in Input, Input#1 and Main Breaker.

	V12	V23	V31	V1	V2	V3	11	12	13	I _n
Input	~	~	~				~	~	~	
Input#1	~	~	~	~	~	~	~	~	~	~
Main Breaker	~	~	~	~	~	~	~	~	~	~





7.2.5 Spectrum

Display the voltage or current spectrum. Click the buttons on the left to view the desired voltage or current.

	Meter		Input	- Spectrum		Θ	J	٢	Meter		Main Break	er#1 - Sp	ectrum	Θ	5
V12	- 11	100%						V12	11	1075					
V23	12							V23	12		-				
V31	13							V31	13						
		10% -						V1		275					
								V2							
							-	V3			-				
THDI	6.7 %	-			18 17	14 20	3 3	THDV	0.6 %	~		9 II I	<u></u>	18 2	
Main Break	er#1 - Volt	age Inter	rupt	SD Card 8	6 Used	2013-01-2	24 10:56:02	Main Break	er#2 - Vol	tage 1	nterrupt	SD Card 8	96 Used	2013-01-	24 10:55:02

The table shows the selectable spectrum display in Input, Input#1 and Main Breaker.

	V12	V23	V31	V1	V2	V3	11	12	13
Input	1	1	1				~	1	1
Input#1	1	1	1	1	1	1	1	1	1
Main Breaker	1	1	1	1	1	1	1	1	1





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7.2.6 Max & Avg

Display the following maximum and average parameters.

- Frequency
- Three phase voltage
- Three phase current
- Three phase KW
- Three phase KVA
- Three phase Kvar

Click \blacktriangleleft or \blacktriangleright button to switch between pages.

	Meter		Input	t - M	lax. &	Avg.			J) N	1eter	Inp	ut - Max	. & Avg.		
	Avg.		Max.			Avg.		Max.		3		6.0		D (I		0.0	
Freq	60.01	Hz	60.54	Hz	11	173.9	A	176.1	A			5()	(VA)	P (1	KW)	Q()	(var)
V12	401.8	V	403.1	V	12	169.7	A	172.1	A			Avg.	Max.	Avg.	Max.	Avg.	Max.
V23	400.0	v	402.1	Ŷ	13	172.1	A	173.5	A		Σ	115.7	119.8	119.4	122.5	2.4	3.2
Val	200.2	v	401.2	v	15	1/2.1		1/5.5	1		1	39.3	41.1	40.2	41.1	0.8	1.2
151	399.3		401.2	Contract of							2	37.9	38.6	39.5	40.6	0.7	0.9
											3	38.5	40.1	39.7	40.8	0.9	1.1
						Swi	itch	PARK F				Switch pa	ge				

7.2.7 Demand & Max. Demand.

Display the following demand and maximum demand parameters.

- Three phase current
- Three phase KW
- Three phase KVA

🙆 Mete	er I	nput ·	De	mano	d &	Max. De	mand	0	🙆 Mete	er	Main	Brea M	akera ax. [#1)en	- Deman nand	d &	Θ	J
			De	eman	d	Max.						Der	man	d	Max.			
		П	17	3.9	Α	176.1	A				П	173	3.9	Α	176.1	A		
		12	16	9.7	Α	172.1	A			1	12	169	9.7	A	172.1	Α		
		13	17	2.1	Α	173.5	A				13	172	2.1	Α	173.5	A		
			S (k	VA)		P ()	(W)					S (k)	VA)		P (k	(W)		
	. de	Dem	and	Ma	х.	Demand	Max			- mar	Dema	and	Max	L	Demand	Max.		
1	Σ	119	.4	122	.5	115.7	119.8			Σ	119	.4	122.	5	115.7	119.8		
	1	40.	2	41.	1	39.3	41.1			1	40.	2	41.	1	39.3	41.1		
	2	39.	5	40.	6	37.9	38.6			2	39.	5	40.0	5	37.9	38.6		
	3	39.	7	40.	8	38.5	40.1			3	39.	7	40.1	8	38.5	40.1		
Main Breaker#2 - 1	Voltage I	Interrupt	t.	_	SD	Card 8 % t	ked 20	013-01-24 11:40:19	Main Breaker#1 -	Voltage	Interrupt			SD	Card 8 % 1	Ised 20	13-01-24	11:41:13



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7.2.8 Temperature

Display the cabinet temperature.



7.2.9 Transformer Temperature

Display the transformer (iPDU-TX only) temperature.









7.3 Branch Current Measurement Board (MCMB)

 Click [Branch #1] or [Branch #2] to view various parameters measurement.



> Click the individual parameter to view detailed information.

Branch#1		III	Meter	Branch#2		1
	Current	1	kW		Current	l
	Current Avg.		kW Arg.	100001	Current Avg.	
kWh	Current Max.		kW Max.	kWh	Current Max.	
PF	Current Demand		kW Demand	PF	Current Demand	
	Max. Current Demand		Max. Power Demand		Max. Current Demand	
	Branch#1	Branch#1	Branch#1	Branch#1 Meter KWh Current Avg. KWh Current Max. PF Current Demand Max. Current Demand Max. Power Demand	Branch#1 Image: Second sec	Branch#1 Image: Second sec





7.3.1 Current

Display each branch circuit's real-time current.

C	M (1et	er		В	ranch#	1 -	Curren	t	6	9				Met	er		B	ranch#:	2 -	Curren	1999	6	9	J
01	19.	23	08	19.37	16	19.51	22	19.65	29	19.79	36	19.93	0	1	20.07	06	20.21	16	20.35	22	20.49	29	20.63	36	20.77
02	19.	25	09	19.39	16	19.53	28	19.67	30	19.81	37	19.95	0	2	20.09	09	20.23	16	20.37	28	20.51	30	20.65	37	20.79
08	19.	27	10	19.41	17	19.55	24	19.69	31	19.83	38	19.97	0	8	20.11	10	20.25	17	20.39	24	20.53	31	20.67	38	20.81
04	19.	29	11	19.43	18	19.57	25	19.71	32	19.85	39	19.99	0	4	20.13	11	20.27	18	20.41	25	20.55	32	20.69	39	20.83
05	19.	31	12	19.45	19	19.59	26	19.73	33	19.87	40	20.01	0	5	20.15	12	20.29	19	20.43	26	20.57	33	20.71	40	20.85
06	19.	33	16	19.47	20	19.61	27	19.75	34	19.89	41	20.03	0	6	20.17	18	20.31	20	20.45	27	20.59	34	20.73	41	20.87
07	19.	35	14	19.49	21	19.63	28	19.77	35	19.91	42	20.05	0	7	20.19	14	20.33	21	20.47	28	20.61	35	20.75	42	20.89
Main	Breaker	#1 -	Volt	tage Interru	pt:		SD	Card 8 %	Us	d 2013	01-	24 11:50:00	Inp	util	1 - Voltag	e In	terrupt	-		SD	Card 8 %	Usr	d 2013	01-7	4 11:54:06

7.3.2 Current Avg.

Display each branch circuit's average current.

	M	ete	i	В	rar	1 - 1 -	Cu	irrent A	vg.		9		6) Met	er	- В	rar	nch#1 -	Cu	rrent A	vg		0	J
01	19.2	3 06	19	.37	16	19.51	22	19.65	29	19.79	36	19.93	01	19.23	08	19.37	16	19.51	22	19.65	29	19.79	36	19.93
02	19.2	5 09	19	.39	16	19.53	28	19.67	30	19.81	37	19.95	02	19.25	09	19.39	16	19.53	28	19.67	30	19.81	37	19.95
08	19.2	7 10	19	.41	17	19.55	24	19.69	31	19.83	38	19.97	03	19.27	10	19.41	17	19.55	24	19.69	31	19.83	38	19.97
04	19.2	9 11	19	.43	16	19.57	25	19.71	32	19.85	39	19.99	04	19.29	11	19.43	18	19.57	25	19.71	32	19.85	39	19.99
06	19.3	1	19	.45	19	19.59	26	19.73	33	19.87	40	20.01	06	19.31	12	19.45	19	19.59	26	19.73	33	19.87	40	20.01
06	19.3	3 16	19	.47	20	19.61	27	19.75	34	19.89	41	20.03	06	19.33	18	19.47	20	19.61	27	19.75	34	19.89	41	20.03
07	19.3	5 14	19	.49	21	19.63	28	19.77	36	19.91	42	20.05	07	19.35	14	19.49	21	19.63	28	19.77	35	19.91	42	20.05
Main	Breaker#	12 - Vo	Itage 1	nterru	pt.		SD	Card 8 %	Us	d 2013	01-	24 11:57:15	Main	Breaker#2	Vo	Itage Intern.	pt		SD	Card 8 %	Us	sd 2013-	01-2	4 11:57:15

7.3.3 Current Max.

Display each branch circuit's maximum current.

C) Met	er	В	ran	ch#1 -	Cu	rrent M	ax.		9	J			Met	er	В	ran	ch#2 -	Cu	rrent M	ax.)	J
01	19.48	08	19.62	15	19.76	22	19.90	29	20.04	36	20.18	0	1 2	0.32	08	20.46	15	20.60	22	20.74	29	20.88	36	21.02
02	19.50	09	19.64	16	19.78	28	19.92	30	20.06	37	20.20	06	2 2	0.34	09	20.48	16	20.62	28	20.76	30	20.90	37	21.04
03	19.52	10	19.66	17	19.80	24	19.94	31	20.08	38	20.22	0	3 2	0.36	10	20.50	17	20.64	24	20.78	31	20.92	38	21.06
04	19.54	11	19.68	18	19.82	26	19.96	32	20.10	39	20.24	0	4 2	0.38	11	20.52	18	20.66	26	20.80	32	20.94	39	21.08
05	19.56	12	19.70	19	19.84	26	19.98	33	20.12	40	20.26	0	5 2	0.40	12	20.54	19	20.68	26	20.82	33	20.96	40	21.10
06	19.58	18	19.72	20	19.86	27	20.00	34	20.14	41	20.28	0	6 2	0.42	16	20.56	20	20.70	27	20.84	34	20.98	41	21.12
07	19.60	14	19.74	21	19.88	28	20.02	35	20.16	42	20.30	0	72	0.44	14	20.58	21	20.72	28	20.86	35	21.00	42	21.14
Input	#1 - Voltag	e Ini	ternupt			SD	Card 8 %	Usi	d 2013	01-	24 11:59:46	Inp	法样 1	- Voltag	e In	terrupt	-		SD	Card 8 %	Use	d 2013-	01-2	4 11:59:29



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7.3.4 kW

Display each branch circuit's real power.

C) Me	ter			Branch	#1	- kW		(0	J	C	Me	ter			Branch	#2	- kW		(C	J
01	4.43	08	4.05	16	4.26	22	4.16	29	4.18	36	4.08	01	4.29	06	4.19	15	4.43	22	4.05	29	4.26	36	4.16
02	4.18	09	4.08	16	4.29	28	4.19	30	4.20	37	4.11	02	4.01	09	4.22	16	4.18	28	4.08	30	4.29	37	4.19
03	4.20	10	4.11	17	4.01	24	4.22	31	4.37	38	4.14	03	4.04	10	4.25	17	4.20	24	4.11	31	4.01	38	4.22
04	4.37	11	4.14	18	4.04	26	4.25	32	4.05	39	4.17	04	4.07	11	4.28	18	4.37	25	4.14	32	4.04	39	4.25
05	4.05	12	4.17	19	4.07	26	4.28	33	3.99	40	4.20	05	4.10	12	4.31	19	4.05	26	4.17	33	4.07	40	4.28
06	3.99	18	4.20	20	4.10	27	4.31	34	4.02	41	4.23	06	4.13	13	4.34	20	3.99	27	4.20	34	4.10	41	4.25
07	4.02	14	4.23	21	4.13	28	4.43	35	4.05	42	4.26	07	4.16	14	4.37	21	4.02	28	4.23	35	4.13	42	4.28
Input	#1 - Volta	pe Ini	terrupt	_		SD	Card 8 %	Use	d 2013	01-7	4 13:25:41	Main	Breaker#2	- Vol	tage Interru	pt	1	SD	Card 8 %	Use	d 2013	01-2	4 13:27:55

7.3.5 kW Avg.

Display each branch circuit's average real power.

) Me	ter		Br	ranch#	1 -	kW Avg)	3) Me	ter		Br	anch#2	2 - 1	kW Avg	-)	3
01	4.43	08	4.05	16	4.26	22	4.16	29	4.18	36	4.08	01	4.29	08	4.19	16	4.43	22	4.05	29	4.26	36	4.16
02	4.18	09	4.08	16	4.29	28	4.19	30	4.20	37	4.11	02	4.01	09	4.22	16	4.18	28	4.08	30	4.29	37	4.19
03	4.20	10	4.11	17	4.01	24	4.22	31	4.37	38	4.14	03	4.04	10	4.25	17	4.20	24	4.11	31	4.01	38	4.22
04	4.37	11	4.14	16	4.04	25	4.25	32	4.05	39	4.17	04	4.07	11	4.28	18	4.37	25	4.14	32	4.04	39	4.25
05	4.05	12	4.17	19	4.07	26	4.28	33	3.99	40	4.20	05	4.10	12	4.31	19	4.05	26	4.17	33	4.07	40	4.28
06	3.99	18	4.20	20	4.10	27	4.31	34	4.02	41	4.23	06	4.13	16	4.34	20	3.99	27	4.20	34	4.10	41	4.25
07	4.02	14	4.23	21	4.13	28	4.43	35	4.05	42	4.26	07	4.16	14	4.37	21	4.02	28	4.23	35	4.13	42	4.28
Main	Breaker#2	- Vol	tage Intern	.pt		SD	Card 8 %	Use	d 2013	01-2	M 13:29:23	Main	Breaker#1	- Vo	tage Intern	#pt	· .	SD.	Card 8 %	Use	d 2013	01-2	4 13:30:03

7.3.6 kW Max.

Display each branch circuit's maximum real power

C	Me	ter		Br	anch#1	- 1	kW Max		()	3	6	Me	ter		Br	anch#2	2 - 1	(W Max	•	()	J
01	9.94	08	9.05	16	9.44	22	9.14	29	9.15	36	8.85	01	9.22	06	8.98	15	9.41	22	8.53	29	8.94	36	8.66
02	9.40	09	9.10	16	9.48	28	9.22	30	9.17	37	8.89	02	8.64	09	9.02	16	8.86	28	8.61	30	8.98	37	8.70
03	9.43	10	9.14	17	8.88	24	9.27	31	9.51	38	8.98	03	8.69	10	9.06	17	8.92	24	8.66	31	8.37	38	8.78
04	9.78	11	9.23	16	8.93	25	9.31	32	8.84	39	9.02	04	8.72	11	9.14	18	9.26	25	8.69	32	8.46	39	8.82
05	9.08	12	9.27	19	8.97	26	9.39	38	8.68	40	9.06	05	8.81	12	9.19	19	8.55	26	8.78	33	8.50	40	8.86
06	8.93	18	9.31	20	9.05	27	9.44	34	8.72	41	9.15	06	8.86	13	9.22	20	8.45	27	8.82	34	8.53	41	8.82
07	8.97	14	9.40	21	9.10	28	9.67	35	8.81	42	9.19	07	8.89	14	9.31	21	8.49	28	8.86	35	8.62	42	8.86
Main	Breaker#1	- Vol	tage Intern.	pt	-	SD	Card 8 %	Use	d 2013	01-2	4 13:31:58	Main	Ereaker#2	- Vol	tage Interru	5g	1	SD	Card 8 %	Use	d 2013	01-2	4 13:32:45





7.3.7 Power Factor

Display each branch circuit's power factor.

C) Me	ter			Branct	1#1	l - PF			9	J		C	Met	ter			Branct	n#2	? - PF		6	0	J
01	0.994	08	0.905	16	0.944	22	0.914	29	0.915	36	0.885	C	11	0.922	06	0.898	16	0.941	22	0.853	29	0.894	36	0.866
02	0.940	09	0.910	16	0.948	28	0.922	30	0.917	37	0.889	0	12	0.864	09	0.902	16	0.886	28	0.861	30	0.898	37	0.870
08	0.943	10	0.914	17	0.888	24	0.927	31	0.951	38	0.898	C	03	0.869	10	0.906	17	0.892	24	0.866	31	0.837	38	0.878
04	0.978	11	0.923	18	0.893	25	0.931	32	0.884	39	0.902	e)4	0.872	11	0.914	18	0.926	25	0.869	32	0.846	39	0.882
05	0.908	12	0.927	19	0.897	26	0.939	38	0.868	40	0.906	Q)5	0.881	12	0.919	16	0.855	26	0.878	33	0.850	40	0.886
06	0.893	16	0.931	20	0.905	27	0.944	34	0.872	41	0.915	C)6	0.886	16	0.922	20	0.845	27	0.882	34	0.853	41	0.882
07	0.897	14	0.940	21	0.910	28	0.967	36	0.881	42	0.919	C	97	0.889	14	0.931	21	0.849	28	0.886	35	0.862	42	0.886
Main	Breaker#2	Vol	tage Intern	pt.	-	SD	Card 8 %	Us	d 2013	01-	24 13:43:41	Ma	ín 1	Breaker#1	Vo	tage interru	pt.		SD	Card 8 %	Use	d 2013	01-7	4 13:46:23

7.3.8 kWh

Display each branch circuit's kWh.

0	Mete	r	В	ran	ch#1 - k	Wh		C) 🌙	6	Mete	r	В	ran	ch#2 - k	Wh		C) 🌙
01	192.3	10	194.6	19	196.8	27	198.8	35	200.8	01	202.8	10	205.1	19	207.3	27	209.3	35	211.3
02	192.6	Ħ	194.8	20	197.1	26	199.1	36	201.1	02	203.1	Ħ	205.3	20	207.6	28	209.6	36	211.6
05	192.8	12	195.1	21	197.3	29	199.3	37	201.3	08	203.3	12	205.6	21	207.8	29	209.8	37	211.8
04	193.1	16	195.3	22	197.6	30	199.6	36	201.6	04	203.6	18	205.8	22	208.1	30	210.1	38	212.1
05	193.3	14	195.6	28	197.8	31	199.8	39	201.8	05	203.8	14	206.1	28	208.3	31	210.3	39	212.3
06	193.6	15	195.8	24	198.1	32	200.1	40	202.1	05	204.1	15	206.3	24	208.6	32	210.6	40	212.6
07	193.8	16	196.1	25	198.3	38	200.3	41	202.3	07	204.3	16	206.6	25	208.8	38	210.8	41	212.8
08	194.1	17	196.3	26	198.6	34	200.6	42	202.6	08	204.6	17	206.8	26	209.1	34	211.1	42	213.1
09	09 194.3 18 196.6 🔯						3429.42	h		09	204.8	18	207.1	0			3429.43	h	
Main B	reaker#2 - Ve	oltag	e Interrupt		SD Card	8.9	6 Used 2	013-0	1-24 13:51:20	Inputs	1 - Voltage I	nterre	upt		SD Card	8 5	6 Used 2	013-01	-24 13:52:00

7.3.9 Current Demand

Display each branch circuit's current demand.

6) Me	ter	Bra	ncl	h#1 - C	urr	ent Der	naı	nd 🚺	0) Me	te	r Bra	nc	h#2 - C	urr	ent Der	nai	nd 🧯	9	J
01	19.23	08	19.37	16	19.51	22	19.65	29	19.79	36	19.93	01	20.07	08	20.21	15	20.35	22	20.49	29	20.63	36	20.77
02	19.25	09	19.39	16	19.53	28	19.67	30	19.81	37	19.95	02	20.09	09	20.23	16	20.37	28	20.51	30	20.65	37	20.79
03	19.27	10	19.41	17	19.55	24	19.69	31	19.83	36	19.97	05	20.11	10	20.25	17	20.39	24	20.53	31	20.67	38	20.81
04	19.29	11	19.43	16	19.57	26	19.71	32	19.85	36	19.99	04	20.13	11	20.27	18	20.41	26	20.55	32	20.69	39	20.83
05	19.31	12	19.45	19	19.59	26	19.73	33	19.87	40	20.01	06	20.15	12	20.29	19	20.43	26	20.57	33	20.71	40	20.85
06	19.33	16	19.47	20	19.61	27	19.75	34	19.89	41	20.03	06	20.17	10	20.31	20	20.45	27	20.59	34	20.73	41	20.87
07	19.35	14	19.49	21	19.63	28	19.77	35	19.91	42	20.05	07	20.19	14	20.33	21	20.47	28	20.61	35	20.75	42	20.89
Input	#1 - Voltag	e Ini	terrupt			SD	Card 8 %	Usi	d 201	3-01-	24 13:53:24	Inpo	##1 - Volta	ge In	terrupt	-		SD	Card 8 %	Use	d 2013	01-2	4 13:54:00



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7.3.10 Max. Current Demand

Display each branch circuit's maximum current demand.

) Me	ter	В	ran	ich#1 - Der	Ma na	ıx. Curr nd	en	1	9	1	6		1et	er	В	ran	- ch#2 Der	Ma nai	ıx. Curr 1d	ent		Э	J
01	19.48	08	19.62	16	19.76	22	19.90	26	20.04	36	20.18	01	20.	32	08	20.46	15	20.60	22	20.74	29	20.88	36	21.02
02	19.50	09	19.64	16	19.78	28	19.92	30	20.06	37	20.20	02	20.	34	09	20.48	16	20.62	28	20.76	30	20.90	37	21.04
03	19.52	10	19.66	17	19.80	24	19.94	31	20.08	38	20.22	05	20.	36	10	20.50	17	20.64	24	20.78	31	20.92	38	21.06
04	19.54	11	19.68	18	19.82	26	19.96	32	20.10	39	20.24	04	20.	38	11	20.52	18	20.66	25	20.80	32	20.94	39	21.08
05	19.56	12	19.70	19	19.84	26	19.98	38	20.12	40	20.26	06	20.	40	12	20.54	19	20.68	26	20.82	33	20.96	40	21.10
06	19.58	18	19.72	20	19.86	27	20.00	34	20.14	41	20.28	06	20.	42	16	20.56	20	20.70	27	20.84	34	20.98	41	21.12
07	19.60	14	19.74	21	19.88	28	20.02	35	20.16	42	20.30	07	20.	44	14	20.58	21	20.72	28	20.86	35	21.00	42	21.14
Input	#1 - Volta	ge In	terrupt	_		SD	Card 8 %	Us	d 2013	-01-	24 13:55:17	Main	Breake	r#1-	Vol	tage Interru	pt	1	SD	Card 8 %	Use	d 2013	01-7	M 13:55:59

7.3.11 kW Demand

Display each branch circuit's real power demand.

) Me	ter	E	Brai	nch#1	k٧	V Dema	ind		0	J	6	Me	ter	8	irai	1ch#2 -	k٧	V Dema	Ind		9	J
01	4.43	08	4.05	16	4.26	22	4.16	29	4.18	36	4.08	01	4.29	08	4.19	15	4.43	22	4.05	29	4.26	36	4.16
02	4.18	09	4.08	16	4.29	28	4.19	30	4.20	37	4.11	02	4.01	09	4.22	16	4.18	28	4.08	30	4.29	37	4.19
03	4.20	10	4.11	17	4.01	24	4.22	31	4.37	38	4.14	03	4.04	10	4.25	17	4.20	24	4.11	31	4.01	38	4.22
04	4.37	11	4.14	16	4.04	25	4.25	32	4.05	39	4.17	04	4.07	11	4.28	18	4.37	25	4.14	32	4.04	39	4.25
05	4.05	12	4.17	19	4.07	26	4.28	33	3.99	40	4.20	05	4.10	12	4.31	19	4.05	26	4.17	33	4.07	40	4.28
06	3.99	18	4.20	20	4.10	27	4.31	34	4.02	41	4.23	06	4.13	13	4.34	20	3.99	27	4.20	34	4.10	41	4.25
07	4.02	14	4.23	21	4.13	28	4.43	35	4.05	42	4.26	07	4.16	14	4.37	21	4.02	28	4.23	35	4.13	42	4.28
Input	- Voltage	Inter	upt			SD	Card 8 %	Use	d 2013	01-7	M 13:57:11	Input	- Voltage I	interr	upt		1	SD	Card 8 %	Use	d 2013-	01-2	4 13:58:00

7.3.12 Max. Power Demand

Display each branch circuit's real maximum real power demand.

6	Me	ter	Brand	:h#	1 - Max	K. P	ower D	em	and 🧯	9	J	6	Me	ter	Brand	:h#	2 - Ma:	x. P	ower D	em	and)	3
01	9.94	08	9.05	16	9.44	22	9.14	29	9.15	36	8.85	01	9.22	06	8.98	15	9.41	22	8.53	29	8.94	36	8.66
02	9.40	09	9.10	16	9.48	28	9.22	30	9.17	37	8.89	02	8.64	09	9.02	16	8.86	28	8.61	30	8.98	37	8.70
03	9.43	10	9.14	17	8.88	24	9.27	31	9.51	38	8.98	03	8.69	10	9.06	17	8.92	24	8.66	31	8.37	38	8.78
04	9.78	11	9.23	16	8.93	25	9.31	32	8.84	39	9.02	04	8.72	11	9.14	18	9.26	25	8.69	32	8.46	39	8.82
05	9.08	12	9.27	19	8.97	26	9.39	38	8.68	40	9.06	05	8.81	12	9.19	19	8.55	26	8.78	33	8.50	40	8.86
06	8.93	18	9.31	20	9.05	27	9.44	34	8.72	41	9.15	06	8.86	13	9.22	20	8.45	27	8.82	34	8.53	41	8.82
07	8.97	14	9.40	21	9.10	28	9.67	36	8.81	42	9.19	07	8.89	14	9.31	21	8.49	28	8.86	35	8.62	42	8.86
Input	- Voltage I	rvterr	rupt	_		SD	Card 8 %	Use	d 2013	01-2	4 13:59:10	Input	#1 - Voltag	e In	terrupt			SD	Card 8 %	Use	d 2013	01-2	4 13:59:54





7.4 Menu Setup Illustration Table







8 Settings Procedure

The setting menu allows user to configure the iPDU, describes button operation and alarm list.

Click [Setting] from the menu list to setup the iPDU.



The below display screen appears when the iPDU is power up.

Login				Menu
1	2	3	4	← Backspace
5	6	7	8	Entor
9	0	- x -	:	Enter
Main Breaker#1 - Vo	oltage Interrupt	SD Car	d 8 % Used	2013-01-24 14:01:37

- > Key in password and click [Enter] to enter the Setting screen.
- If there is no password provided, leave the password box blank and click [Enter].







	Settings					Menu
	Structure	Configuration		S	et Alarm	
	Communication	Demand Subinterva	I	Bu:	zzer/Alarm	
	Reset Counter	Restore Factory Settir	ngs	F	Password	
	Language	Date/Time		Upda	ate Software	
	Sleep	Database				
Input#1 -	- Voltage Interrupt	SD Card	8%	Used	2013-01-24 1	4:01:58





8.1 Structure Setting

> Click [Structure] from the Settings menu to setup system structure.



- > Check the boxes to select the measurement point.
- Click [Exit] and a save dialog box will appear.
- Click [Y] to save settings.
- > Click [N] to exit without saving.







8.2 Configuration

> Click [Configuration] from the Settings menu to setup system.



- Click the button [Input], [Input#1], [Main Breaker#1], [Main Breaker#2]
- > Click the item to be modified.





Input the value and click [Enter].

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> Click [Save] to save the modified parameter value.







- > Upon successful saving, a dialog box "Set Succesfully" will appear.
- > Click [Exit] to return to the Setting screen.







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8.3 Set Alarm

During event failure, the status indicator will turn red and buzzer will sound the alarm to indicate abnormal status or alarm.

- 8.3.1 Alarm Setting for Main Parameter Measurement Board
 - Click [Set Alarm] from the Settings menu to setup alarm and warning level.



Click [Input] / [Input#1] / [Main Breaker #1] to set alarm

Settings	Set Ala	rm - Input		Setti	ngs Set Alarr	m - Input#1	
	Voltage	Current			Voltage	Current	🍟
	Frequency	THDy			Frequency	THDV	
					Temperature	Ground Current	1
Main Breaker#1 - Voltage	Internapt	SD Card 8 % Used	2013-01-24 14:13:10	Main Breaker#1	- Voltage Internupt	SD Card 8 % Used	2013-01-24 14:13:58

	Voltage	Current	Frequency	THDv	Temperature	Ground Current
Input	1	1	1	1		
Input#1	1	1	1	1	1	1
Main Breaker	1	1	1	1		





8.3.2 Voltage

> Set the alarm and warning level for voltage.

- The second sec	Set Input#1 - Alarm	Voltage		J
		Volts(V)	Delay(s)	
	Over-voltage Alarm	437	5	
	Over-voltage Warning	418	5	
	Under-voltage Warning	342	5	
	Under-voltage Alarm	323	5	
Main Bre	aker#1 - Voltage Interrupt SE)Card 8 % Used	1 2013-01-24 1	4:16:13

- Select the value to change.
- Input the value and click [Enter].







- > Click [Exit] and a save dialog box will appear.
- Click [Y] to save alarm setting and exit

	Set Input#1 - Alarm	Voltage		J							
		Volts(V)	Delay(s)								
	Over-volta	ave the settings ?	5								
	Over-voltage	No	5								
	Under-voltage Warning	342	5								
	Under-voltage Alarm	323	5								
Main Brea	Main Breaker#1 - Voltage Interrupt SD Card 8 % Used 2013-01-24 14:18:33										

8.3.3 Current

- > Set the alarm and warning level for current
- Repeat the above steps to change values.

	Set Input# Alarm	1 -	Current		J
			Amps(A)	Delay(s)	
	Over-current Alarm	144	5		
	Over-current Warnin	ng	132	5	
	Low-current Warnin	g	108	5	
Main Brea	aker#2 - Voltage Interrupt	SE	Card 8 % Used	2013-01-24 1	4:20:36





8.3.4 Frequency

- Set the alarm and warning level for Frequency.
- Repeat the above steps to change values.

	Set Input#1 - Frequ larm	ency	
		Hz	
	High Frequency Alarm	63	
	High Frequency Warning	g 62	
	Low Frequency Warning	j <u>5</u> 8	
	Low Frequency Alarm	57	
Main Breaker#	#2 - Voltage Interrupt SD Card	8 % Used 2013-01	-24 14:24:20

8.3.5 THDv

- > Set the alarm and warning level for THDv.
- > Repeat the above steps to change values.

	Set Input Alarm	#1	- THDv		J
			Volts(V)	Delay(s)	
	Over THDv Alarm		10	5	
	Over THDv Warnin	g	5	5	
Input#1	- Voltage Interrupt	S	Card 8 % Used	2013-01-24 1	4:25:54





8.3.5 Temperature

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- > Set the alarm and warning level for Temperature.
- Repeat the above steps to change values.

Set Input#1 - Temperature											
Temp.(℃) De											
Over Machine Temp. /	50	5									
Over Machine Temp. W	/arning	40	5								
Over Transfomer Temp	. Alarm	130	5								
Over Transfomer Temp.	110	5									
Main Breaker#2 - Voltage Interrupt	SD Card	8 % Used 20	13-01-24 14:26:55								

8.3.6 Ground Current

- > Set the alarm and warning level for Ground Current.
- Repeat the above steps to change values.

	Set Input#1 - Ground Current											
		Amps(mA)	Delay(s)									
	Over-current Alarm	1000	5									
	Over-current Warning	500	5									
		·										
Input - V	oltage Interrupt S	D Card 8 % Used	2013-01-24 1	14:27:46								





8.4 Alarm Setting for Branch Current Measurement Board

Click [Branch#1] / [Branch#2] from the Set Alarm menu to setup alarm and warning level for Branch current.



8.4.1 Enable Alarm

- > Enable alarm and warning level for Branch Current.
- Click [Enable Alarm]

Ala	et Br . rm	anch#1 -	Enable Al	arm		
⊡ 01	<mark>⊠ 08</mark>	⊡ 15	⊠ 22	<mark>⊠ 29</mark>	⊠ 36	
<mark>⊠ 02</mark>	⊠ 09	□ 16	<mark>⊠ 23</mark>	<mark>⊠ 30</mark>	⊠ 37	
⊠ 0 3	⊠ 10	□ 17	⊠ 24	⊠ 31	⊠ 38	
⊠ 04	□ 11	□ 18	⊠ 25	<mark>⊠ 32</mark>	⊠ 39	
⊠ 05	□ 12	□ 19	⊠ 26	⊠ 33	⊠ 40	
⊠ 06	⊠ 13	⊠ 20	⊠ 27	⊠ 34	□ 41	
⊠ 0 7	□ 14	⊠ 21	⊠ 28	⊠ 35	⊵ 42	
Sele	ct All			Deselect All		
Main Breaker#2	- Voltage Interru	.pt	SD Card 8 %	Used 2013-	01-24 14:31:01	

- Check the boxes besides the numbers to select the individual branch circuit breaker or click [Select All] to enable alarm function.
- > Uncheck the boxes to disable alarm function.
- > Click [Exit] and a save dialog box will appear.
- Click [Y] to save alarm setting.
- > Click [N] to exit without saving.



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Set Alarm		anch#1 -	Enable Al	arm			
⊡ 01	<mark>⊠ 08</mark>	⊡ 15	<mark>⊠ 22</mark>	<mark>⊠ 29</mark>	⊠ 36		
<mark>⊠ 02</mark>	⊠ 09	□ 16	<mark>⊠ 23</mark>	<mark>⊠ 30</mark>	⊠ 37		
⊠ 03	□ 10	Save	×.	⊠ 31	⊠ 38		
⊠ 04	□ 11	Do you want	to save the settings ?	<mark>⊠ 32</mark>	⊠ 39		
⊠ 05	⊡ 12			⊠ 33	⊠ 40		
⊠ 06	⊡ 13	⊠ 20	⊠ 27	<mark>⊠ 34</mark>	⊠ 41		
⊠ 0 7	□ 14	⊠ 21	⊠ 28	⊠ 35	⊠ 42		
Sele	ct All			Desel	ect All		
Main Breaker#2	- Voltage Interru	ıpt	SD Card 8 %	Used 2013-	-01-24 14:31:37		



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8.4.2 Over-Current Alarm

- > Set each branch circuit over-current alarm level.
- Select the value to change.

9	Se Ala	Branc	h#	1 - Ov (A	er-o mps	current)	: Ali	arm 🧲		3	
01	24.00	08	24.00	15	24.00	22	24.00	29	24.00	36	24.00
02	24.00	09	24.00	16	24.00	23	24.00	30	24.00	37	24.00
03	24.00	10	24.00	17	24.00	24	24.00	31	24.00	38	24.00
04	24.00	11	24.00	18	24.00	25	24.00	32	24.00	39	24.00
05	24.00	12	24.00	19	24.00	26	24.00	33	24.00	40	24.00
06	24.00	13	24.00	20	24.00	27	24.00	34	24.00	41	24.00
07	24.00	14	24.00	21	24.00	28	24.00	35	24.00	42	24.00
Main E	3reaker#2	- Volt	age Interru	ipt		SD (Card 8 %	Used	1 2013-	01-24	14:33:00

Input the value and click [Enter].







- > Click [Exit] and a save dialog box will appear.
- > Click [Y] to save alarm setting and exit

	Se Ala	et rm	Branc	:h#	1 - Ov (Ar	er-o nps	current)	Ala	arm 🧲		J
01	30.00	08	24.00	15	24.00	22	24.00	29	24.00	36	24.00
02	24.00	09	24.00	16	24.00	23	24.00	30	24.00	37	24.00
03	24.00	10	24.00	Save			×	31	24.00	38	24.00
04	24.00	11	24.00	\checkmark	Do you want 1	to save 1	he settings?	32	24.00	39	24.00
05	24.00	12	24.00	15	2 1.00	20	21.00	33	24.00	40	24.00
06	24.00	13	24.00	20	24.00	27	24.00	34	24.00	41	24.00
07	24.00	14	24.00	21	24.00	28	24.00	35	24.00	42	24.00
	S										
Main E	Breaker#2	- Volt	age Interru	ipt		SD (Card 8 %	Usec	2013-	01-24	4 14:35:12

8.4.3 Over-Current Warning

- > Set each branch circuit over-current warning level.
- > Repeat the above steps to change values.

Set Br Alarm				anc V	h#1 - Varnin	Ov g (#	er-curr \mps)	ent			J
01	22.00	08	22.00	15	22.00	22	22.00	29	22.00	36	22.00
02	22.00	09	22.00	16	22.00	23	22.00	30	22.00	37	22.00
03	22.00	10	22.00	17	22.00	24	22.00	31	22.00	38	22.00
04	22.00	11	22.00	18	22.00	25	22.00	32	22.00	39	22.00
05	22.00	12	22.00	19	22.00	26	22.00	33	22.00	40	22.00
06	22.00	13	22.00	20	22.00	27	22.00	34	22.00	41	22.00
07	22.00	14	22.00	21	22.00	28	22.00	35	22.00	42	22.00
					Set	: All					
Input	- Voltage I	nterru	ıpt			SD (Card 8 %	Used	1 2013-	01-24	14:36:03





8.4.5 Under-Current Alarm

- > Set each branch circuit under-current warning level.
- > Repeat the above steps to change values.

9	Se Ala	et rm	Bra	ancl	n#1 - (Ar	Und nps	ler-cur)	ren	t 🧯		J
01	0.50	08	0.50	15	0.50	22	0.50	29	0.50	36	0.50
02	0.50	09	0.50	16	0.50	23	0.50	30	0.50	37	0.50
03	0.50	10	0.50	17	0.50	24	0.50	31	0.50	38	0.50
04	0.50	11	0.50	18	0.50	25	0.50	32	0.50	39	0.50
05	0.50	12	0.50	19	0.50	26	0.50	33	0.50	40	0.50
06	0.50	13	0.50	20	0.50	27	0.50	34	0.50	41	0.50
07	0.50	14	0.50	21	0.50	28	0.50	35	0.50	42	0.50
	Set All										
Input	- Voltage I	nterru	upt			SD C	ard 8%	Usec	2013-	01-24	14:36:58

8.4.6 Delay Time Alarm

- > Set each branch circuit delay time warning level.
- > Repeat the above steps to change values.

Se Alar	t Branch#1 - m	Delay	Time	
			Delay(s)	
	Over-current Al	arm	5	
	Over-current Wa	rning	5	
	Low-current War	ning	5	
Main Breaker#2 -	Voltage Interrupt	SD Card 8	3 % Used 2	013-01-24 14:38:11





8.5 Communication

The iPDU allows user to communicate via RS-485 or Ethernet connection.

- Click [Communication] from the Settings menu to setup system communication.
- Select [Disable] from the drop down list to disable system communication

1 m	Settings	Commun	ication	
	Com	munication	Disable	- 🔰
		ID	1	
	Commu	nication Type	RS-485	~
	Ba	ud Rate	57600	*
Commu	unication interrupt			2013-05-23 13:20:22





- Select [Enable] from the drop down list to enable system communication via RS-485 or Ethernet connection.
- > Set ID and Baud Rate for RS-485 communication.

9	Settings	Commu	unic	ation		Menu
	Com	munication		Enable	-	V
		ID		1		
	Commu	unication Typ	be	RS-485	•	
	B	aud Rate		57600	•	
						π ²
Commu	unication interrup	ot			2013-05-23 1	1:59:34

> Set IP address and Port for Ethernet communication.

9	Settings Commu	nication
	Communication	Enable 🚽 😼
	ID	1
	Communication Type	e Ehternet
	IP Address	192.168.1.2
	Gateway	192.168.1.1
	Port	1317
Comm	unication interrupt	2013-05-23 13:20:4



8.6 Demand Subinterval

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- Click [Demand Subinterval] from the Settings menu to setup demand subinterval time.
- Input the value and click [Enter].
- ➢ Setting range: 1 − 3600s

Settings	Demand Subinterval					
1-3600 s						
900						
1	2	3	4	← Backspace		
5	6	7	8	Entor		
9 0 Linter						
Input - Voltage Interrupt SD Card 8 % Used 2013-01-24 14:40:06						



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8.7 Buzzer/Alarm Setup

- I. Buzzer
- > Click [Buzzer] from the Settings menu.
- Click [Enable] to enable the buzzer.
- When an alarm occur, the buzzer will sound.
- Click [Disable] to diable the buzzer.
- Click [Test] to test the buzzer.
 The buzzer will sound for 5 seconds.

II. I/O

Set Voltage Interrupt, Over Voltage, Over Transformer
 Temperature, Under Voltage, Event Trigger, K1 Relay

- III. Alarm
- Set PMMS Alarm, Warning Event Trigger, Alarm LED







8.8 Reset Counter

The Reset Counter function allows the following parameters to be reset to zero as shown in the screen below.

> Click [Reset Counter] from the Settings menu.

Settin	gs Reset	Reset Counter				
	Rese					
	kWh	Max Frequency	/			
	Demand	Max Demand				
Max Voltage & Current & Power						
Main Breaker#1 -	Voltage Interrupt	SD Card 8 % Used	2013-01-24 15:20:03			

> Click the parameter to reset. A confirmation dialog box will appear.







- > Click [Y] to confirm reset.
- > Once parameter is reset, a dialog box "Set Successfully" will appear.

Settin	gs	Reset	: Count	er			Menu
		Res	et All				3
	k	eset Counter - k¥	n Successfi	⊠ Illy	uenc	у	
	Dei		Exit		mand		
	Max Vo	oltage &	Current	t & I	Powei		
Main Breaker#2 - 1	Voltage Interru	ıpt	SD Card	8%	Used	2013-01-24	15:21:14





8.9 Restore Factory Setting

The Restore Factory Setting function allows user to restore all settings to factory default as shown in the screen below.

- > Click [Restore Factory Setting] from the Settings menu.
- > A confirmation dialog box will appear.

T	Settings					
	Structure		Configuration	Set Alarm		
	Communication	Resto	WARNING : All Your Settings Will be Clear! Are You Sure You want to do this?	Buzzer/Alarm		
	Reset Counter		Yes No	Password		
	Language		Date/Time	Update Software		
	Sleep		Database			
Main Brea	Main Breaker#1 - Voltage Interrupt SD Card 8 % Used 2013-01-24 15:22:44					

- > Click [Y] to reset all settings to factory default.
- > To cancel reset, click [N] to return to Setting menu.
- Once restore settings is successful, a dialog box "Set Successfully" will appear.

Settings		
Structure	Configuration	Set Alarm
Communication Resto	re Factory Settings	Buzzer/Alarm
Reset Counter	Set Successfully	Password
Language		Update Software
Sleep	Database	
Main Breaker#1 - Voltage Interrupt	SD Card 8 %	Used 2013-01-24 15:23:21





8.10 Password Setting

The Password function allows user to change password as shown in the screen below.

- > Click [Password] from the Settings menu.
- Click the "Old Password" text box.

Setting	s l	Password			Menu :
0	ld Password				
Ne	ew Password				
		Confirm	Canc	el	
Input - Voltage Inter	rrupt	SD Card	8 % Used	2013-01-24	4 15:24:20

Input the old password and click [Enter].

1234				
1	2	3	4	← Backspace
5	6	7	8	Entor
9	0			Enter



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> Once the password is entered correctly, a checked mark will appear.

Setting	is Pas	sword		Menu :
C	Old Password 1234			
Ne	ew Password			
	C	onfirm	Cancel	

- Click the "New Password" text box.
- > Input the new password and click [Enter] to update the password.

Sett	ings	F	assword			Menu
	Old Pas	sword 12	34			
	New Pas	sword 56	78			
			Confirm	Canc	el	
Main Breaker#2	- Voltage Int	errupt	SD Card	8 % Used	2013-01-2	24 15:33:03





8.11 Language Setting

- > Click Language from the Settings menu to display language.
- Select [English] / [Traditional Chinese] / [Simplified Chinese] and click Exit.

Settings	Language	
	English	V
	繁體中文	
	简体中文	
Input - Voltage Interrupt	SD Card 8 % U	sed 2013-01-24 15:34:13





8.12 Date and Time Setting

The iPDU enables date and time setup. In the event of failure, the actual date, time and sequence will be recorded. All records are saved in the event log (SD Card).

- > Click [Date/Time] from the Settings menu.
- Use the [+] [-] key to set the desired year, month, day, hour, minute and second.

Settings Dat	e/Time
Year Month 2013 01 Minute Second	Day Hour 24 15
Input#1 - Voltage Interrupt	Update Time SD Card 8 % Used 2013-01-24 15:35:16

- Click [Update Time].
- Once time is updated, a dialog box "Set Successfully" will appear.







8.13 Software Update

The Software Update function allows user to update software using the SD card.

- > Copy the updated "package emd" file into an SD card.
- > Insert the SD card into the SD card slot on the panel device.
- Click [Update Software] from the Settings menu.
- > A confirmation dialog box will appear as shown below.

Settings									
	Structure		Configuration	S	Set Alarm				
	Communication	Update	Software ×	Buzzer/Alarm					
	Reset Counter		Yes No	ļ r	Password				
	Language		Date/Time	Upd	ate Software				
	Sleep		Database						
Main Brea	ker#2 - Voltage Interr	upt	SD Card 8 %	Used	2013-01-24 15:3	7:56			

- > Click [Y] to update the software.
- > Wait for a few minutes. The panel will restart automatically.





8.14 Screen Timeout

The Screen Timeout function allows user to enable or disable the iPDU sleep function.

- > Select [Enable] to enable the sleep function.
- Input the timeout minutes.
- Select [Disable] to disable the sleep function.

Settings		Scree	n Timeout		Memu
	• Ena	ble	5	minutes	
	• Disa	able			
Communication	interrupt			2013-05-	20 15:30:22





8.15 Database

The Database function allows user to enable or disable the recording interval.

> Select [Enable] to enable the Database function.

(The database will be stored in the SD card.)

> Select [Disable] to disable the Database function.

Set	tings	Database		
Ē	Time Interval o	f Recording		S
	Enable	1	minutes	
	 Disable 			
Input - Voltage	e Interrupt	SD Card	8 % Used 2013-0.	1-24 17:18:42





9. Event Log

Display the event log records.



Click [Event Logs] from the main screen.

Click [Main Breaker #1] to download event logs.





- > Select the event log download quantity. The default is 50 entries.
- Click [Download] to save the event log

	Event Logs		Mai	n Breaker‡	#1			Menu
Со	unt 50	*	D	ownload				
Item	Date	Time	Code	Description				
0261	2013/01/14	16:04:24	A005	Voltage Interrupt				
0260	2013/01/14	13:23:54	A005	Voltage Interrupt				
0259	2013/01/11	15:55·04	4005	Voltage Interrupt				
0258	2013/01/11	14:56	>>	> 12 <<	<			
0257	2013/01/11	13:30						
0256	2013/01/11	11:2 4 :20	AUU5	voitage Interrupt				
0255	2013/01/11	11:17:02	A005	Voltage Interrupt				
0254	2013/01/11	10:46:02	A005	Voltage Interrupt				
0253	2013/01/11	10:27:47	A005	Voltage Interrupt				
0252	2013/01/11	09:15:54	A005 Voltage Interrupt					
0251	2013/01/11	08:38:24	A005	Voltage Interrupt				
Main Bro	eaker#2 - Vol	tage Interru	ıpt	SD Card	8%	Used	2013-01-24	15:51:58

The event log will be exported as excel sheet and save in SD card.

SDCard 🕨 E	ventLogs		
a,	Output#1 Microsoft Excel 逗點分隔值檔案 2.46 KB	Xa,	輸出側#1 Microsoft E 2.01 KB

> Use Microsoft Excel to view saved event log.

	А	В	С	D	E F		G
1	Item	Date	Time	Code	Description		
2	300	2011/9/21	08:29:22	A005	Voltage Interrupt		
3	299	2011/9/21	08:29:22	A015	Over Transfomer Temp. Alarn		
4	298	2011/9/21	08:29:22	A004	Under Voltage Alarm		
5	297	2011/9/21	08:29:22	A001	Over Voltage Alarm		
б	296	2011/9/20	19:25:52	C004	Data & Time Update		
7	295	2011/9/20	17:08:42	A005	Voltage In	terrupt	

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10. About

The about page displays the Software version, the OS version, the Serial number of the Power Distribution unit and MAC address of the PMMM.

Click [About] from the main screen.



Click [OK] to exit.



