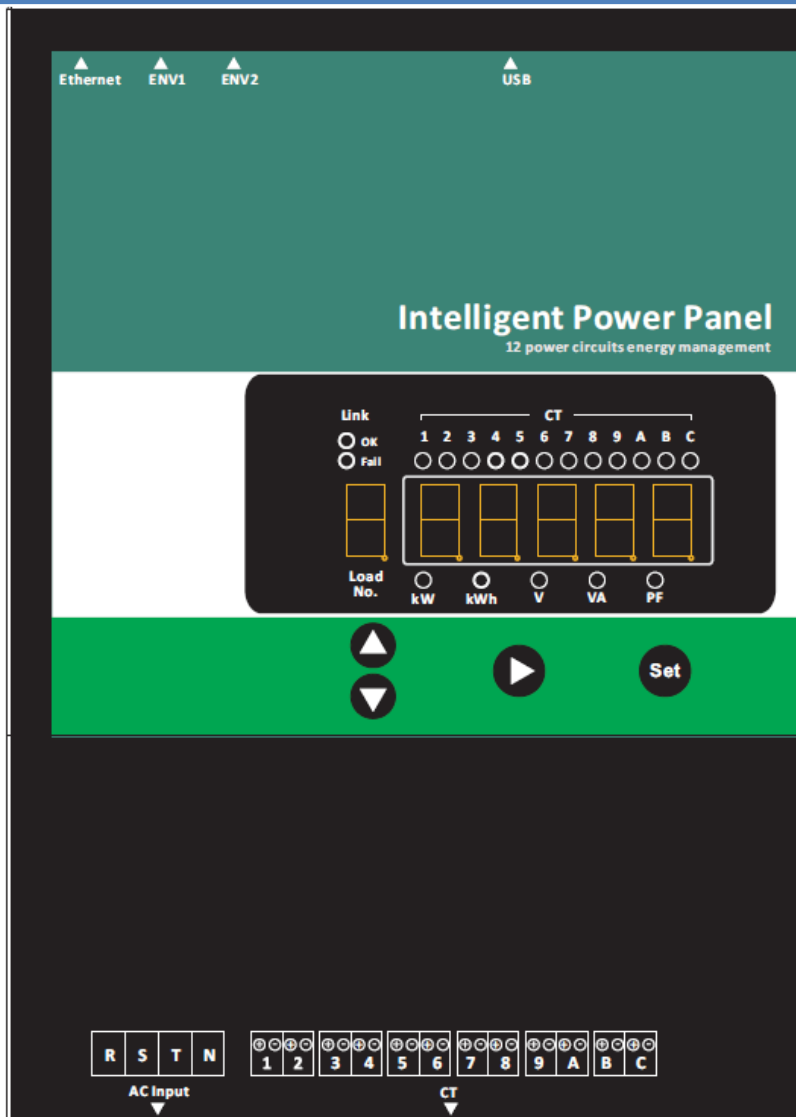


2017

Intelligent Power Panel with Switch Installation Guide



Digipower Inc.

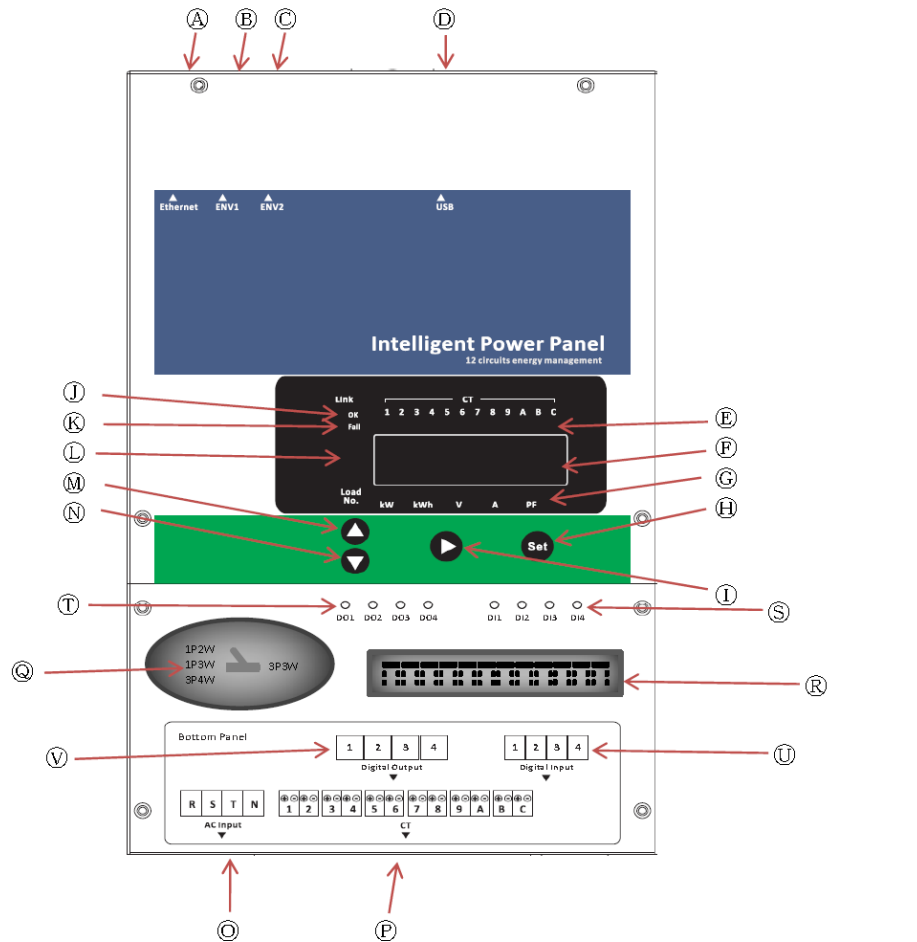
2017/5/5

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Installation Diagram

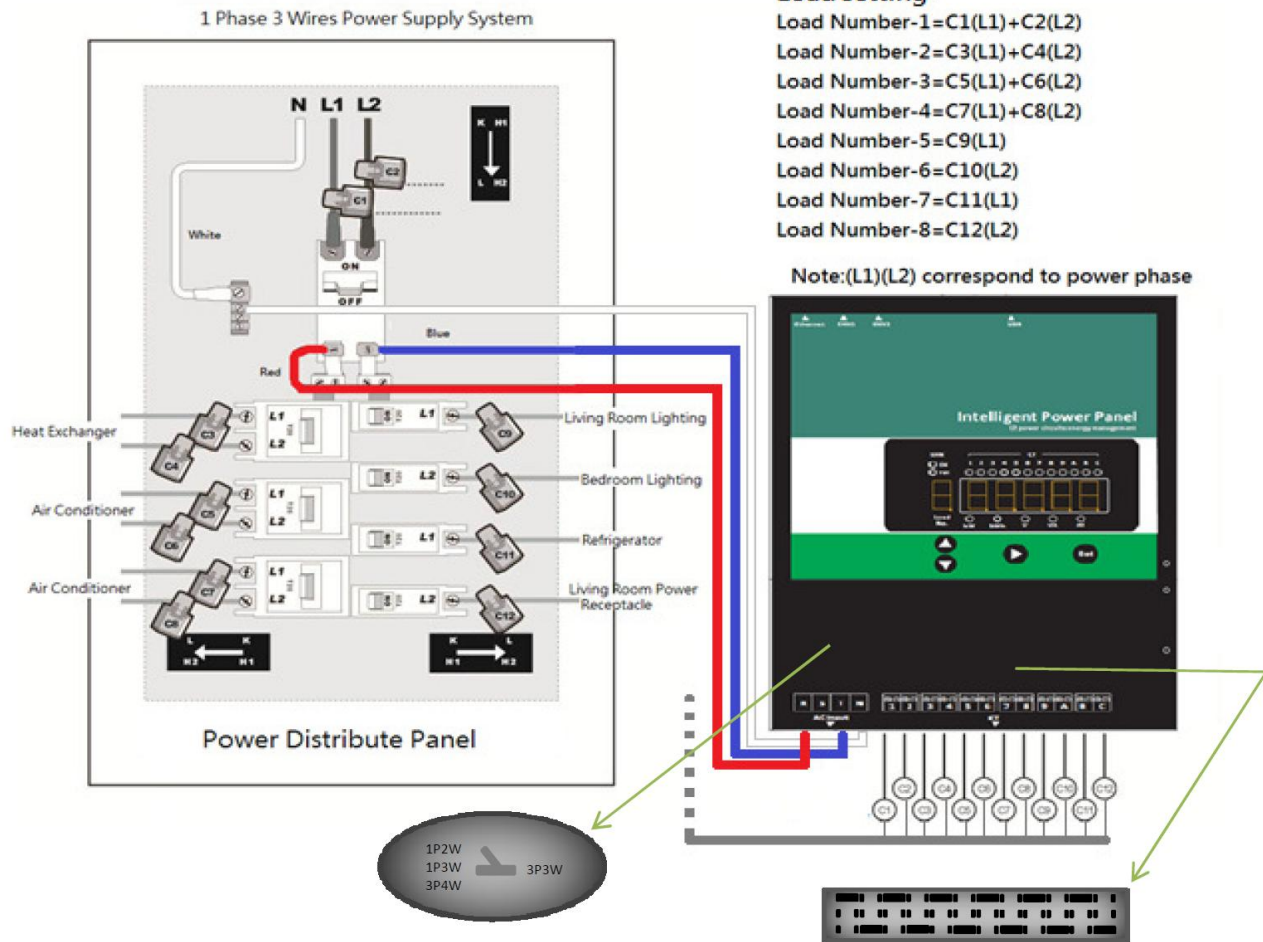
Faceplate Functional Description



- | | |
|------------------------------------|--|
| A: Ethernet connector(RJ-45) | L: Load number display |
| B: ENV connector(RJ-11) | M: Up button |
| C: ENV connector(RJ-11) | N: Down button |
| D: USB connector(Wi-Fi USB Dongle) | O: Working Power and reference power |
| E: Selected CT indicator | P: CT inputs |
| F: 5 digits numeric display | Q: Phase and Wires selector(inside the panel) |
| G: Selected function indicator | R: CT reference phase jumper(inside the panel) |
| H: Set button | S:Di indicator |
| I: Enter button | T:Do indicator |
| J: Link ok indicator | U:Di terminal |
| K: Link fail indicator | V:Do terminal |

1P3W installation Diagram

(1) 1P3W Wiring Diagram



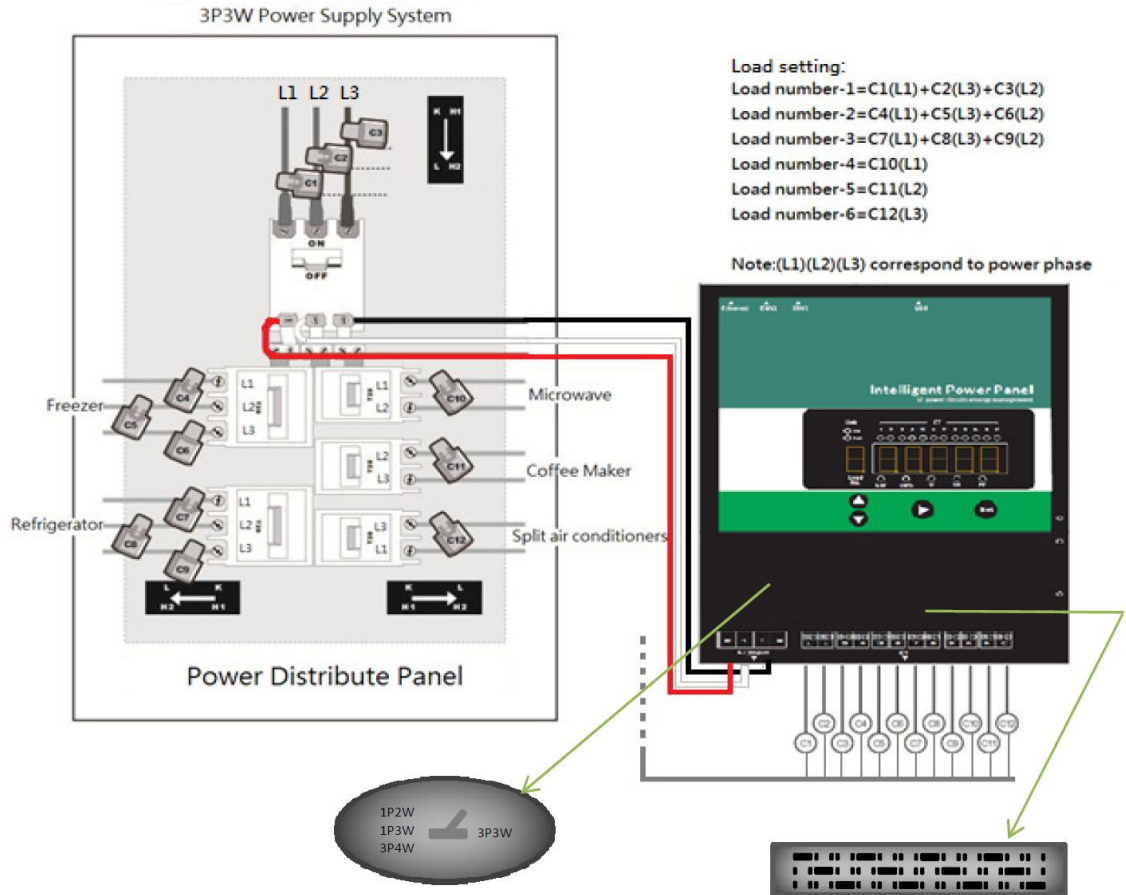
Notes:

- The figure Shows 110V / 220V 1P3W power supply system used in the general household.
- N stand for Neutral, L1-N and L2-N are 110V, L1-L2 is 220V.
- C1, C2 detect power source. C3, C4 and C5, C6 and C7, C8 detect 220V. C9~C12 detect 110V.
- In the measurement of 1P3W power consumption, the N as the reference point, with two wattmeter measurement, measure the voltage between L1-N with current L1, L2-N with current L2. C1 detects L1 current on L1-N, C2 detects L2 current on L2-N. The rest C3, C4, or C5, C6 or C7, C8 can be done in the same manner.
- The Formula and define of 1P3W synthesized as follows:

$V_{AVG}(\text{Average voltage}) = (V_1 + V_2)$	$P_{FEQ}(\text{equivalent PF}) = W_T / VA_T$
$I_{EQ}(\text{equivalent current}) = VA_T / V_{AVG}$	$KWH_T(\text{TOTAL KWH}) = KWH_1 + KWH_2$
$W_T(\text{TOTAL W}) = W_1 + W_2$	$KVAH_T(\text{TOTAL KVAH}) = KVAH_1 + KVAH_2$
$VA_T(\text{TOTAL VA}) = VA_1 + VA_2$	
- C9, C11 detect L1 current on L1-N separately. C10, C12 detect L2 current on L2-N separately.

3P3W installation Diagram

(2) 3P3W Wiring Diagram



Notes:

1. L1-L2, L2-L3 and L3-L1 are 220V. The figure shown C1, C2, C3 detect 3P3WΔ type total power source, C4, C5, C6 and C7, C8, C9 detect the other two 3P3W power. C10, C11 and C12 detect the one of three phases separately.

2. In the measurement of 3P3W power consumption, the L2 as the reference point, with two wattmeter measurement, measure the voltage between L1-L2 with current in L1 and L3-L2 with current in L3 to get 3P3W power consumption.

The figure shown C1 detects L1 current, the voltage is L1-L2.

The figure shown C2 detects L2 current, the voltage is L3-L1.

The figure shown C3 detects L3 current, the voltage is L2-L3.

3. The Formula and define of three-phases four-wires synthesized as follows:

$$V_{AVG}(\text{Average voltage}) = (V_1 + V_3) / 2$$

$$I_{EQ}(\text{equivalent current}) = V_{AT} / V_{AVG}$$

$$W_T(\text{TOTAL W}) = W_1 + W_3$$

$$VA_T(\text{TOTAL VA}) = VA_1 + VA_3$$

$$P_{FEQ}(\text{equivalent PF}) = W_T / VA_T$$

$$KWH_T(\text{TOTAL KWH}) = KWH_1 + KWH_3$$

$$KVAH_T(\text{TOTAL KVAH}) = KVAH_1 + KVAH_3$$

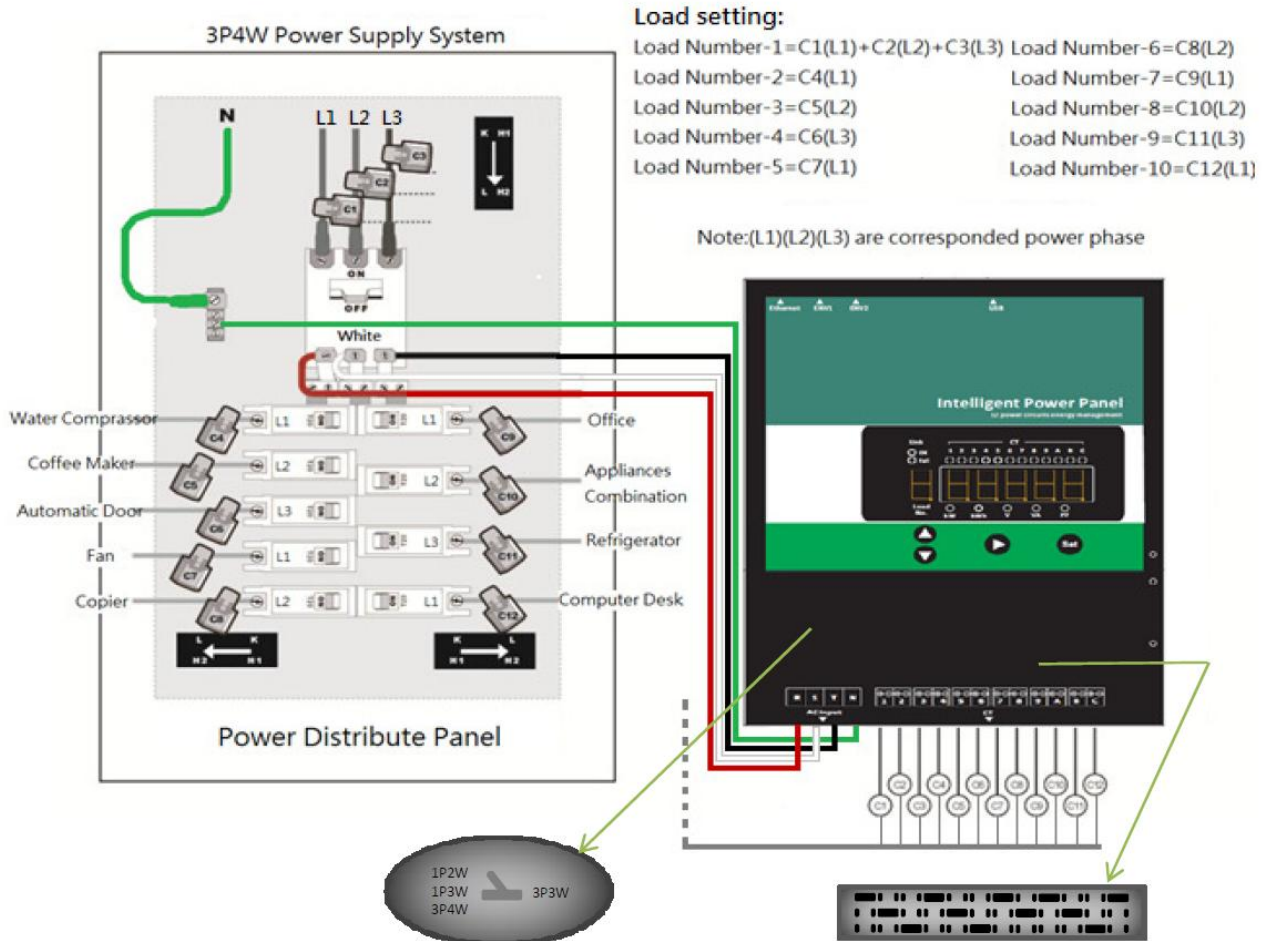
4. The figure shown C10 detects L1 current, the voltage is L1-L2.

The figure shown C11 detects L2 current, the voltage is L2-L3.

The figure shown C12 detects L3 current, the voltage is L3-L1.

3P4W installation Diagram

(3) 3P4W Wiring Diagram



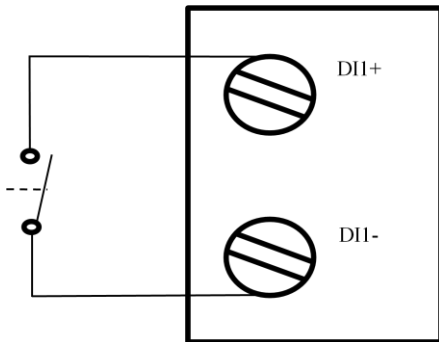
Notes:

1. $V_{L1-N} = V_{L2-N} = V_{L3-N}$, $V_{L1-L2} = V_{L2-L3} = V_{L3-L1} = \sqrt{3} * V_{L1-N} = 380V$
2. The figure shows C1, C2 and C3 detect 3P4W Y type power source. C4~C12 detect phase to Neutral.
3. In the measurement of 3P4W power consumption, the N as the reference point, with three wattmeter measurement, measure the voltage between L1-N with current in L1, L2-N with current in L2 and L3-N with current in L3 to get 3P4W power consumption.
The figure shown C1 detects L1 current, the voltage is L1-N.
The figure shown C2 detects L2 current, the voltage is L2-N.
The figure shown C3 detects L3 current, the voltage is L3-N.
4. The Formula and define of three-phases four-wires synthesized as follows:
 $V_{Avg}(\text{Average voltage}) = (V_1 + V_2 + V_3) / 3$
 $I_{Eq}(\text{equivalent current}) = V_{AT} / V_{Avg}$
 $W_T(\text{TOTAL W}) = W_1 + W_2 + W_3$
 $VA_T(\text{TOTAL VA}) = VA_1 + VA_2 + VA_3$
 $P_{F_{Eq}}(\text{equivalent PF}) = W_T / VA_T$
 $KWH_T(\text{TOTAL KWH}) = KWH_1 + KWH_2 + KWH_3$
 $KVAH_T(\text{TOTAL KVAH}) = KVAH_1 + KVAH_2 + KVAH_3$
5. The figure shown C4, C7, C9, C12 detect L1 current, the voltage is L1-N.

The figure shown C5, C8, C10 detect L2 current, the voltage is L2-N.

The figure shown C6, C11 detect L3 current, the voltage is L3-N.

Digital Input Wiring Diagram



Power Supply:

12 Vdc 0.8A

Input:

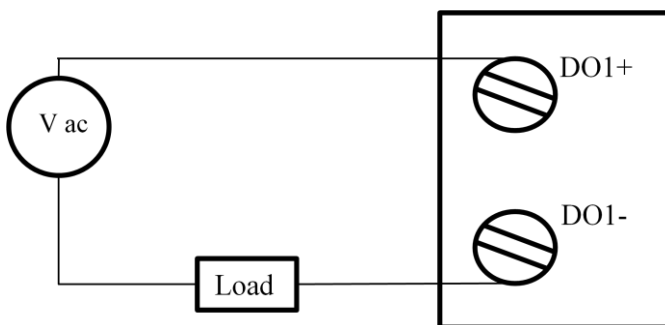
Channel Isolated

Range : Contact open(off) or closed (on)

Termination Connection:

14~28AWG, 0.2~15mm²

Digital Output Wiring Diagram



Output:

Range : Contact open(off) or closed (on)

Max. switching current: 16A

Max. switching voltage: 250VAC

Max. switching capacity: 4000VA

Termination Connection:
















12 ~30AWG, 0.2~4mm²

Installation Notes

1. The maximum voltage measurement is 400V.
2. Check that the voltage and current phases are connected properly.
3. Measuring the diameter of the conductor (the bare wire) with the insulation removed and selecting the suitable size of detachable CT.
4. Measuring voltage: Make sure the CT's on phases and wires are correct as installation diagram.
5. Measuring current: The positive output can be obtained when the direction of current carrying conductor is the same as the direction of arrow marked on the CT.
6. The installation of loads combination refers to Installation Diagram.
7. The hardware setting refers to Installation Diagram.
8. Working power supply: AC 115V/230V on terminal R & T, the pinout as shown in Installation Diagram.
9. The software setting refers to Operation.
10. Communication interface: RJ-45, TCP/IP





Operation

Normal Mode


Item	Key	Description
1.1	 or 	Show Loops and CT combination.
1.2		Display the following items: (1) kW (2) kWh (3) V (4) I (5) PF
1.3	 + 	Pressed 3 seconds simultaneously, enter Meter ID setting Mode.
1.4	 + 	Pressed 3 seconds simultaneously, enter Brightness adjusting Mode, show version number and IP address.
1.5	 + 	Pressed 3 seconds simultaneously, enter 1P3W/3P3W/3P4W setting Mode.
1.6	 + 	Pressed 3 seconds simultaneously, enter Test Mode.
1.7	 + 	Pressed 3 seconds simultaneously, enter Load setting Mode.
1.8	 + 	Pressed 3 seconds simultaneously, enter Meter Series Number setting Mode.





Brightness adjusting

In this mode, adjust LED brightness from 1 to 9.

Item	Key	Description
2.1		Increase
2.2		Decrease
2.3		One click enters Show IP address mode. Pressed 3 seconds return to Normal Mode.
2.4		Pressed 3 seconds to save then return to Normal Mode.





Show IP address

In Brightness adjusting mode, pressed  enter Show IP address mode.

Item	Key	Description
2.1		Previous segment display
2.2		Next segment display
2.3		One click enters Brightness adjusting mode. Pressed 3 seconds return to Normal Mode.
2.4		Pressed 3 seconds to save then return to Normal Mode.




1P3W/3P3W/3P4W setting


In this mode, select 1P3W/3P3W/3P4W in accordance with wires installation.

Item	Key	Description
3.1	 or 	Select 1P3W/3P3W/3P4W
3.2		Pressed 3 seconds return to Normal Mode.
3.3		Pressed 3 seconds to save then return to Normal Mode.

Test Mode setting







In this mode, inspect each CT information.

Item	Key	Description
4.1	 or 	Select CT number
4.2		Display the following items in sequence: (1) kW (2) kWh (3) V (4) I (5) PF

4.3		Pressed 3 seconds return to Normal Mode.
-----	---	--






Load setting

In this mode, set CT combination in each loop.

Item	Key	Description
5.1	 or 	Select loop
5.2		Select CT number
5.3		Pressed 3 seconds return to Normal Mode.
5.4		Added/exit loop
5.5		Pressed 3 seconds to save then return to Normal Mode.

Meter ID setting

In this mode, set Meter ID from 1 to 99.

Item	Key	Description
6.1	 or 	Select Meter ID
6.2		Select 1st digit or 2nd digit
6.3		Pressed 3 seconds return to Normal Mode.
6.4		Pressed 3 seconds to save then return to Normal Mode.






Note:

- Set Meter ID = 0, restore factory setting as following:
 Meter ID = 01
 Load 1 = CT-01
 Brightness = 1
 3P4W
- Set Meter ID = 100, restore test setting as following:
 Meter ID = 01

Load 1 = CT-01 Load 2 = CT-02 Load 3 = CT-03 Load 4 = CT-04
 Load 5 = CT-05 Load 6 = CT-06 Load 7 = CT-07 Load 8 = CT-08
 Load 9 = CT-09 Load 10 = CT-10 Load 11 = CT-11 Load 12 = CT-12
 Brightness = 1
 3P4W

Meter Series Number setting

In this mode, set Meter Series Number.

Item	Key	Description
7.1	 or 	Select Meter Series Number
7.2		Select digit
7.3		Pressed 3 seconds return to Normal Mode.
7.4		Pressed 3 seconds to save then return to Normal Mode.

Technical Specification

Model	IPP-SX-XXX
Phase& Wire	1P2W / 1P3W / 3P3W / 3P4W
Module	12 power monitoring modules with 1P2W
Communication	
Display	5 digits 7 segments display power information and IP address in turn 1 digit 7 segments display load number 12 Red LED to display circuits number 1 Green LED for Internal Communication is normal 1 Red Led for Internal Communication is failed
Ethernet	RJ45, Wi-Fi (USB Dongle option)
Temperature& Humidity	RJ11 x 2 (ENV Probe option)
Comm. Protocols	ICMP, ARP, IP, TCP, UDP, DHCP, HTTP, HTTPS, SNMPv1,V3
Interface	
DI	IPP-S uses a terminal in 4 channels, 2 tiers each as dry contact input interface. Its wire specification is 0.2 to 1.5 mm ² /28 to 14AWG. Range : Dry contact open(off) or closed (on) ON-State Voltage: 0 to 5 Vdc ±1V

	OFF-State Voltage: 7 to 12 Vdc ±1V Voltage Drop: 2Vdc ±0.5V at Input Load 100 Ohm		
DO	IPP-S uses a terminal in 4 channels, 2 tiers each as dry contact output interface. Its wire specification is 0.2 to 4 mm ² /30 to 12AWG. Range : Dry contact open(off) or closed (on) Rated load:16A 240VAC / 16A 24Vdc Max. switching current: 16A Max. switching voltage: 250VAC Max. switching capacity: 4000VA		
Operation			
Power Usage	lower than 6W, AC 115V/230V		
Operation Temperature	-20~+60 Celsius degree		
Operation Humidity	20%~95%RH		
Size	192x308x50 mm		
Weight	1.4 kg		
Warranty	2 years		
Certification	FCC & CE		
Measurement			
CT inner diameter(mm)	25ø	16ø	10ø
Rated. Current	200 A	120 A	60 A
Range			
Voltage	60.00V ~ 500.00V		
Current	0.5A ~ 200A	0.2A ~ 120A	0.1A ~ 60A
Active Power	0.001kW ~ 50kW	0.001kW ~ 30kW	0.001kW ~ 15kW
Apparent Power	0.001kVA ~ 50kVA	0.001kVA ~ 30kVA	0.001kVA ~ 15kVA
PF	0 ~ 1.00		
kWH	0.001kWh ~ 99999kWh		
Active Power	0.001kVARh ~ 99999kVARh		
Apparent Power	0.001kVAh ~ 99999kVAh		
Precision			
kW	1% (PF=1.0 , rated current)		
Power	1% (W,V,A,VA,PF , rated current)		

Note:

Nominal equipped with 12 10 ϕ CTs, rated current 15(60)A.

Optional 16 ϕ CTs, rated current 30(120)A. 24 ϕ CTs, rated current 50(200)A.

Web interface

The default setting for the way to get IP address is DHCP. If PDU cannot get the IP from DHCP server, the IP address will stay at **192.168.0.216**.



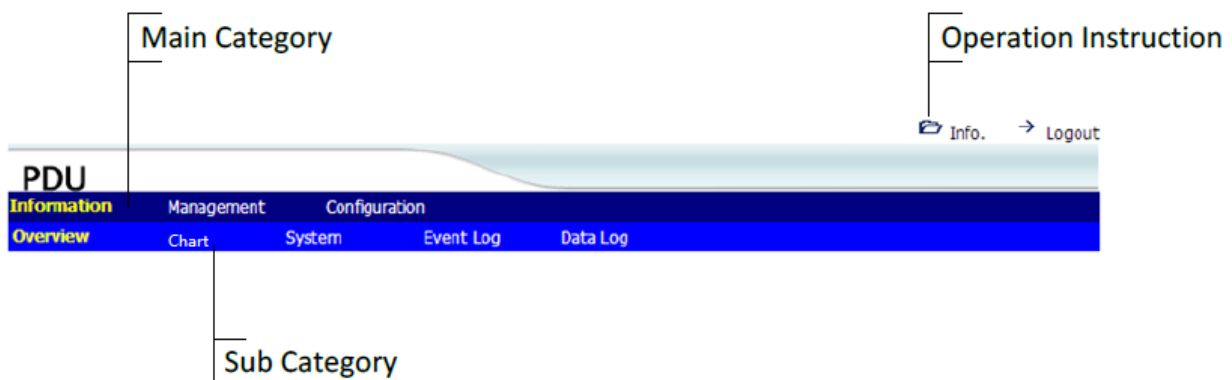
Login Name:

Login Password:


Default ID: **snmp**

Default Password: **1234**

After login to web, user can check all operation instruction in web page of "Info."



Information

 Info. [→ Logout](#)

PDU

Information
Management
Configuration

Overview
Chart
System
Event Log
Data Log

Overview

Phase and Wire		
Meter Phase Type	1P3W	

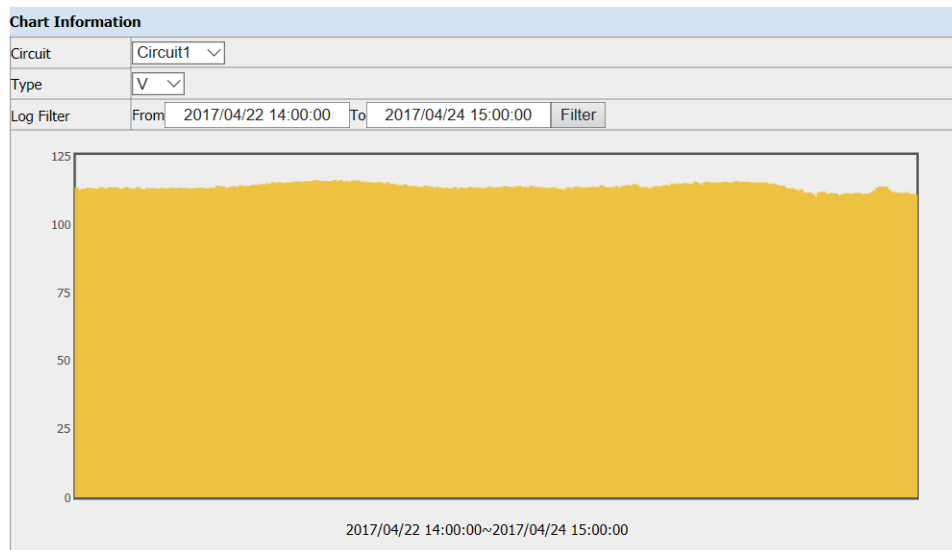
ENV Status		
Temperature (1)	N / A	
Humidity (1)	N / A	
Temperature (2)	23 C	Normal
Humidity (2)	64 %	Normal

DI	Status	DO	Status
DI-1	Open	DO-1	Close
DI-2	Open	DO-2	Close
DI-3	Open	DO-3	Close
DI-4	Close	DO-4	Open

Meter Status								
Load	Name	CT Number	kW	kWh	V	A	PF	Status
1	Circuit1	1,0,0	0.010	63.355	110.90	0.19	0.48	Normal
2	Circuit2	2,0,0	0.000	16.784	109.98	0.00	1.00	Normal
3	Circuit3	3,0,0	0.009	15.947	110.04	0.15	0.55	Normal
4	Circuit4	4,0,0	0.000	4.609	110.41	0.00	1.00	Normal
5	Circuit5	5,0,0	0.000	29.749	110.32	0.00	1.00	Normal
6	Circuit6	6,0,0	0.000	4.601	110.11	0.00	1.00	Normal
7	Circuit7	7,0,0	0.000	4.623	110.11	0.00	1.00	Normal
8	Circuit8	8,0,0	0.000	4.611	110.44	0.00	1.00	Normal
9	Circuit9	9,0,0	0.000	26.443	110.32	0.00	1.00	Normal
10	Circuit10	10,0,0	0.000	4.603	109.90	0.00	1.00	Normal
11	Circuit11	11,0,0	0.001	4.930	111.05	0.05	0.20	Normal
12	Circuit12	12,0,0	0.000	4.594	109.92	0.00	1.00	Normal

Display Power information summary and DI/DO status.

Chart



Display All Power Information in trend.

System

System Information	
Model Number :	IPP-S series
Firmware Version :	Ver_IPP-S 1.00_201704141029
System Uptime :	System has been up for : 7 day(s) , 1 hour(s) , 54 minute(s) , 59 second(s) , since 04/17/2017 12:45:27 PM
SD card	Total 7.47 GB , Used 1.88%
Network Information	
IPv4 Address :	192.168.0.34
IPv6 Address :	192:168:0::127
MAC Address :	00:13:48:02:8A:A0
Wireless Address :	Disable
Wireless MAC Address :	Unknow
SNMP Information	
System Name :	IPP-S
System Contact :	admin
System Location :	office

Display System, Network and SNMP Information.

Event Log

Log Setting		
Event Time :	<input checked="" type="radio"/> Last	<input type="text" value="All Logs"/>
	<input type="radio"/> From	<input type="text" value="2011/08/08 12:00:00"/> ~ <input type="text" value="2011/09/08 12:00:00"/>
Event Log		
Date	Time	Event
2017/04/24	14:29:13	Web user [snmp] logged in from 192.168.0.79
2017/04/21	10:57:19	Web user [snmp] logged in from 192.168.0.79
2017/04/20	11:13:29	Web user [snmp] logged in from 192.168.0.79
2017/04/20	08:56:16	Web user [snmp] logged in from 192.168.0.48
2017/04/19	18:23:19	Web user [snmp] logged in from 220.128.136.76
2017/04/19	18:04:34	Web user [snmp] logged in from 220.128.136.76
2017/04/19	17:35:32	Web user [snmp] logged in from 220.128.136.76
2017/04/19	17:11:01	Web user [snmp] logged in from 192.168.0.48
2017/04/19	16:52:02	Web user [snmp] logged in from 220.128.136.76
2017/04/19	15:26:35	Web user [snmp] logged in from 192.168.0.1

Inquire event log by time.

Data Log

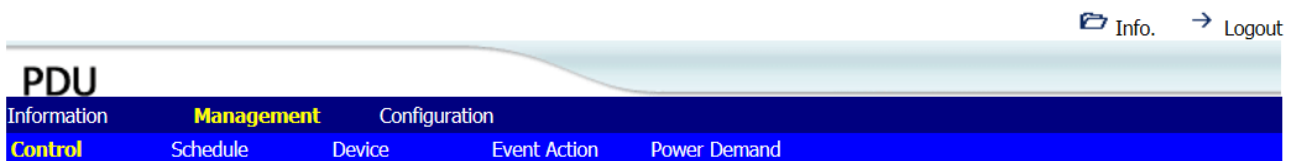
Data Log (Maximum 1500 records)									
Circuit No.	1								
Log Filter	From	2017/04/23 14:00:00			To	2017/04/24 15:00:00			Filter
Date / Time	kW	kWh	Voltage	Current	PF	Temp.1.c	Hum.1.%	Temp.2.c	Hum.2.%
2017/04/23 14:07:41	0.010	63.108	112.55	0.19	0.47	na	na	25	63
2017/04/23 14:17:51	0.010	63.109	112.65	0.19	0.47	na	na	25	63
2017/04/23 14:28:00	0.010	63.111	112.81	0.19	0.47	na	na	25	63
2017/04/23 14:38:09	0.010	63.113	112.70	0.19	0.47	na	na	25	63
2017/04/23 14:48:18	0.010	63.115	113.24	0.19	0.47	na	na	25	62
2017/04/23 14:58:27	0.010	63.116	112.95	0.19	0.47	na	na	25	62
2017/04/23 15:08:36	0.010	63.118	112.88	0.19	0.46	na	na	25	62
2017/04/23 15:18:45	0.010	63.120	112.53	0.19	0.47	na	na	25	62
2017/04/23 15:28:54	0.010	63.121	113.10	0.19	0.47	na	na	25	62
2017/04/23 15:39:04	0.010	63.123	113.28	0.19	0.47	na	na	25	62

Clear < >

Inquire data log by time for each circuit.

Note: System memory can log up to 1500 entries.

Management



Control

DO Control						Open	Close
No.	<input type="checkbox"/>	DO	Status	Task	Delay Open	Delay Close	
1.	<input type="checkbox"/>	DO-1	Close	Free	1	1	
2.	<input type="checkbox"/>	DO-2	Close	Free	2	2	
3.	<input type="checkbox"/>	DO-3	Close	Free	3	3	
4.	<input type="checkbox"/>	DO-4	Open	Free	4	4	

Manual operation the contact output to on or off.

DO: Select specifying DO-1~DO-4 or all DOs.

Status: Display the status of each DO.

Task: Show DO command execution status, "Free" means that no command is currently executed, "Busy" represents the command is executing.

Delay Open: The Delay time from command execution to DO on.

Delay Close: The Delay time from command execution to DO off.

Open: Open command button.

Close: Close command button.

Schedule

Cycling Setting						
DO	Close (On)		Open (Off)		Action	
DO-1	30	minute(s)	30	minute(s)	Disable ▾	Modify
DO-2	30	minute(s)	30	minute(s)	Disable ▾	Modify
DO-3	30	minute(s)	30	minute(s)	Disable ▾	Modify
DO-4	30	minute(s)	30	minute(s)	Disable ▾	Modify

Schedule Setting	
DO	DO-1 ▾
DO Action	Close (On) ▾
Date (yyyy/mm/dd)	<input checked="" type="radio"/> Once <input type="text"/> <input type="radio"/> Every Sunday ▾
Time (hh:mm)	<input type="text"/>
<input type="button" value="Add"/> <input type="button" value="Modify"/>	

Schedule List						
<input type="button" value="Delete"/>						
No.	<input type="checkbox"/>	Item	Date	Time	Action	Enable
1	<input type="checkbox"/>	DO-1	2017/04/17	12:00	ON	<input checked="" type="checkbox"/>

Cycling Setting

Close(On): The duration of Close (in minutes).

Open(Off): The duration of Open (in minutes).

Action: Enable or Disable.

Modify: Modify and save.

Schedule Setting

DO: Select DO-1~4.

DO Action: Select Close(On) or Open(Off).

Date: Click "Once" if the action is executed only once, then input date(Format:yyyy/mm/dd).

Click"Every" if the action is executed periodically, then select Monday~Sunday or day.

Time: The time for above mentioned specified date.(format:hh:mm)

Add: Add above mentioned schedule into schedule list.

Modify: Click the check box of pre-define schedule in the list, then click modify button to change.

Device

ENV Threshold Configuration						
No.	Device	Temperature(°C)		Humidity(%)		
		Lower	Upper	Lower	Upper	
01	ENV 1	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="button" value="Modify"/>
02	ENV 2	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="button" value="Modify"/>

DI Configuration	
No.	DI Name
1	<input type="text" value="DI-1"/>
2	<input type="text" value="DI-2"/>
3	<input type="text" value="DI-3"/>
4	<input type="text" value="DI-4"/>
<input type="button" value="Modify"/>	

DO Configuration			
No.	DO Name	Delay Open(Sec)	Delay Close(Sec)
1	<input type="text" value="DO-1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
2	<input type="text" value="DO-2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>
3	<input type="text" value="DO-3"/>	<input type="text" value="3"/>	<input type="text" value="3"/>
4	<input type="text" value="DO-4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>
<input type="button" value="Modify"/>			

Circuit Threshold Configuration				
No.	Circuit Name	Warning (Amp)	Overload (Amp)	
1	<input type="text" value="Circuit1"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
2	<input type="text" value="Circuit2"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
3	<input type="text" value="Circuit3"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
4	<input type="text" value="Circuit4"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
5	<input type="text" value="Circuit5"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
6	<input type="text" value="Circuit6"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
7	<input type="text" value="Circuit7"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
8	<input type="text" value="Circuit8"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
9	<input type="text" value="Circuit9"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
10	<input type="text" value="Circuit10"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
11	<input type="text" value="Circuit11"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>
12	<input type="text" value="Circuit12"/>	<input type="text" value="12"/>	<input type="text" value="15"/>	<input type="button" value="Modify"/>

ENV Threshold Configuration: The hi & lo alarm setting for Temperature and Humidity.

DI Configuration: Enter the name of Digital Input.

DO Configuration: Enter the name of Digital Output.

Circuit Threshold Configuration: Circuit naming and warning & overload alarm setting

Event Action

Event Action Setting					
Event	<input type="radio"/>	DI-1	Open	Occurs	
	<input type="radio"/>	Circuit1	Warning threshold	Occurs	
	<input type="radio"/>	ENV (1)	Temperature Overrun	Occurs	
	<input type="radio"/>	Receive Trap .1.3.6.1.4.1. from		Value Ignore	
Action	<input type="checkbox"/>	DO-1 delay	second(s) turn	Open	
	<input type="checkbox"/>	DO-2 delay	second(s) turn	Open	
	<input type="checkbox"/>	DO-3 delay	second(s) turn	Open	
	<input type="checkbox"/>	DO-4 delay	second(s) turn	Open	
					<input type="button" value="Add"/> <input type="button" value="Modify"/>

Event List				
<input type="button" value="Delete"/>				
No.	<input type="checkbox"/>	Event	Action	Enable
01	<input type="checkbox"/>	DI-4 open occurs	DO-4 delay 1 second(s) and turn Open	<input checked="" type="checkbox"/>

Event: DO trigger conditions, the four options can only be chosen one by click check box.

DI: Select DI1 ~ 4, then choose open or close.

Circuit: Select Circuit1 ~ 12, select the Warning threshold or Overload threshold, and then select Occurs or Removed.

ENV: Select ENV1~2, Select Temperature Overrun or Temperature Underrun or Humidity Overrun or Humidity Underrun, and then select Occurs or Removed.

Trap: First enter the object code, the options of Value are Ignore, Integer and String, then enter Integer or String, finally enter Trap IP address.

Action: DO will be actuated by Event trigger conditions are met, can be multiple selected by click check box. Enter the delay seconds, then select Open or Close.

Event List: All the pre-define events are saved in this list.

Delete: Click the check box for all or single event, then click delete button.

Enable: Click the enable check box, activate the action of event.

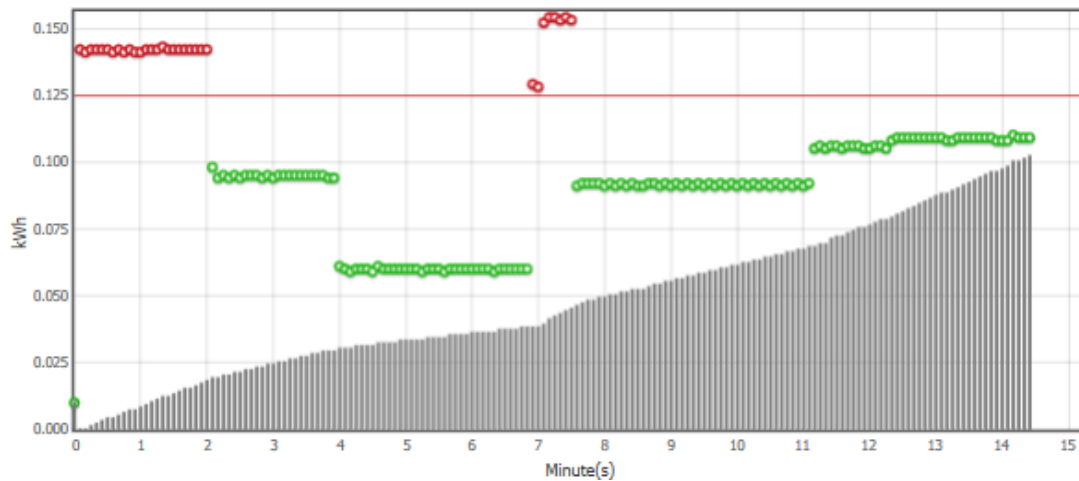
Power demand

Now						
Working Day On-Peak						
Power Demand TDP Setting						
Name						
Week day	Sunday	~	Sunday			
Off-Peak			TPD		kW	
On-Peak	<input type="checkbox"/> Add		~		TPD	kW
Date	From		To		<input type="button" value="Add to Top"/> <input type="button" value="Add to Bottom"/>	
<input type="button" value="Save"/> <input type="button" value="Del"/> <input type="button" value="All"/> <input type="button" value="Hide"/>						
	Name	Week day	Off-Peak TPD	On-Peak TPD	Range	Priority
<input type="checkbox"/>	Working Day	Monday~Friday	1 kW	08:00~17:00 0.5 kW	2017-01-01~2017-12-31	<input type="button" value="↑"/> <input type="button" value="↓"/>
Power Demand configure						
Sampling Time		5	second(s)			
TPD Time		15	minute(s)			
<input type="button" value="Save"/> <input type="button" value="Chart Reset"/>						

- Now:** Displays the current Demand name and On-Peak or Off-Peak period.
- Name:** Enter the name of demand.
- Week day:** Select the working day during a week.
- Off-Peak:** Enter the Off-Peak contracted power (in KW).
- On-Peak:** Click check box of Add then enter the time period (format: hh:mm~hh:mm) and On-Peak contracted power(in KW).
- Date:** Select date period.
- Add to Top:** Add the demand schedule into the top of list.
- Add to Bottom:** Add the demand schedule into the bottom of list.
- Save:** Save demand schedule list.
- Del:** Click check box of demand schedule then push Del button.
- All:** Select all schedules in list.
- Hide/Show:** Hide or show all schedules.
- Sampling Time:** Select refresh time of the demand chart.
- TPD Time:** Select Demand period.
- Save:** Save demand chart setting.
- Chart Rest:** Reset demand chart, restart from 0 min.

Circuit Selection			
Circuit		Circuit1	▼
Power Demand Information			
Estimated Power Demand (EPD) now	0.01		kW
Maximum Demand Today	0.012		kW
Maximum Demand this month	0.6		kW

Power Demand Chart



Power Demand Control					
Increment Time	30	Sec(s)		Output(-100 % ~ 100%)	-100 %
Unload					
1st Stage >	+	10	%	DO-1 (Close)	Open ▾
2nd Stage >	+	30	%	DO-2 (Close)	Open ▾
3rd Stage >	+	50	%	DO-3 (Close)	Open ▾
4th Stage >	+	80	%	DO-4 (Open)	Open ▾
Load					
1st Stage <	-	10	%	DO-1 (Close)	Close ▾
2nd Stage <	-	30	%	DO-2 (Close)	Close ▾
3rd Stage <	-	50	%	DO-3 (Close)	Close ▾
4th Stage <	-	80	%	DO-4 (Open)	Close ▾
					Save

The setting, display and load shedding control of power demand.

Black curve: The accumulation of KW.

Green curve: Estimated accumulation of KW in the end of demand period.

Red curve: The above estimated value higher than setpoint.

The equation of demand controller as below:

$$[(EPD-TPD)/TPD]*100\%=D \quad Output_{s+1}=(D/I)+Output_s$$

Note:

EPD: Estimated Power Demand

TPD: Target Power Demand

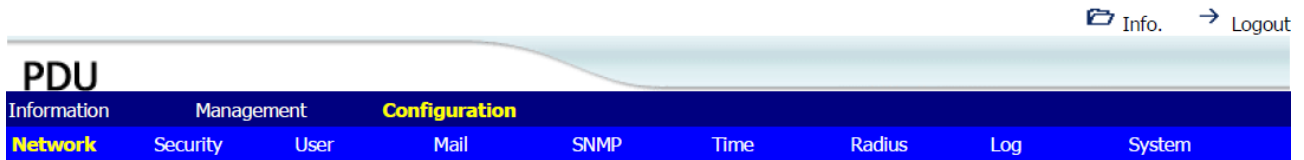
D: Deviation

S: Second

I: Increment Time(0~999s)

Range of Output: -100%~100%

Configuration



Network

IPv4 Configuration	
Hostname	IPP
DHCP enable	<input checked="" type="radio"/> Active <input type="radio"/> Inactive
IP Address	192.168.0.34
Subnet Mask	255.255.255.0
Default Gateway Address	192.168.0.1
DNS Server 1	211.78.130.2
DNS Server 2	168.95.1.1
<input type="button" value="Apply"/>	

IPv6 Configuration	
IPv6 Enable	<input checked="" type="checkbox"/>
Manual Configuration Address	192:168:0::127 / 120
Default Gateway Address	192:168:0::1
<input type="button" value="Apply"/>	

Wireless Configuration	
Wireless Enable	<input type="checkbox"/>
Auth	WPA2-AES ▾
SSID	
Password	
<input type="button" value="Apply"/>	

IP Address Related Configuration.

Wireless Configuration:

1. Install USB wifi dongle
2. Set "Wireless Configuration" in the "Network Information"
3. Restart IPP after the "Wireless Configuration" setting is completed.

Note:

The default setting for the way to get IP address is DHCP. If PDU cannot get the IP from DHCP server, the IP address will stay at 192.168.0.132.

The maximum length of host name is 36 characters.

Security

HTTP Configuration	
SSL	<input type="checkbox"/>
Redirect HTTP to HTTPS	<input type="checkbox"/>
Port Number	<input type="text" value="80"/>
<input type="button" value="Apply"/>	

IP Filter	
<input type="text"/>	<input type="button" value="Add"/>

Access Setup for Web, SSL, SSH and Telnet

Note: Default login ID is snmp and password is 1234 for SSH and Telnet.

User

Users (Max. 8 users)					
No.	User	New Password	Confirm	Permission	Email
01	snmp	<input type="text"/>	<input type="text"/>	Administrator	<input type="text"/>
02	usr	<input type="text"/>	<input type="text"/>	View Only	<input type="text"/>
					<input type="button" value="New"/>

Users can add up to 8 accounts.

Admin: Full authority to monitor, control and configure PDU

Default ID is snmp, password is 1234

(Access Information/ Management/ Configuration)

Power user: Monitor PDU, control the specified outlets. No permission to configure PDU.

Default Password: password

(Access Information/ Management)

View Only: Monitor PDU only. No permission to control and configure PDU.

Default Password: password

(Access Information)

Mail

Mail Configuration	
Email Server	<input type="text" value="smtp.gmail.com"/>
Port Number	<input type="text" value="587"/>
TLS/SSL	<input type="text" value="Yes"/>
Email Server Requires Authentication	<input type="text" value="Yes"/>
Account	<input type="text"/>
Password	<input type="text"/>
Test	<input type="text" value="example@gamil.com"/> <input type="button" value="Send"/>
<input type="button" value="Apply"/>	

Mail Server Configuration

Send out alert message to pre-defined account when event occurs.

SNMP

SNMP Configuration

SNMP Enable	<input checked="" type="radio"/> Active <input type="radio"/> Inactive
System Name	IPP-S
System Contact	admin
System Location	office
Device	

Communication Configuration v1 & v2

No.	Access Type	Community
1.	read-only	public
2.	read-write	private
3.	Not Accessible	
4.	Not Accessible	
5.	Not Accessible	
6.	Not Accessible	
7.	Not Accessible	
8.	Not Accessible	
Apply		

Communication Configuration v3

No.	Access Type	User	Auth Type	Authentication	Encryption
1.	Not Accessible		noauth	MD5	AES
2.	Not Accessible		noauth	MD5	AES
3.	Not Accessible		noauth	MD5	AES
4.	Not Accessible		noauth	MD5	AES
5.	Not Accessible		noauth	MD5	AES
6.	Not Accessible		noauth	MD5	AES
7.	Not Accessible		noauth	MD5	AES
8.	Not Accessible		noauth	MD5	AES
Apply					

Trap Configuration v1 & v2

No.	Enable	IP Address	Community
1.	No		
2.	No		
3.	No		
4.	No		
Apply			

Trap Configuration v3

No.	Enable	IP Address	User	Auth Type	Authentication	Encryption
1.	No			noauth	MD5	AES
2.	No			noauth	MD5	AES
3.	No			noauth	MD5	AES
4.	No			noauth	MD5	AES
Apply						

Simple Network Management Protocols Configuration: Support SNMPv1, v2 and v3.

Time

Time Configuration

Set Date	2017 Year 04 Month 25 Day
Set Time	10 : 50 : 44 (hh:mm:ss)
Apply	

SNTP Configuration

SNTP	<input type="radio"/> Active <input checked="" type="radio"/> Inactive
Primary Timer Server	pool.ntp.org
Secondary Time Server	asia.pool.ntp.org
Time Between Automatic Updates	10 mins
Time Zone (Relative to GMT)	GMT
Apply	

Time by NTP or Manually for Schedule and Log record

Radius

Radius Configuration	
Radius	Disable ▾
Primary Server	<input type="text"/>
Shared Secret	<input type="text"/>
Port Number	<input type="text"/>
Timeout	<input type="text"/>
Retries	<input type="text"/>
Secondary Server	<input type="text"/>
Shared Secret	<input type="text"/>
Port Number	<input type="text"/>
Timeout	<input type="text"/>
Retries	<input type="text"/>
<input type="button" value="Apply"/>	

System supports the Remote Authentication Dial-in User Service protocol (RADIUS). It provides a centralized network protocol to enable remote authentication and authorization.

Log

Export Data Configuration	
Event Log	<input type="button" value="Export"/>
Data Log	<input type="button" value="Export"/>
kWh Monthly Report / Send on	<input type="button" value="Modify"/>

Syslog Configuration	
Primary Server	<input type="text"/>
Secondary Server	<input type="text"/>
Port Number	<input type="text"/>
<input type="button" value="Apply"/>	

Data Log Configuration	
Data Log Interval	Every 10 min(s) ▾
<input type="button" value="Apply"/>	

Heartbeat Trap Configuration	
Heartbeat Interval	<input checked="" type="checkbox"/> Disable
	<input type="text"/> second(s)
<input type="button" value="Apply"/>	


Event Log Configuration	
System Events	Enable
User Login	<input checked="" type="checkbox"/>
User Logout	<input checked="" type="checkbox"/>
System Configuration Change	<input checked="" type="checkbox"/>
Power Events	Enable
Current out of Warning Threshold	<input checked="" type="checkbox"/>
Current out of Overload Threshold	<input checked="" type="checkbox"/>
Current back to Normal	<input checked="" type="checkbox"/>
Current overload is removed	<input checked="" type="checkbox"/>
ENV Events	Enable
ENV Threshold	<input checked="" type="checkbox"/>
ENV back to Normal	<input checked="" type="checkbox"/>
Digital I / O	Enable
Digital Output	<input checked="" type="checkbox"/>
Digital Input	<input checked="" type="checkbox"/>
<input type="button" value="Apply"/>	

Export: Export events and data log in text format. Set the date to mail kWh usage information.

Syslog: Sent event log to the specified Syslog server.
 Heartbeat Trap: Send trap to the specified IP to indicate PDU is alive.
 Event Log: Check the box to enable to log the specified event

System


Language / 語言	
English ▼	
System Configuration	
Configuration Export	Export
Configuration Import	瀏覽... Upload
Update	
Firmware Upgrade	
Firmware Upload	瀏覽... Upload
Update Update and Reset	
Reset System	
<input checked="" type="radio"/>	Reset All Setting Back to Factory Default
<input type="radio"/>	Reset All Setting Back to Factory Default Excludes IP Address
Apply	
Auto Logout	
No ▼ minute(s)	
Apply	
Temperature Scale	
<input checked="" type="radio"/>	Celsius C
<input type="radio"/>	Fahrenheit F
Apply	
Cloud	
APP ID	001348028AA0
Enable	<input checked="" type="checkbox"/>
Password	
Apply	





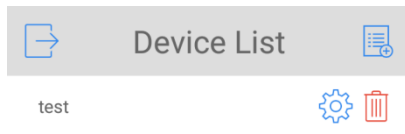
Configuration files export and Import, Firmware Upgrade, Reset Functions.

System: Export to backup system configuration. Import system configuration from backup file.
 Reset System: Restart network system through web.
 Auto Logout: The time setting for auto logout.
 Temperature Scale: The conversion between Celsius and Fahrenheit.
 Cloud: Provide APP ID, QR code and Password for the setting on mobile phone.

Mobile app

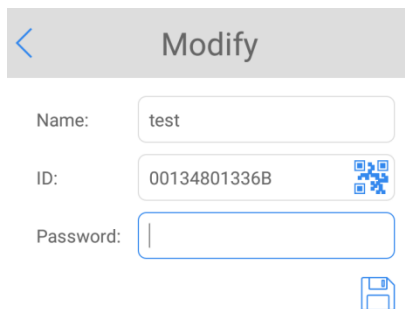
Scan the QR code on catalog or down load IPP Secure app  from Google play.

1. Click icon  on your mobile phone to open DGP IPP Secure app.
2. Click icon  on Device List to enter Modify page.

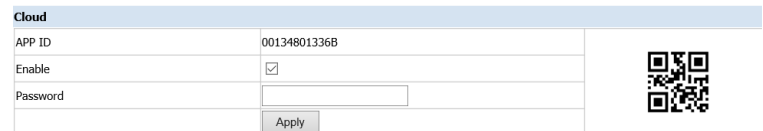


3. Modify the ID consistent with APP ID on web page.
4. Enter preferred NAME and Password (or Password keep in blank).

Mobile phone->Device List->Modify



Web Page ->Configuration->System->Cloud



5. Back to Device List and click test to open Measurement List.

< Measurement List	
Circuit4	
Circuit5	
Circuit6	
Circuit7	
Circuit8	
Circuit9	
Circuit10	
Circuit11	
Circuit12	
Env-1	
Env-2	

< Information	
Temperature	28 C
Humidity	47 %
Status of Temperature	Normal
Status of Humidity	Normal
Status of Device	Enable
Time : 2015-08-04 02:31:29	

< Information	
Load	1
CT Number	1,0,0
V	109.62 V
A	0.00 A
PF	1.00
kW	0.000 W
kWh	124.815 kWh
Status	Normal
Time : 2015-08-04 02:30:26	