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DPMSoft User Manual

DPMSOFT User Manual

Revision History

Version	Revision	Date
1 st	The first version was published.	2018/12/12
2 nd	The second version was published.	2020/4/30
3 rd	<ol style="list-style-type: none"> 1.Chapter 1: All images concerning DPMSOFT interface are changed. 2.Chapter 2: All images concerning communication setting are changed. 3.Add section 3.16: Phasor Diagram. 4.Add section 3.17: Last Month TOU. 5.Add section 3.18: Time of Use Max Demand. 6.Chapter 4.1: Add content concerning Ethernet, Pulse Output, Default Page Display in the Meter, and Energy Unit Display in the Meter. 7.Chapter 4.2: Change images and add content concerning CO₂ Emission, Data Word Order, Password Modification, Alarm, and TOU. 8. Add section 4.4: Data Log-DA5X0. 	2020/11/20
4 th	<ol style="list-style-type: none"> 1.Add description concerning webpage operations for multi-loop models as well as settings to collapse and expand the operate area at the beginning of chapter3. 2.Update explanatory pictures in chapter 3.1 to 3.18. 3.Add section 3.14: Alarm History. 4.Update heading numberings in chapter 4. 5.Add content concerning multi-loop function to section 4.1.2 Transformer Ratio. 6.Add section 4.1.3: Current Transformer. 7.Add section 4.1.5: Power System. 8.Add explanation and update pictures relating to Relay Output in section 4.1.6 Alarm. 9.Update section 4.1.7: Communications 10.Update section 4.1.9: Demand. 11.Update section 4.1.11: BACnet Device ID. 12.Add descriptions concerning relay outputs to section 4.1.13 DIDO Setting. 13.Add content concerning multi-loop function to section 4.1.15 Pulse Output. 14.Add explanation and update pictures in section 4.1.17 Display Unit Format in the Meter. 15.Add explanation and update pictures in section 4.1.18 Display Unit Format. 16.Add section 4.1.19: Value Low Cut. 17.Add section 4.1.20: Loop Quantity. 18.Add section 4.1.21: Back Light Time in the Meter. 19.Add section 4.1.22: Custom Page Display in the Meter. 20.Add section 4.1.23: Data Word Order. 21.Update section 4.2.3 Display of Numerical Values in the Meter. 22.Add explanation and update pictures in section 4.2.4 Display Unit Format. 	2021/7/26

Version	Revision	Date
	23.Add section 4.2.14: Custom Page in the Meter (Summary-P) 24.Add section 4.2.15: Summary Display Order in the Meter. 25.Add section 4.2.16: Digital Input. 26.Add section 4.2.17: Relay Output Setting. 27.Add section 4.2.18: Back Light Time in the Meter. 28.Add section 4.2.19: Reset Loop Parameter. 29.Add explanatory pictures in chapter 4.3 Data Log. 30.Change the title of chapter 4.4 to Data Log-DA Series/MA Series.	

DPMSoft User Manual

Contents

Chapter 1 Introduction to DPMSoft

1.1 Overview	1-2
1.2 Install DPMSoft	1-2
1.3 Uninstall DPMSoft.....	1-4

Chapter 2 DPMSoft Connections

2.1 Serial Port Communication Settings	2-2
2.2 TCP/IP Network Connections	2-4

Chapter 3 DPMSoft Screen Display

3.1 Information.....	3-3
3.2 Voltage.....	3-4
3.3 Current.....	3-4
3.4 Power Factor	3-5
3.5 Power.....	3-5
3.6 Energy.....	3-6
3.7 Total Harmonic Distortion (THD)	3-6
3.8 Harmonic.....	3-7
3.9 Demand.....	3-7
3.10 Maximum	3-8
3.11 Alarm	3-8
3.12 Minimum	3-9
3.13 Group	3-9

3.14 Alarm History	3-14
3.15 Tariff	3-16
3.16 Phasor Diagram	3-16
3.17 Last Month TOU.....	3-17
3.18 Time of Use Max Demand	3-17

Chapter 4 DPMSOft Settings

4.1 System Setting.....	4-3
4.1.1 Meter Information	4-3
4.1.2 Transformer Ratio	4-4
4.1.3 Current Transformer	4-6
4.1.4 System	4-6
4.1.5 Power System.....	4-7
4.1.6 Alarm	4-8
4.1.7 Communications	4-11
4.1.8 Date.....	4-12
4.1.9 Demand.....	4-13
4.1.10 Meter Reset	4-14
4.1.11 BACnet Device ID	4-14
4.1.12 Settings for Wifi Reuters.....	4-15
4.1.13 DIDO Settings.....	4-17
4.1.14 Ethernet.....	4-18
4.1.15. Pulse Output.....	4-19
4.1.16 Default Page Display in the Meter	4-20
4.1.17 Display Unit Format in the Meter.....	4-21
4.1.18 Display Unit Format	4-21
4.1.19 Value Low Cut.....	4-22
4.1.20 Loop Quantity	4-22

4.1.21	Back Light Time in the Meter	4-23
4.1.22	Custom Page Display in the Meter	4-23
4.1.23	Data Word Order	4-24
4.2	Advance Setting	4-24
4.2.1	Auto Recording	4-25
4.2.2	Auto Phase Sequence	4-26
4.2.3	Display of Numerical Values in the Meter	4-26
4.2.4	Display Unit Format.....	4-27
4.2.5	EUI Setting	4-27
4.2.6	Auto Reset Max and Min Interval.....	4-28
4.2.7	Energy Saving.....	4-29
4.2.8	Tariff.....	4-30
4.2.9	Carbon Dioxide Emissions	4-31
4.2.10	Data Word Order	4-32
4.2.11	Password Modification	4-33
4.2.12	Alarm.....	4-33
4.1.13	TOU.....	4-35
4.2.14	Custom Page in the Meter (Summary-P)	4-37
4.2.15	Summary Display Order in the Meter	4-38
4.2.16	Digital Input.....	4-39
4.2.17	Relay Output Setting	4-40
4.2.18	Back Light Time in the Meter	4-42
4.2.19	Reset Loop Parameter	4-42
4.3	Data Log.....	4-43
4.4	Data Log-DA Series/MA Series	4-47

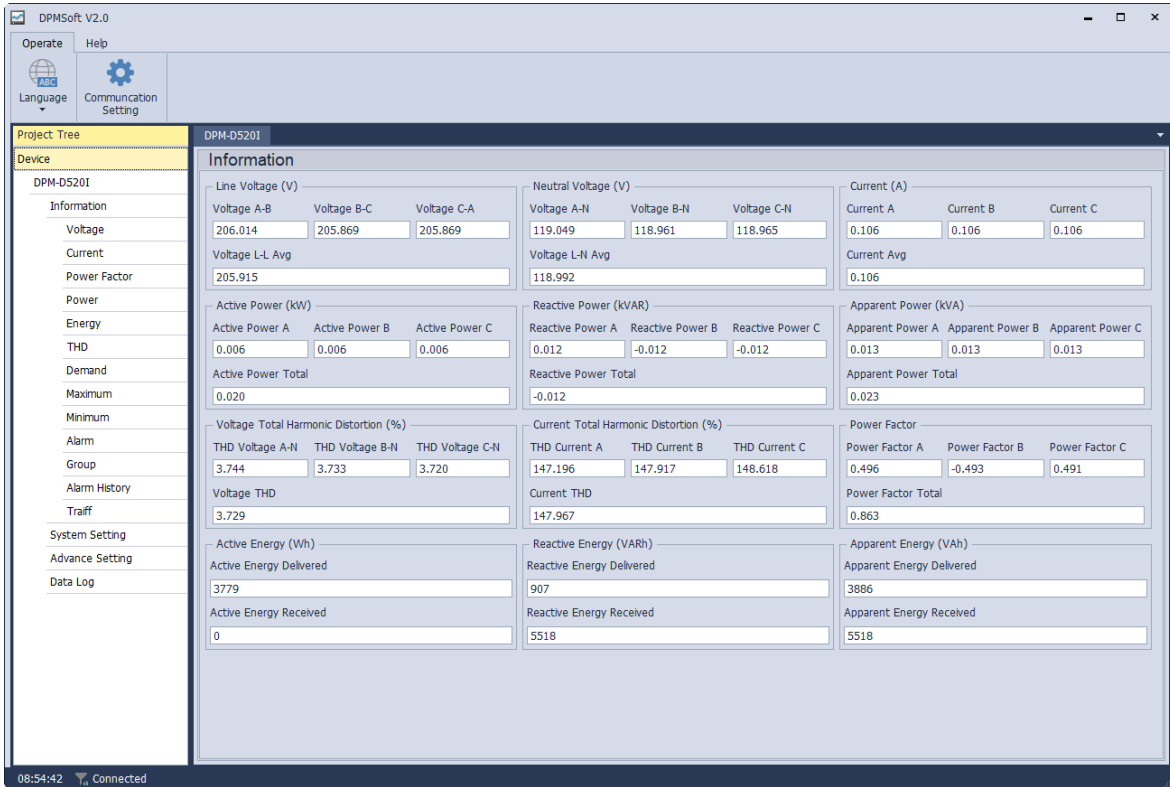
Chapter 1 Introduction to DPMSoft

Table of Contents

- 1.1 Overview1-2
- 1.2 Install DPMSoft1-2
- 1.3 Uninstall DPMSoft.....1-5

1.1 Overview

DPMSOft is a software designed to read data from Delta power meters and complete setups including communications, current transformers (CT) and alarms. In addition, DPMSOft supports advanced functions of power meter DPM Series, such as auto recording, data storage as well as data import and export.



1.2 Install DPMSOft

Download DPMSOft via Delta Electronics official website: <http://www.deltaww.com/>

Software Info:

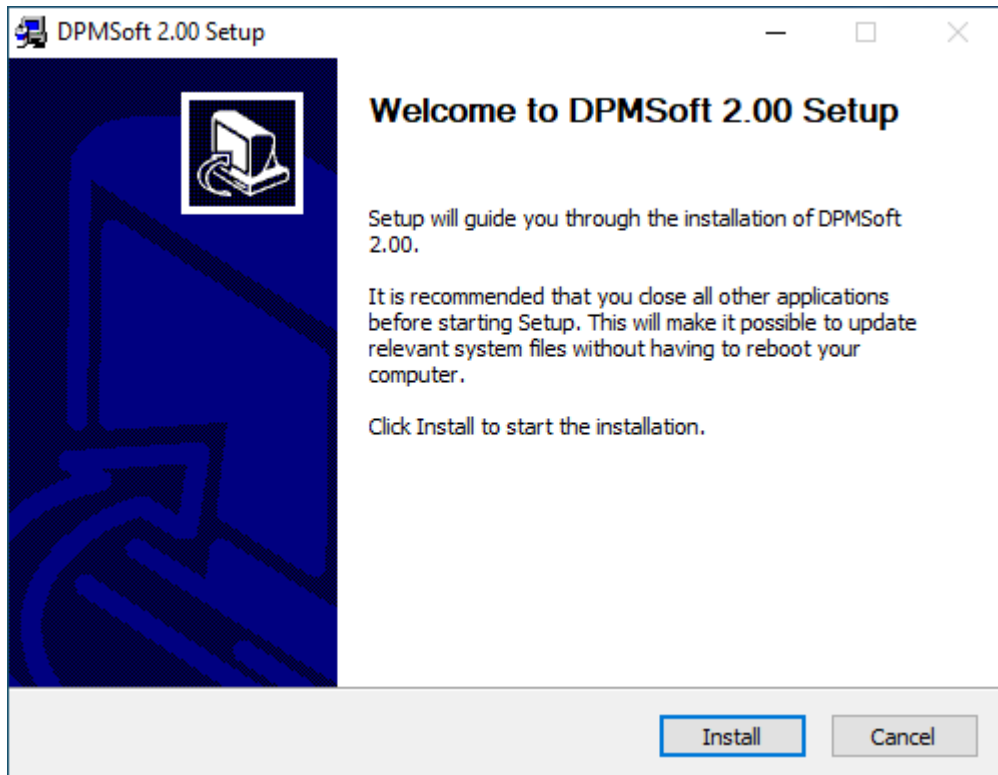
Operating system (Windows 7/8/10)

Steps to installing DPMSOft:

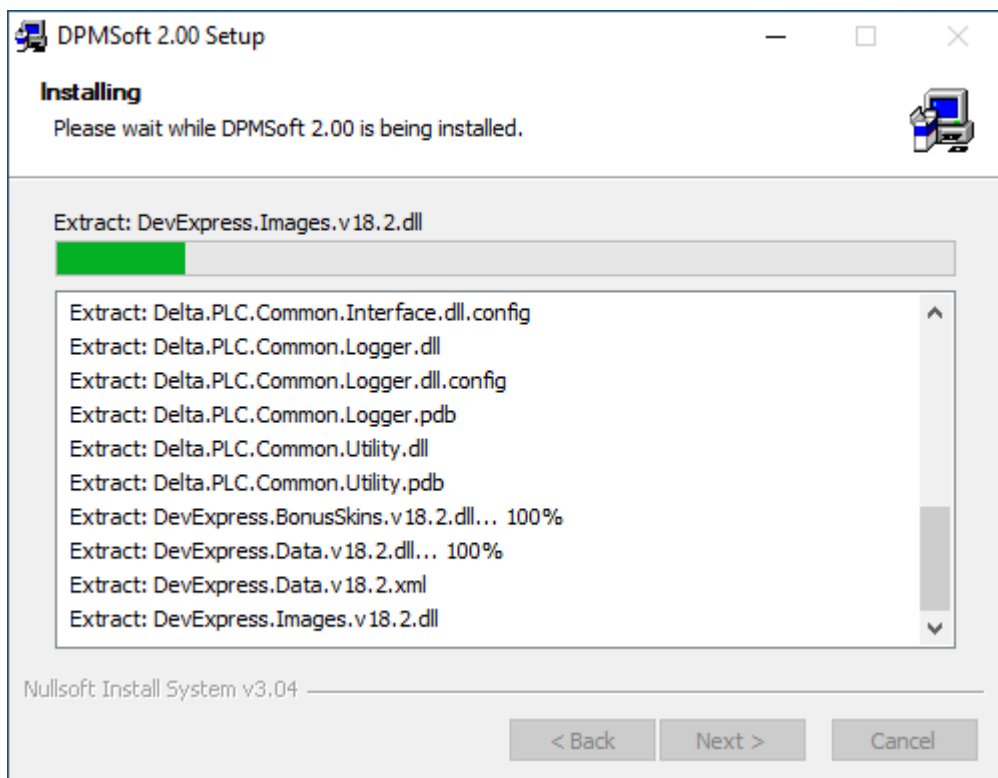
- (1) Open the compressed file and double click "DPMSOft 2.00" installer for setup.



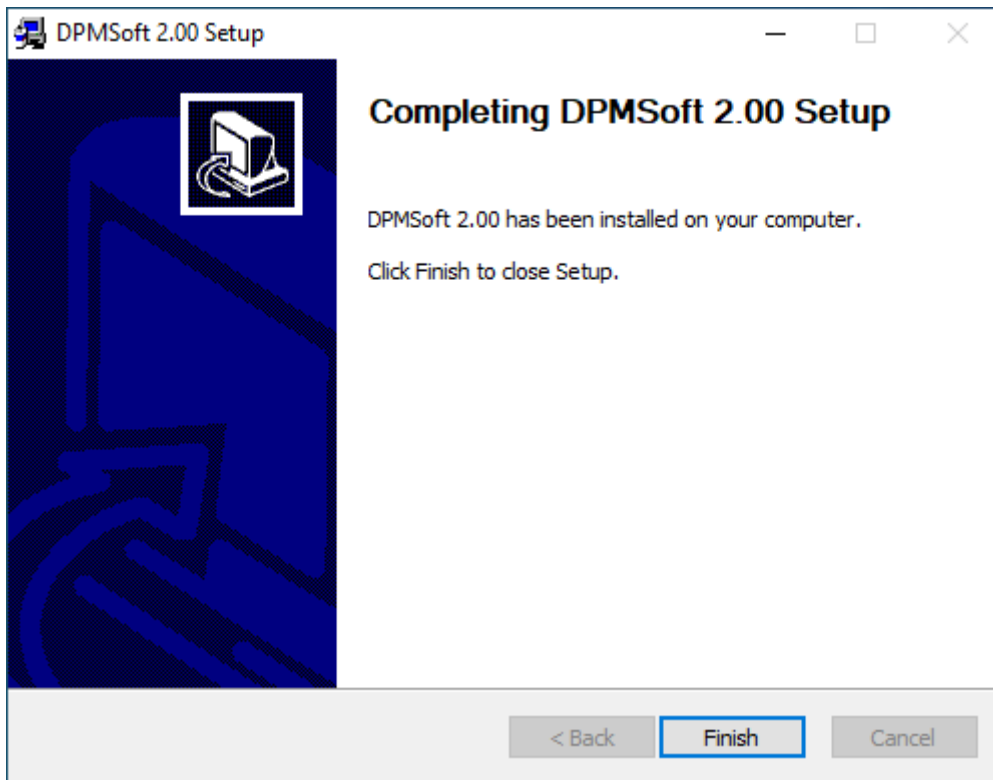
- (2) Click “Install” when entering the DPMSOft 2.00 setup page (see below).



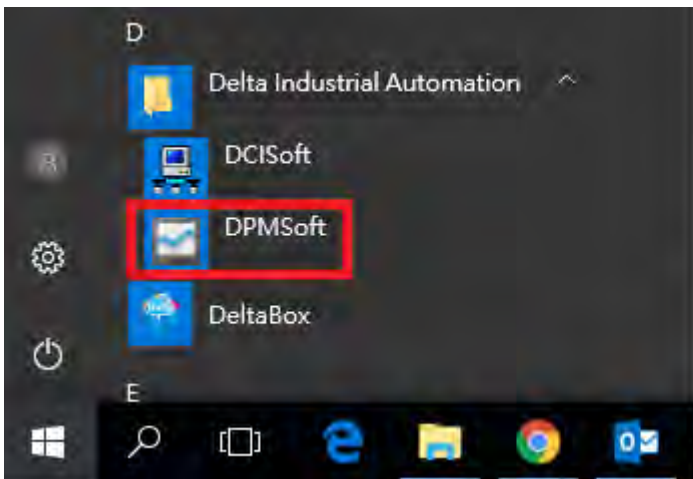
- (3) Wait for the installation to complete.



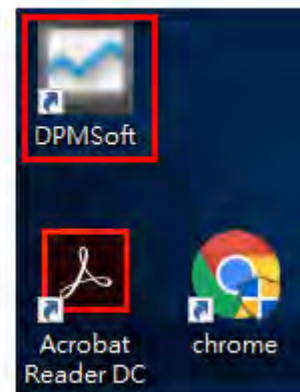
- (4) Click "Finish" to complete the setup.



- (5) A desktop shortcut will be created automatically after installation completed, which can also be found in Control Panel. Click the shortcut to activate DPMSOft. In addition, DPMSOft allows multiple software programs to function simultaneously on your PC.



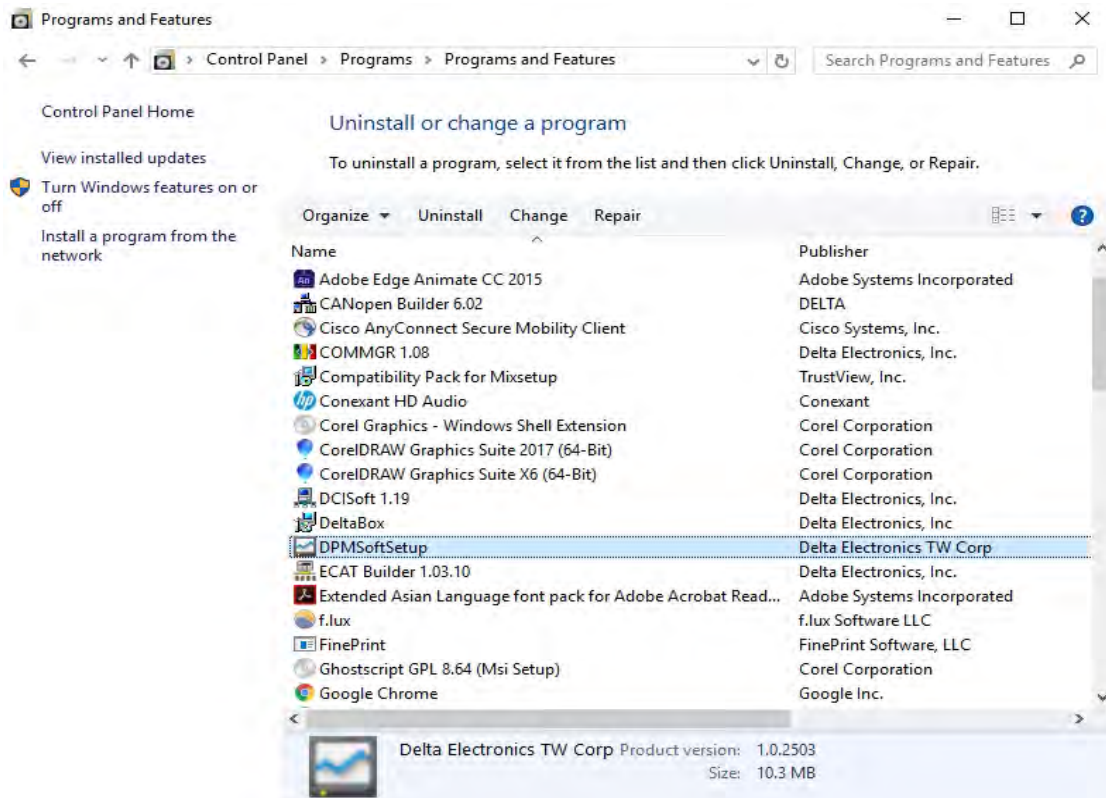
OR



1.3 Uninstall DPMSOFT

To uninstall DPMSOFT:

Enter “Control Panel” and select **DPMSOFTSetup** listed in the “Uninstall or change a program” page to remove the software.



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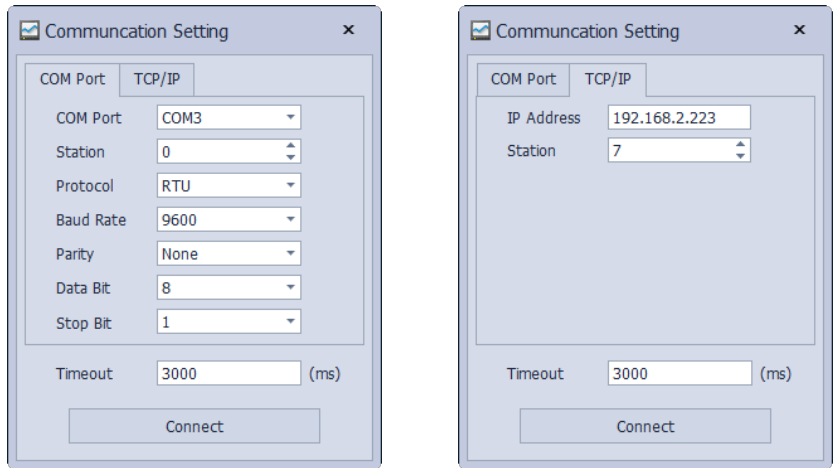
Chapter 2 DPMSoft Connections

Table of Contents

2.1 Serial Port Communication Settings 2-2

2.2 TCP/IP Network Connections 2-4

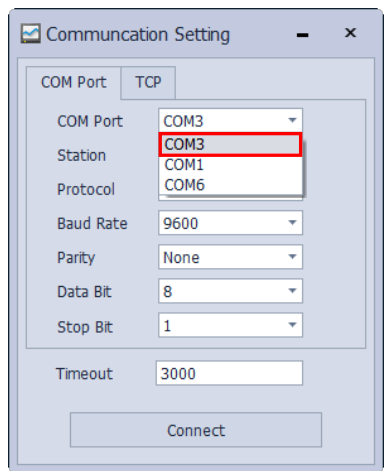
Double click the installed DPMSOft icon and a pop-up window for connection will appear. There are two methods for connecting the DPMSOft to the power meter; one is serial port communication (see bottom left) and the other is TCP/IP network connections (see bottom right).



2.1 Serial Port Communication Settings

- **Steps to set up serial port communication:**

(1) Select a COM Port.



- (2) Input the slave station, communication mode, Baud rate, data bit, parity, stop bit of the power meter. Enter the required timeout (ms) and the command speed for DPMSOft.

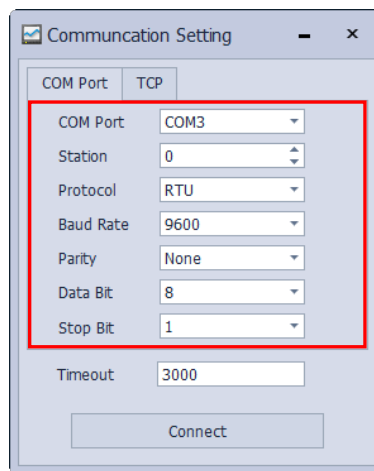
Communication Mode: RTU/ ASCII

Baud Rate: 9600/ 19200/ 38400

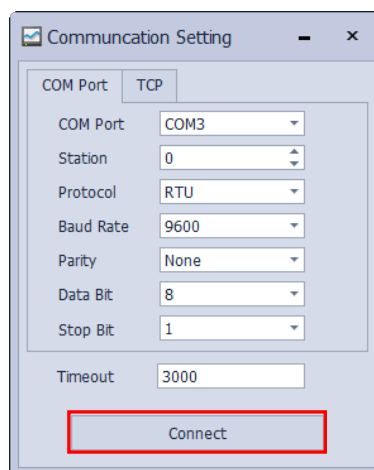
Parity: NONE/ EVEN/ ODD

Data Bit: 7/ 8

Stop Bit: 1/ 2



- (3) After the setup, connect to the power meter by clicking "Connect". For successful connection, the DPMSOft main page window will pop-up; for unsuccessful connection, a pop-up window will appear to point out the connection failure.

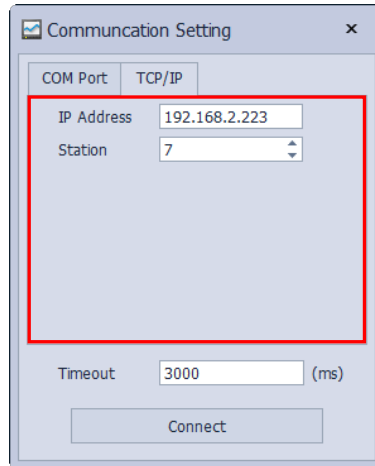


2.2 TCP/IP Network Connections

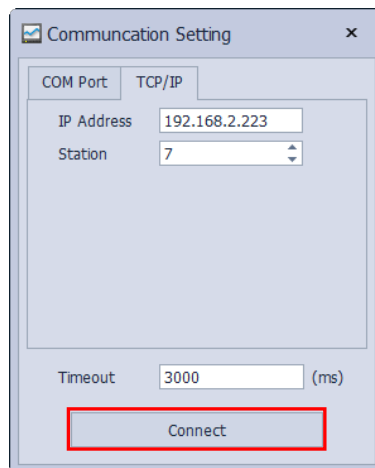
- **Steps to set up TCP/IP Network Connections:**

- (1) Setup the IP address and station of the power meter. When the RS-485 is used to communicate between the power meter and Ethernet converter, enter the IP address, station of the router and the required timeout (ms) based on your needs

2



- (2) When setup is completed, connect to the power meter by clicking "Connect". For successful connection, the DPMSOFT main page window will pop-up; for unsuccessful connection, a pop-up window will appear to issue the connection failure.



The DPMSOft main page window (see below) pops-up when connection is successful.

The screenshot displays the DPMSOft V2.0 software interface. The main window title is "DPMSOft V2.0". The interface includes a menu bar with "Operate" and "Help", and a toolbar with "Language" and "Communication Setting". A "Project Tree" on the left lists the device "DPM-D5201" and its various settings. The central "Information" panel for "DPM-D5201" is divided into several sections:

- Line Voltage (V):** Voltage A-B (206.014), Voltage B-C (205.869), Voltage C-A (205.869).
- Neutral Voltage (V):** Voltage A-N (119.049), Voltage B-N (118.961), Voltage C-N (118.965).
- Current (A):** Current A (0.106), Current B (0.106), Current C (0.106), Current Avg (0.106).
- Active Power (kW):** Active Power A (0.006), Active Power B (0.006), Active Power C (0.006), Active Power Total (0.020).
- Reactive Power (kVAR):** Reactive Power A (0.012), Reactive Power B (-0.012), Reactive Power C (-0.012), Reactive Power Total (-0.012).
- Apparent Power (kVA):** Apparent Power A (0.013), Apparent Power B (0.013), Apparent Power C (0.013), Apparent Power Total (0.023).
- Voltage Total Harmonic Distortion (%):** THD Voltage A-N (3.744), THD Voltage B-N (3.733), THD Voltage C-N (3.720), Voltage THD (3.729).
- Current Total Harmonic Distortion (%):** THD Current A (147.196), THD Current B (147.917), THD Current C (148.618), Current THD (147.967).
- Power Factor:** Power Factor A (0.496), Power Factor B (-0.493), Power Factor C (0.491), Power Factor Total (0.863).
- Active Energy (Wh):** Active Energy Delivered (3779), Active Energy Received (0).
- Reactive Energy (VARh):** Reactive Energy Delivered (907), Reactive Energy Received (5518).
- Apparent Energy (VAh):** Apparent Energy Delivered (3886), Apparent Energy Received (5518).

The status bar at the bottom left shows the time "08:54:42" and the connection status "Connected".

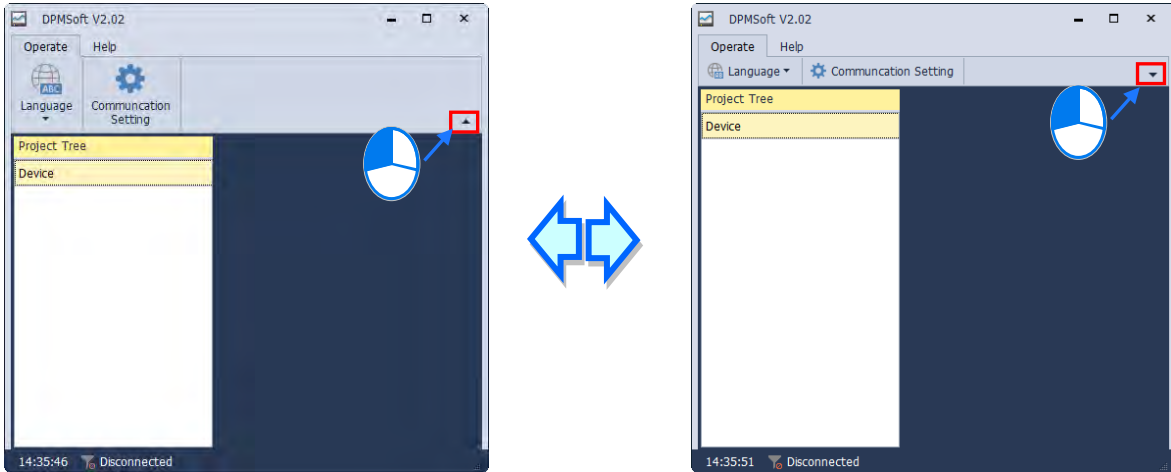
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Chapter 3 DPMSoft Screen Display

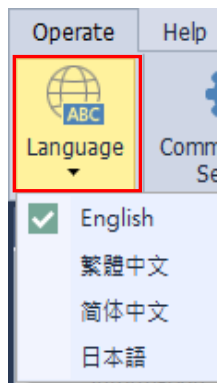
Table of Contents

3.1	Information	3-3
3.2	Voltage	3-4
3.3	Current	3-4
3.4	Power Factor	3-5
3.5	Power	3-5
3.6	Energy	3-6
3.7	Total Harmonic Distortion (THD)	3-6
3.8	Harmonic	3-7
3.9	Demand	3-7
3.10	Maximum	3-8
3.11	Minimum	3-8
3.12	Alarm	3-9
3.13	Group	3-9
3.14	Alarm History	3-14
3.15	Tariff	3-16
3.16	Phasor Diagram	3-16
3.17	Last Month TOU	3-17
3.18	Time of Use Max Demand	3-17

Click ▲ to close the operate area and click again to expand as shown in follows. The position and size of the window as well as settings in the operate area would be remembered across software restarts.

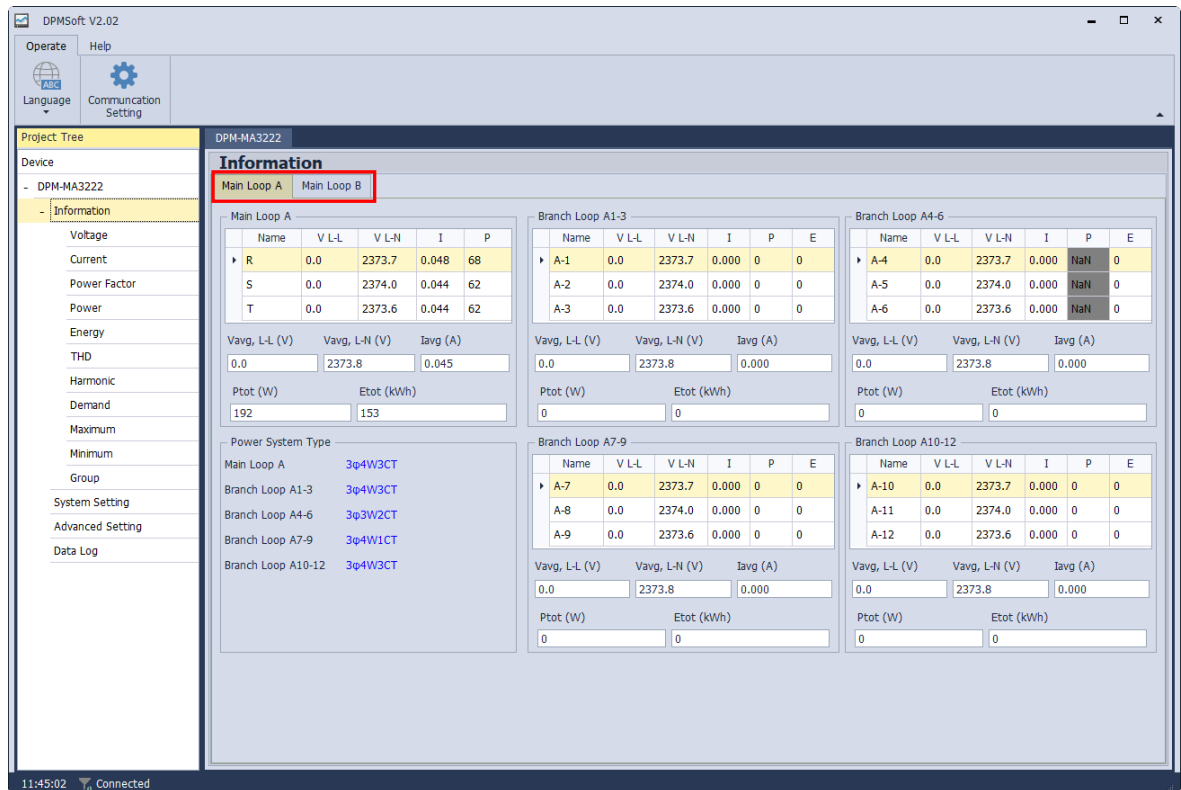


When DPMSoft and the Delta power meter is successfully connected, the software interface displays the language such as English, Traditional Chinese or Simplified Chinese base on the Windows system. To change the displayed language, select the Language menu on the upper right corner of the page and choose the desired language.



The DPMSoft screen displays including Information, Voltage, Current, Power Factor, Power, Energy, Total Harmonic Distortion (THD), Demand, Maximum, Minimum, Alarm, Group, Alarm History and Tariff with explanations in the following sections.

For multi-loop type models, you can switch the information page of the target loop with the tabs shown in the following figure.



3

3.1 Information

The page displays most commonly used parameters for measurements including voltage, neutral voltage, current, active power, reactive power, apparent power, active energy, power factor as well as voltage and current total harmonic distortions.



3.2 Voltage

The page displays the average voltage and voltage per phase, voltage unbalance rate as well as the average, phase to phase and unbalance rate value of line voltage.

- Click “Voltage” in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A					
Device		Voltage					
	Index	Name	Description	Value	Unit	Register	
- DPM-C530A	1	Van	Voltage A-N	NaN	V	100H, 101H	
- Information	2	Vbn	Voltage B-N	NaN	V	102H, 103H	
Voltage	3	Vcn	Voltage C-N	NaN	V	104H, 105H	
Current	4	Vavg	Voltage L-N Avg	NaN	V	106H, 107H	
Power Factor	5	Vab	Voltage A-B	807.186	V	108H, 109H	
Power	6	Vbc	Voltage B-C	804.459	V	10AH, 10BH	
Energy	7	Vca	Voltage C-A	806.045	V	10CH, 10DH	
THD	8	Vavg	Voltage L-L Avg	806.032	V	10EH, 10FH	
Harmonic	9	Van	Voltage Unbalance A-N	NaN	%	110H, 111H	
Demand	10	Vbn	Voltage Unbalance B-N	NaN	%	112H, 113H	
Maximum	11	Vcn	Voltage Unbalance C-N	NaN	%	114H, 115H	
Minimum	12	Vtot	Voltage Unbalance L-N Worst	NaN	%	116H, 117H	
Alarm	13	Vab	Voltage Unbalance A-B	0.140	%	118H, 119H	
Group	14	Vbc	Voltage Unbalance B-C	0.130	%	11AH, 11BH	
Alarm History	15	Vca	Voltage Unbalance C-A	0.000	%	11CH, 11DH	
Tariff	16	Vtot	Voltage Unbalance L-L Worst	0.140	%	11EH, 11FH	
System Setting							

3.3 Current

The page displays current, current unbalance rate value.

- Click “Current” in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A					
Device		Current					
	Index	Name	Description	Value	Unit	Register	
- DPM-C530A	1	Ia	Current A	1949.805	A	120H, 121H	
- Information	2	Ib	Current B	1949.805	A	122H, 123H	
Voltage	3	Ic	Current C	1959.804	A	124H, 125H	
Current	4	Iavg	Current Avg	1949.805	A	126H, 127H	
Power Factor	5	In	Current N	NaN	A	128H, 129H	
Power	6	Ia	Current Unbalance A	0.510	%	12AH, 12BH	
Energy	7	Ib	Current Unbalance B	0.000	%	12CH, 12DH	
THD	8	Ic	Current Unbalance C	0.510	%	12EH, 12FH	
Harmonic	9	Itot	Current Unbalance Worst	0.510	%	130H, 131H	
Demand							

3.4 Power Factor

The page displays power factor and displacement power factor per phase and in total.

- Click “Power Factor” in the project tree on the left side to enter the page (see below).

Project Tree		DPM-CS30A					
Device		Power Factor					
	Index	Name	Description	Value	Unit	Register	
- DPM-CS30A	1	PFtot	Power Factor Total	-0.656		132H, 133H	
- Information	2	PFa	Power Factor A	NaN		134H, 135H	
Voltage	3	PFb	Power Factor B	NaN		136H, 137H	
Current	4	PFc	Power Factor C	NaN		138H, 139H	
Power Factor	5	DPFtot	Displacement Power Factor Total	-1.000		13AH, 13BH	
Power	6	DPFa	Displacement Power Factor A	NaN		13CH, 13DH	
Energy	7	DPFb	Displacement Power Factor B	NaN		13EH, 13FH	
THD	8	DPFc	Displacement Power Factor C	NaN		140H, 141H	
Harmonic	9	Freq	Frequency	59.941	Hz	142H, 143H	
Demand							

3.5 Power

The page displays the active power, reactive power per phase and apparent power per phase and in total.

- Click “Power” in the project tree on the left side to enter the page (see below).

Project Tree		DPM-CS30A					
Device		Power					
	Index	Name	Description	Value	Unit	Register	
- DPM-CS30A	1	Pt	Active Power Total	1621.457	kW	144H, 145H	
- Information	2	Pa	Active Power A	NaN	kW	146H, 147H	
Voltage	3	Pb	Active Power B	NaN	kW	148H, 149H	
Current	4	Pc	Active Power C	NaN	kW	14AH, 14BH	
Power Factor	5	Qt	Reactive Power Total	-1881.531	kVAR	14CH, 14DH	
Power	6	Qa	Reactive Power A	NaN	kVAR	14EH, 14FH	
Energy	7	Qb	Reactive Power B	NaN	kVAR	150H, 151H	
THD	8	Qc	Reactive Power C	NaN	kVAR	152H, 153H	
Harmonic	9	St	Apparent Power Total	2480.091	kVA	154H, 155H	
Demand	10	Sa	Apparent Power A	NaN	kVA	156H, 157H	
Maximum	11	Sb	Apparent Power B	NaN	kVA	158H, 159H	
Minimum	12	Sc	Apparent Power C	NaN	kVA	15AH, 15BH	
Alarm							

3.6 Energy

The page displays active, reactive and apparent energy delivered or received, automated energy recording as well as fundamental wave active power.

- Click "Energy" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A					
Device		Energy					
		Index	Name	Description	Value	Unit	Register
- DPM-C530A	- Information	1	Et+	Active Energy Delivered	307637.800	kWh	15CH, 15DH
	Voltage	2	Et-	Active Energy Received	0.000	kWh	15EH, 15FH
	Current	3	Et+	Reactive Energy Delivered	29774.740	kVARh	160H, 161H
	Power Factor	4	Et-	Reactive Energy Received	325935.200	kVARh	162H, 163H
	Power	5	Et+	Apparent Energy Delivered	470890.300	kVAh	164H, 165H
	Energy	6	Et-	Apparent Energy Received	0.000	kVAh	166H, 167H
	THD	7	Et+ + Et-	Active Energy Delivered add Received	307637.800	kWh	168H, 169H
	Harmonic	8	Et+ - Et-	Active Energy Delivered minus Received	307637.800	kWh	16AH, 16BH
	Demand	9	Et+ + Et-	Reactive Energy Delivered add Received	355709.900	kVARh	16CH, 16DH
	Maximum	10	Et+ - Et-	Reactive Energy Delivered minus Received	-296160.400	kVARh	16EH, 16FH
	Minimum	11	Et+ + Et-	Apparent Energy Delivered add Received	470865.700	kVAh	170H, 171H

3.7 Total Harmonic Distortion (THD)

The page displays voltage THD and current THD in total as well as in per phase.

- Click "THD" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A					
Device		THD					
		Index	Name	Description	Value	Unit	Register
- DPM-C530A	- Information	1		THD Current A	136.691	%	174H, 175H
	Voltage	2		THD Current B	136.493	%	176H, 177H
	Current	3		THD Current C	136.271	%	178H, 179H
	Power Factor	4		THD Current N	NaN	%	17AH, 17BH
	Power	5		THD Voltage A-N	NaN	%	17CH, 17DH
	Energy	6		THD Voltage B-N	NaN	%	17EH, 17FH
	THD	7		THD Voltage C-N	NaN	%	180H, 181H
	Harmonic	8		THD Voltage A-B	2.975	%	182H, 183H
	Demand	9		THD Voltage B-C	2.919	%	184H, 185H
	Maximum	10		THD Voltage C-A	2.993	%	186H, 187H
	Minimum	11		Current THD	136.484	%	188H, 189H
	Alarm	12		Voltage THD	2.962	%	18AH, 18BH

3.8 Harmonic

The page displays voltage and current harmonic distortion of each phase from 1st to 31st.

- Click "Harmonic" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A					
Device		Harmonic					
	Index	Name	Description	Value	Unit	Register	
- DPM-C530A	1		1st voltage harmonic of Phase A	2.641	%	700H	
- Information	2		2nd voltage harmonic of Phase A	1.528	%	700H	
Voltage	3		3rd voltage harmonic of Phase A	1.523	%	700H	
Current	4		4th voltage harmonic of Phase A	0.318	%	700H	
Power Factor	5		5th voltage harmonic of Phase A	1.981	%	700H	
Power	6		6th voltage harmonic of Phase A	0.178	%	700H	
Energy	7		7th voltage harmonic of Phase A	0.282	%	700H	
THD	8		8th voltage harmonic of Phase A	0.181	%	700H	
Harmonic							

3

3.9 Demand

The page displays the present, last and next demand value. The list also shows the peak value and its occurring date and time.

- Click "Demand" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A						
Device		Demand						
	Index	Name	Description	Date	Time	Value	Unit	Register
- DPM-C530A	1	Now A	Present Current Demand			1019.898	A	18CH, 18DH
- Information	2	Last A	Last Current Demand			1949.805	A	18EH, 18FH
Voltage	3	Next A	Next Current Demand			1919.808	A	190H, 191H
Current	4	Peak A	Current Demand Peak	2020/10/28	19:18:10	1949.805	A	192H ~ 197H
Power Factor	5	Now kW	Present Active Power Demand			860.853	kW	198H, 199H
Power	6	Last kW	Last Active Power Demand			1627.637	kW	19AH, 19BH
Energy	7	Next kW	Next Active Power Demand			1621.217	kW	19CH, 19DH
THD	8	Peak kW	Active Power Demand Peak	2020/10/28	19:18:10	1627.637	kW	19EH ~ 1A3H
Harmonic	9	Now kVAR	Present Reactive Power Demand			-966.623	kVAR	1A4H, 1A5H
Demand	10	Last kVAR	Last Reactive Power Demand			-1876.672	kVAR	1A6H, 1A7H
Maximum	11	Next kVAR	Next Reactive Power Demand			-1871.752	kVAR	1A8H, 1A9H
Minimum	12	Peak kVAR	Reactive Power Demand Peak	2020/10/28	19:18:10	-1876.672	kVAR	1AAH ~ 1AFH
Alarm								

3.10 Maximum

The page displays the maximum values, date and time of parameters.

- Click "Maximum" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A								
Device		Maximum								
		Index	Name	Description	Date	Time	Value	Unit	Register	
- DPM-C530A		1	Vab Max	Line Voltage A-B Maximum	2020/10/23	20:52:26	810.836	V	200H ~ 205H	
- Information		2	Vbc Max	Line Voltage B-C Maximum	2020/10/23	20:52:26	808.516	V	206H ~ 208H	
Voltage		3	Vca Max	Line Voltage C-A Maximum	2020/10/23	20:52:26	809.676	V	20CH ~ 211H	
Current		4	Van Max	Phase Voltage A-N Maximum	1999/01/01	00:00:00	NaN	V	212H ~ 217H	
Power Factor		5	Vbn Max	Phase Voltage B-N Maximum	1999/01/01	00:00:00	NaN	V	218H ~ 21DH	
Power		6	Vcn Max	Phase Voltage C-N Maximum	1999/01/01	00:00:00	NaN	V	21EH ~ 223H	
Energy		7	Ia Max	Current Ia Maximum	2020/10/27	18:33:57	2069.793	A	224H ~ 229H	
THD		8	Ib Max	Current Ib Maximum	2020/10/27	18:33:57	2069.793	A	22AH ~ 22FH	
Harmonic		9	Ic Max	Current Ic Maximum	2020/10/27	18:33:57	2069.793	A	230H ~ 235H	
Demand		10	In Max	Current In Maximum	1999/01/01	00:00:00	NaN	A	236H ~ 23BH	
Maximum		11	Freq. Max	Frequency Maximum	2020/10/26	05:47:33	60.222	Hz	23CH ~ 241H	
Minimum		12	PFTot Max	Power Factor Maximum	2020/10/23	15:26:27	0.718		242H ~ 247H	
Alarm										

3.11 Minimum

The page displays the minimum values, date and time of parameters.

- Click "Minimum" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A								
Device		Minimum								
		Index	Name	Description	Date	Time	Value	Unit	Register	
- DPM-C530A		1	Vab Min	Line Voltage A-B Minimum	2020/10/28	10:24:53	773.334	V	300H ~ 305H	
- Information		2	Vbc Min	Line Voltage B-C Minimum	2020/10/28	10:24:53	770.666	V	306H ~ 308H	
Voltage		3	Vca Min	Line Voltage C-A Minimum	2020/10/28	10:24:53	771.774	V	30CH ~ 311H	
Current		4	Van Min	Phase Voltage A-N Minimum	1999/01/01	00:00:00	NaN	V	312H ~ 317H	
Power Factor		5	Vbn Min	Phase Voltage B-N Minimum	1999/01/01	00:00:00	NaN	V	318H ~ 31DH	
Power		6	Vcn Min	Phase Voltage C-N Minimum	1999/01/01	00:00:00	NaN	V	31EH ~ 323H	
Energy		7	Ia Min	Current Ia Minimum	2020/10/27	09:17:21	1589.841	A	324H ~ 329H	
THD		8	Ib Min	Current Ib Minimum	2020/10/27	09:17:19	1589.841	A	32AH ~ 32FH	
Harmonic		9	Ic Min	Current Ic Minimum	2020/10/27	09:17:19	1589.841	A	330H ~ 335H	
Demand		10	In Min	Current In Minimum	1999/01/01	00:00:00	NaN	A	336H ~ 33BH	
Maximum		11	Freq. Min	Frequency Minimum	2020/10/24	07:56:25	59.801	Hz	33CH ~ 341H	
Minimum		12	PFTot Min	Power Factor Minimum	2020/10/24	08:49:26	0.620		342H ~ 347H	
Alarm										

3.12 Alarm

The page displays the current alarm status, the number of alarm events as well as time and date. If the alarm is deactivated, the page background color is green; however, if the alarm is activated, the background color turns red.

- Click "Alarm" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A							
Device		Alarm							
- DPM-C530A		Index	Name	Description	Date	Time	Value	Unit	Register
- Information		1		Over Current Alarm Status	2020/10/27	09:35:20	2		400H ~ 405H
Voltage		2		Under Current Alarm Status	1999/01/01	00:00:00	0		406H ~ 40BH
Current		3		Over Neutral Current Alarm Status	1999/01/01	00:00:00	0		40CH ~ 411H
Power Factor		4		Over Line Voltage Alarm Status	1999/01/01	00:00:00	0		412H ~ 417H
Power		5		Under Line Voltage Alarm Status	1999/01/01	00:00:00	0		418H ~ 41DH
Energy		6		Over Phase Voltage Alarm Status	1999/01/01	00:00:00	0		41EH ~ 423H
THD		7		Under Phase Voltage Alarm Status	1999/01/01	00:00:00	0		424H ~ 429H
Harmonic		8		Over Volt Unbalance Alarm Status	1999/01/01	00:00:00	0		42AH ~ 42FH
Demand		9		Over Amp Unbalance Alarm Status	1999/01/01	00:00:00	0		430H ~ 435H
Maximum		10		Over Active Power Alarm Status	1999/01/01	00:00:00	0		436H ~ 43BH
Minimum		11		Over Reactive Power Alarm Status	1999/01/01	00:00:00	0		43CH ~ 441H
Alarm		12		Over Apparent Power Alarm Status	1999/01/01	00:00:00	0		442H ~ 447H
Group		13		Lead PF Alarm Status	1999/01/01	00:00:00	0		448H ~ 44DH

3.13 Group

The page displays the mapping value regarding the group parameter setting.

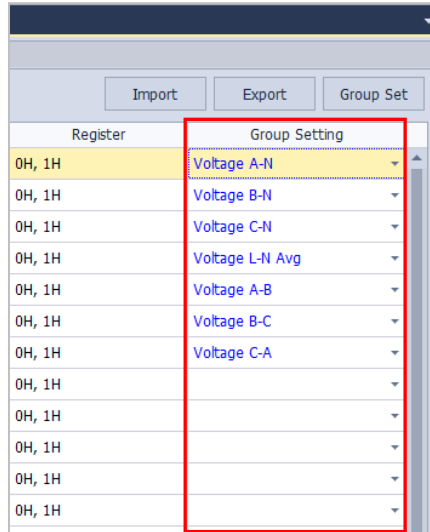
- Click "Group" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A							
Device		Group							
- DPM-C530A		Index	Name	Description	Value	Unit	Register	Group Setting	
- Information		1	Van	Voltage A-N	NaN	V	100H, 101H	Voltage A-N	
Voltage		2	Vab	Voltage A-B	802.375	V	108H, 109H	Voltage A-B	
Current		3	Vtot	Voltage Unbalance L-L Worst	0.140	%	11EH, 11FH	Voltage Unbalance L-L Worst	
Power Factor		4	Et+ - Et-	Active Energy Delivered minus Received	308119.500	kWh	16AH, 16BH	Active Energy Delivered minus Received	
Power		5	Et-	Apparent Energy Received	0.000	kVAh	166H, 167H	Apparent Energy Received	
Energy		6		Current THD	138.697	%	188H, 189H	Current THD	
THD		7		Voltage THD	2.863	%	18AH, 18BH	Voltage THD	
Harmonic		8	Vab	Voltage Unbalance A-B	0.140	%	118H, 119H	Voltage Unbalance A-B	
Demand		9	Vbc	Voltage Unbalance B-C	0.140	%	11AH, 11BH	Voltage Unbalance B-C	
Maximum		10	Vca	Voltage Unbalance C-A	0.000	%	11CH, 11DH	Voltage Unbalance C-A	
Minimum		11	PFb	Power Factor B	NaN		136H, 137H	Power Factor B	
Alarm		12	PFc	Power Factor C	NaN		138H, 139H	Power Factor C	
Group		13	DPFtot	Displacement Power Factor Total	-1.000		13AH, 13BH	Displacement Power Factor Total	
Alarm History									

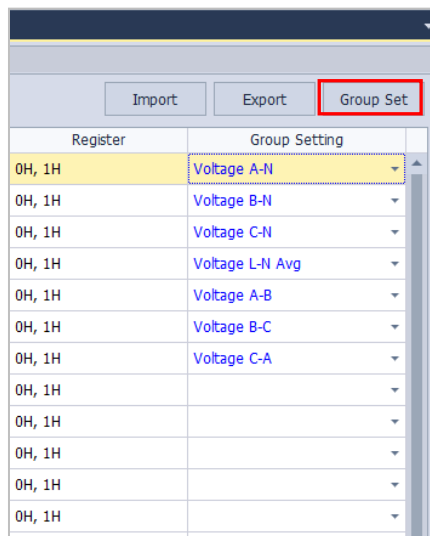
The Group page contains three useful buttons including “Group Set”, “Import” and “Export” with the following explanations.

- **Group Set:** The button displays the parameter data for setup through the following steps:

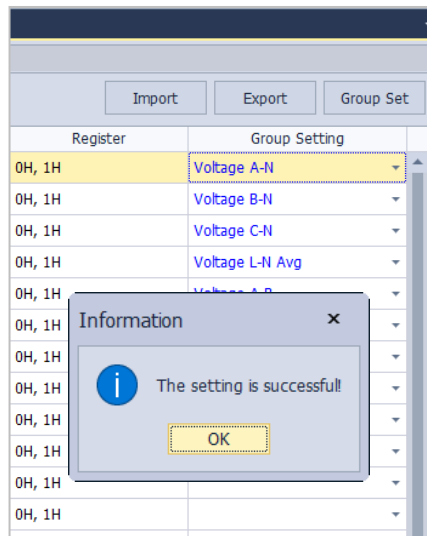
(1) First, select the parameters displayed on the page.



(2) Click “Group Set” to start the process after selecting the parameters.



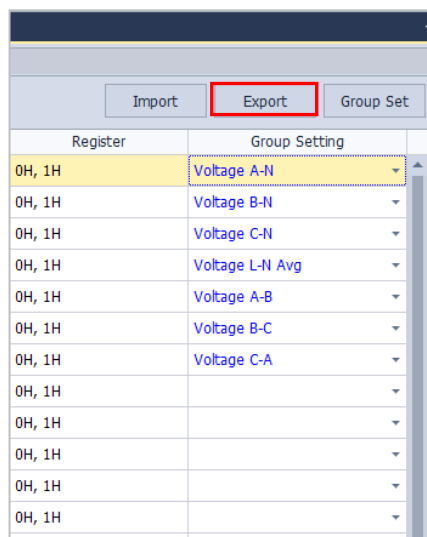
- (3) When the setup is complete, a pop-up window will appear to show the setting is successful, click OK to view the selected parameter data on the page.



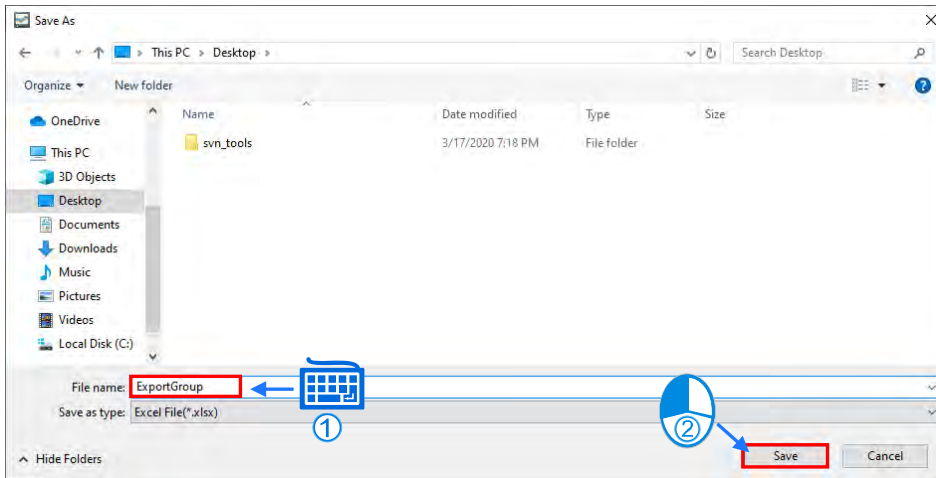
3

Group							
Import Export Group Set							
Index	Name	Description	Value	Unit	Register	Group Setting	
1	Van	Voltage A-N	119.503	V	100H, 101H	Voltage A-N	
2	Vbn	Voltage B-N	119.423	V	102H, 103H	Voltage B-N	
3	Vcn	Voltage C-N	119.423	V	104H, 105H	Voltage C-N	
4	Vavg	Voltage L-N Avg	119.450	V	106H, 107H	Voltage L-N Avg	
5	Vab	Voltage A-B	206.806	V	108H, 109H	Voltage A-B	
6	Vbc	Voltage B-C	206.659	V	10AH, 10BH	Voltage B-C	
7	Vca	Voltage C-A	206.664	V	10CH, 10DH	Voltage C-A	

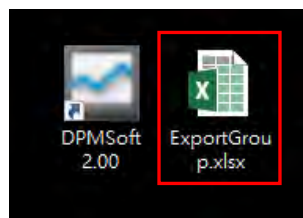
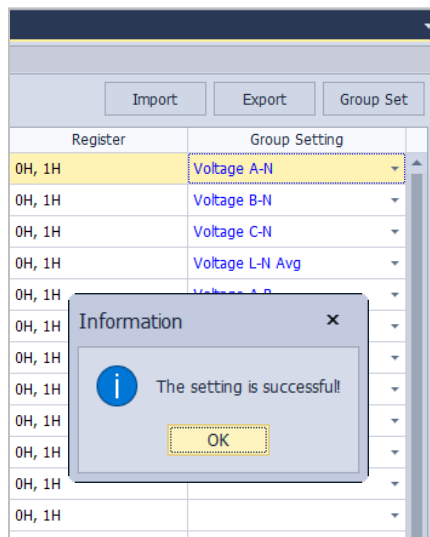
- **Export:** The button exports large number of parameters through the following steps.
 - (1) Select the parameters and click 'Export' button.



- (2) After clicking the 'Export' button, a pop-up window for file saving appears. Users need to choose the appropriate directory and click 'Save' to start the process.



- (3) A pop-up window appears when the group data export is a success. Click OK and the export file can be viewed from the desktop.



(4) Open the ExportGroup.xls from the desktop (see below).

	A	B	C	D	E	F	G
1	Group index	Parameter				Parameter	Code
2	1	1					0
3	2	2				Voltage A-N	1
4	3	3				Voltage B-N	2
5	4	4				Voltage C-N	3
6	5	5				Voltage L-N Avg	4
7	6	6				Voltage A-B	5
8	7	7				Voltage B-C	6
9	8	0				Voltage C-A	7
10	9	0				Voltage L-L Avg	8
11	10	0				Voltage Unbalance A-N	9
12	11	0				Voltage Unbalance B-N	10
13	12	0				Voltage Unbalance C-N	11
14	13	0				Voltage Unbalance L-N Worst	12
15	14	0				Voltage Unbalance A-B	13

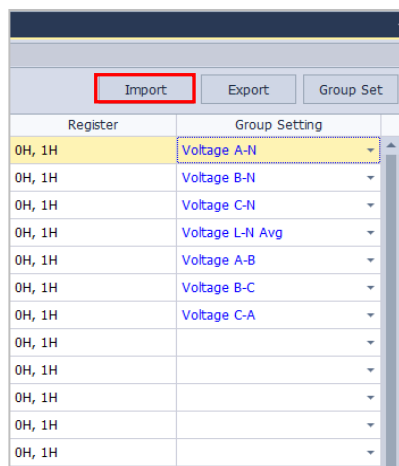
Description on exporting files: Below, the blue frame on the left are the group parameters for import, while the green frame on the right provides parameter codes for reference.

	A	B	C	D	E	F	G
1	Group index	Parameter				Parameter	Code
2	1	1					0
3	2	2				Voltage A-N	1
4	3	3				Voltage B-N	2
5	4	4				Voltage C-N	3
6	5	5				Voltage L-N Avg	4
7	6	6				Voltage A-B	5
8	7	7				Voltage B-C	6
9	8	0				Voltage C-A	7
10	9	0				Voltage L-L Avg	8
11	10	0				Voltage Unbalance A-N	9
12	11	0				Voltage Unbalance B-N	10
13	12	0				Voltage Unbalance C-N	11
14	13	0				Voltage Unbalance L-N Worst	12
15	14	0				Voltage Unbalance A-B	13

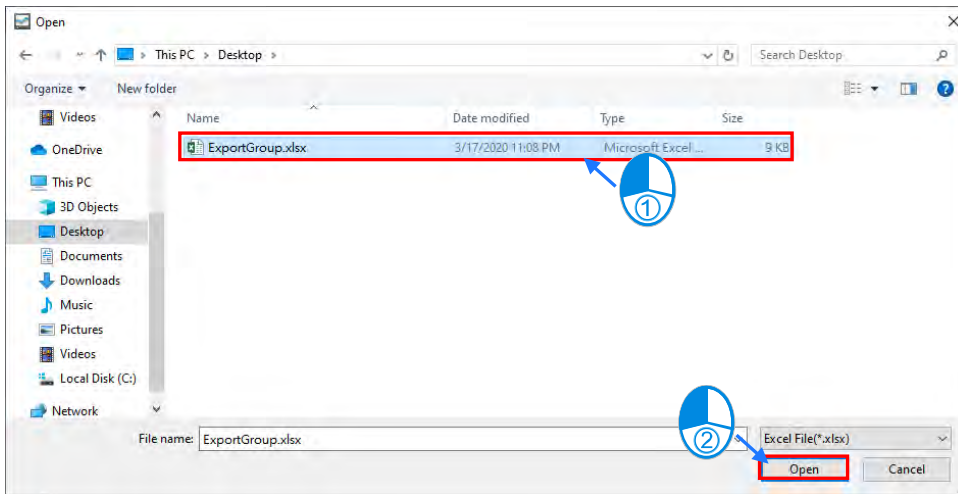
Please refer to user manual of each model for details on Parameter Code List.

● **Import:** The button imports excel files and large number of parameters through the following steps.

(1) Click 'Import' and a pop-up window will appear for users to choose and open the selected file.



- (2) The import process for the selected excel file starts and a diagram showing the current import progress will appear.



- (3) A pop-up window would appear when the group parameter is successfully imported. Click OK and the selected parameter data can be viewed from the desktop.

3.14 Alarm History

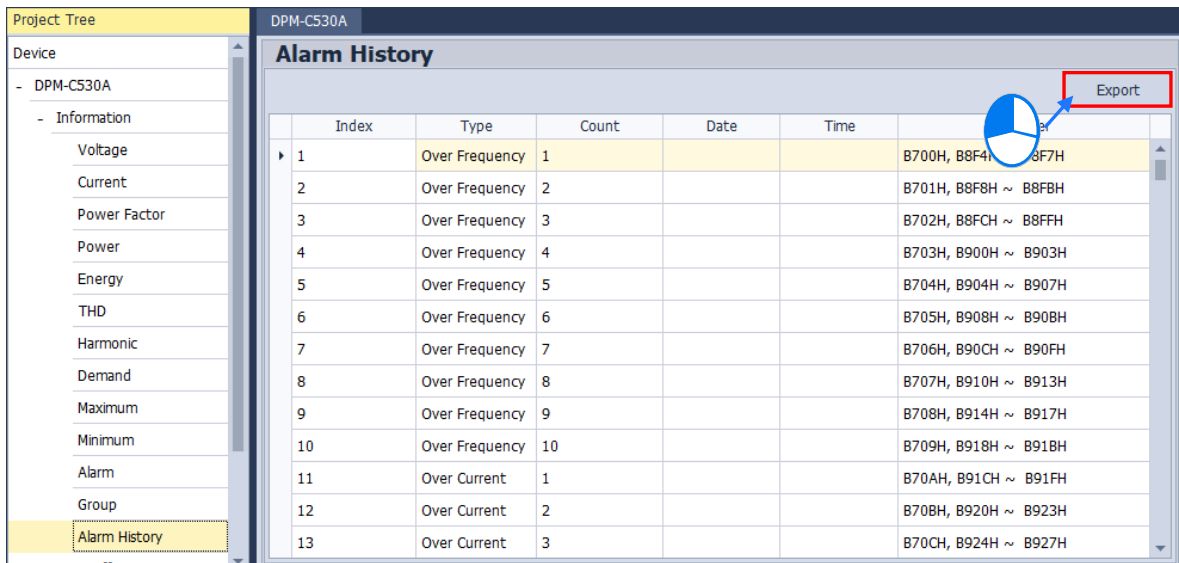
The page displays the alarm history which the alarm data can be exported using a CSV file.

- Click "Alarm History" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A					
Device		Alarm History					
		Index	Type	Count	Date	Time	Register
- DPM-C530A		1	Over Frequency	1	2020/04/10	11:06:09	B700H, B8F4H ~ B8F7H
- Information		2	Over Frequency	2	2020/04/10	16:10:41	B701H, B8F8H ~ B8FBH
Voltage		3	Over Frequency	3	2020/04/28	14:34:55	B702H, B8FCH ~ B8FFH
Current		4	Over Frequency	4	2020/05/14	11:13:22	B703H, B900H ~ B903H
Power Factor		5	Over Frequency	5	2020/05/15	17:36:31	B704H, B904H ~ B907H
Power		6	Over Frequency	6	2020/07/20	09:16:27	B705H, B908H ~ B90BH
Energy		7	Over Frequency	7	2020/07/20	11:57:59	B706H, B90CH ~ B90FH
THD		8	Over Frequency	8	2020/07/21	11:16:14	B707H, B910H ~ B913H
Harmonic		9	Over Frequency	9	2020/07/23	17:06:20	B708H, B914H ~ B917H
Demand		10	Over Frequency	10	2020/07/27	11:21:50	B709H, B918H ~ B91BH
Maximum		11	Over Current	1	2000/10/23	12:14:47	B70AH, B91CH ~ B91FH
Minimum		12	Over Current	2	2020/10/27	09:35:20	B70BH, B920H ~ B923H
Alarm		13					B70CH, B924H ~ B927H
Group		14					B70DH, B928H ~ B92BH
Alarm History							

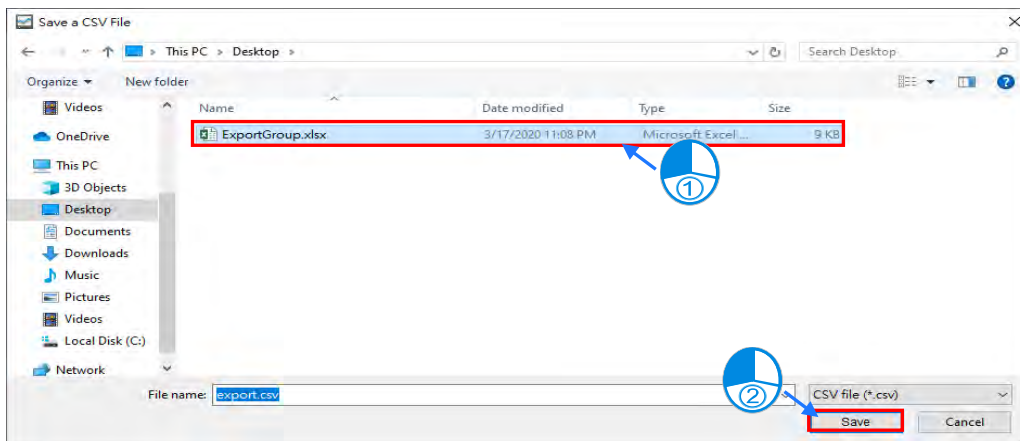
Export: Export all the alarm log data by following the steps below.

- (1) Click the export button.



3

- (2) A pop-up window for saving the export file would be displayed. Click save after choosing a path to save the exported file, then the data export would be completed.



3.15 Tariff

The page displays the tariff point (P1), peak (P2), plateau (P3), valley (P4) for power usage as well on hourly basis daily.

- Click "Tariff" in the project tree on the left side to enter the page (see below).

Project Tree		DPM-C530A					
Device		Tariff					
	Index	Name	Description	Value	Unit	Register	
- DPM-C530A	1		P1	149541.000	kWh	646H, 647H	
- Information	2		P2	360200.300	kWh	64AH, 64BH	
Voltage	3		P3	323526.800	kWh	64EH, 64FH	
Current	4		P4	196241.400	kWh	652H, 653H	
Power Factor	5		0:00 Active Energy Delivered	1553.188	kWh	656H, 657H	
Power	6		0:00 Active Energy Received	0.000	kWh	658H, 659H	
Energy	7		1:00 Active Energy Delivered	1554.531	kWh	65AH, 65BH	
THD	8		1:00 Active Energy Received	0.000	kWh	65CH, 65DH	
Harmonic	9		2:00 Active Energy Delivered	1535.344	kWh	65EH, 65FH	
Demand	10		2:00 Active Energy Received	0.000	kWh	660H, 661H	
Maximum	11		3:00 Active Energy Delivered	1570.594	kWh	662H, 663H	
Minimum	12		3:00 Active Energy Received	0.000	kWh	664H, 665H	
Alarm	13		4:00 Active Energy Delivered	1479.719	kWh	666H, 667H	
Group	14		4:00 Active Energy Received	0.000	kWh	668H, 669H	
Alarm History	15		5:00 Active Energy Delivered	1624.406	kWh	66AH, 66BH	
Tariff							

3.16 Phasor Diagram

This page displays phasor difference between the applied voltages.

To enter the page, click "Phasor Diagram" in the project tree on the left hand side of the page as shown in the following figure.

Project Tree		DPM-DA530					
Device		Phasor Diagrams					
	Index	Name	Description	Value	Unit	Register	
- DPM-DA530	1		Phasor Diagram Voltage B-N lag Voltage A-N	0.0	°	6C0H	
- Information	2		Phasor Diagram Voltage C-N lag Voltage A-N	0.0	°	6C1H	
Voltage	3		Phasor Diagram Current A lag Voltage A-N	346.9	°	6C2H	
Current	4		Phasor Diagram Current B lag Voltage A-N	346.7	°	6C3H	
Power Factor	5		Phasor Diagram Current C lag Voltage A-N	0.0	°	6C4H	
Power	6		Phasor Diagram Voltage B-C lag Voltage A-B	0.0	°	6C5H	
Energy	7		Phasor Diagram Voltage C-A lag Voltage A-B	0.0	°	6C6H	
THD	8		Phasor Diagram Current A lag Voltage A-B	0.0	°	6C7H	
Demand	9		Phasor Diagram Current B lag Voltage A-B	0.0	°	6C8H	
Maximum	10		Phasor Diagram Current C lag Voltage A-B	0.0	°	6C9H	
Minimum							
Group							
Tariff							
Phasor Diagrams							

3.17 Last Month TOU

This page displays values concerning time of use in last month, please refer to DA530 user manual for more configuration details. To enter the page, click “Last Month Time of Use” in the project tree on the left hand side of the page as shown in the following figure.

Project Tree		DPM-DA530					
Device		Last Month Time of Use					
	Index	Name	Description	Value	Unit	Register	
- DPM-DA530							
- Information							
Voltage	1		Active Energy Delivered(P1)	0.000	kWh	900H, 901H	
Current	2		Active Energy Received(P1)	0.000	kWh	902H, 903H	
Power Factor	3		Reactive Energy Delivered(P1)	0.000	kVARh	904H, 905H	
Power	4		Reactive Energy Received(P1)	0.000	kVARh	906H, 907H	
Energy	5		Apparent Energy Delivered(P1)	0.000	kVAh	908H, 909H	
THD	6		Active Energy Delivered(P2)	0.000	kWh	90AH, 90BH	
Demand	7		Active Energy Received(P2)	0.000	kWh	90CH, 90DH	
Maximum	8		Reactive Energy Delivered(P2)	0.000	kVARh	90EH, 90FH	
Minimum	9		Reactive Energy Received(P2)	0.000	kVARh	910H, 911H	
Group	10		Apparent Energy Delivered(P2)	0.000	kVAh	912H, 913H	
Tariff	11		Active Energy Delivered(P4)	0.000	kWh	914H, 915H	
Phasor Diagrams	12		Active Energy Received(P4)	0.000	kWh	916H, 917H	
Last Month Time of Use	13		Reactive Energy Delivered(P4)	0.000	kVARh	918H, 919H	
	14		Reactive Energy Received(P4)	0.000	kVARh	91AH, 91BH	

3.18 Time of Use Max Demand

This page displays values concerning time of use demands.

To enter the page, click “Time of Use Max Demand” in the project tree on the left hand side of the page as shown in the following figure.

Project Tree		DPM-DA530							
Device		Time of Use Max Demand							
	Index	Name	Description	Date	Time	Value	Unit	Register	
- DPM-DA530									
- Information									
Voltage	1		Present Active Power Demand Maximum(P1)	2020/10/22	11:58:40	74691060.000	W	A00H ~ A05H	
Current	2		Present Reactive Power Demand Maximum(P1)	2020/10/27	20:57:55	117556700....	VAR	A06H ~ A0BH	
Power Factor	3		Present Apparent Power Demand Maximum(P1)	2020/10/27	20:57:55	138665900....	VA	A0CH ~ A11H	
Power	4		Current A Demand Maximum(P1)	2020/10/22	11:58:40	244.711	A	A12H ~ A17H	
Energy	5		Current B Demand Maximum(P1)	2020/10/22	11:58:40	244.333	A	A18H ~ A1DH	
THD	6		Current C Demand Maximum(P1)	2020/10/15	10:58:56	0.054	A	A1EH ~ A23H	
Demand	7		Average Current Demand Maximum(P1)	2020/10/22	11:58:40	244.522	A	A24H ~ A29H	
Maximum	8		Present Active Power Demand Maximum(P2)	2020/10/16	15:36:59	109497900....	W	A2AH ~ A2FH	
Minimum	9		Present Reactive Power Demand Maximum(P2)	2020/10/16	16:03:59	163297000....	VAR	A30H ~ A35H	
Group	10		Present Apparent Power Demand Maximum(P2)	2020/10/16	16:03:59	195952000....	VA	A36H ~ A3BH	
Tariff	11		Current A Demand Maximum(P2)	2020/10/16	16:03:59	231.615	A	A3CH ~ A41H	
Phasor Diagrams	12		Current B Demand Maximum(P2)	2020/10/16	16:03:59	231.241	A	A42H ~ A47H	
Last Month Time of Use	13		Current C Demand Maximum(P2)	2020/10/16	16:03:59	231.434	A	A48H ~ A4DH	
Time of Use Max Demand	14		Average Current Demand Maximum(P2)	2020/10/16	16:03:59	231.430	A	A4EH ~ A53H	
	15		Present Active Power Demand Maximum(P4)	2020/10/18	17:58:59	64283630.000	W	A54H ~ A59H	

MEMO

Chapter 4 DPMSoft Settings

Table of Contents

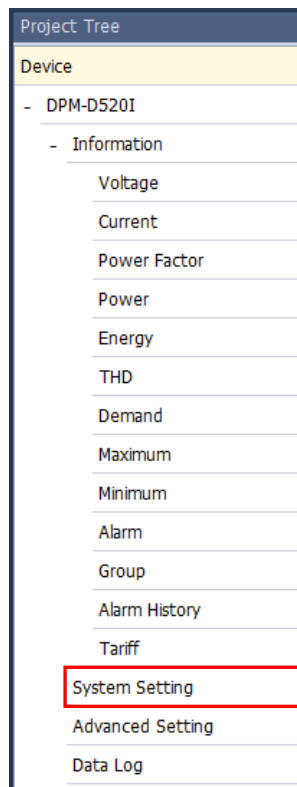
4.1	System Setting	4-3
4.1.1	Meter Information.....	4-3
4.1.2	Transformer Ratio	4-4
4.1.3	Current Transformer.....	4-6
4.1.4	System	4-6
4.1.5	Power System	4-7
4.1.6	Alarm.....	4-8
4.1.7	Communications.....	4-11
4.1.8	Date	4-12
4.1.9	Demand	4-13
4.1.10	Meter Reset	4-14
4.1.11	BACnet Device ID	4-14
4.1.12	Settings for Wifi Reuters	4-15
4.1.13	DIDO Settings.....	4-17
4.1.14	Ethernet.....	4-18
4.1.15	Pulse Output	4-19
4.1.16	Default Page Display in the Meter.....	4-20
4.1.17	Display Unit Format in the Meter	4-21
4.1.18	Display Unit Format.....	4-21
4.1.19	Value Low Cut	4-22
4.1.20	Loop Quantity	4-22
4.1.21	Back Light Time in the Meter	4-23
4.1.22	Custom Page Display in the Meter	4-23
4.1.23	Data Word Order	4-24
4.2	Advance Setting.....	4-24
4.2.1	Auto Recording.....	4-25
4.2.2	Auto Phase Sequence.....	4-26
4.2.3	Display of Numerical Values in the Meter.....	4-26
4.2.4	Display Unit Format.....	4-27
4.2.5	EUI Setting.....	4-27
4.2.6	Auto Reset Max and Min Interval.....	4-28
4.2.7	Energy Saving.....	4-29
4.2.3	Tariff.....	4-30

4.2.9	Carbon Dioxide Emissions	4-31
4.2.10	Data Word Order	4-32
4.2.11	Password Modification	4-33
4.2.12	Alarm	4-33
4.1.13	TOU	4-35
4.2.14	Custom Page in the Meter (Summary-P)	4-37
4.2.15	Summary Display Order in the Meter	4-38
4.2.16	Digital Input	4-39
4.2.17	Relay Output Setting.....	4-40
4.2.18	Back Light Time in the Meter.....	4-42
4.2.19	Reset Loop Parameter	4-42
4.3	Data Log.....	4-43
4.4	Data Log-DA Series/MA Series	4-47

DPMSoft contains options including System Setting, Advanced Setting and Data Log for power meter setup, which may differ from one model type to another. Please refer to the user manual of each product and the following explanations for more details.

4.1 System Setting

Click **System Setting** in the project tree on the left side of the page to start the configuration.



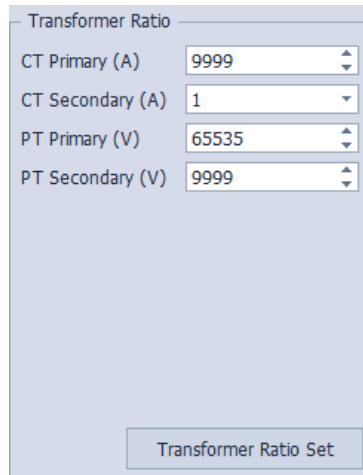
4.1.1 Meter Information

Displays including meter model name, firmware version, date and operation time.

Meter Information	
Model Name	DPM-D520I
Firmware Version	1.0610
Firmware Date	2020/06/09
Meter Constant (Pulse/kWH)	3200
Operation Days	6439
Operation Time	04:06

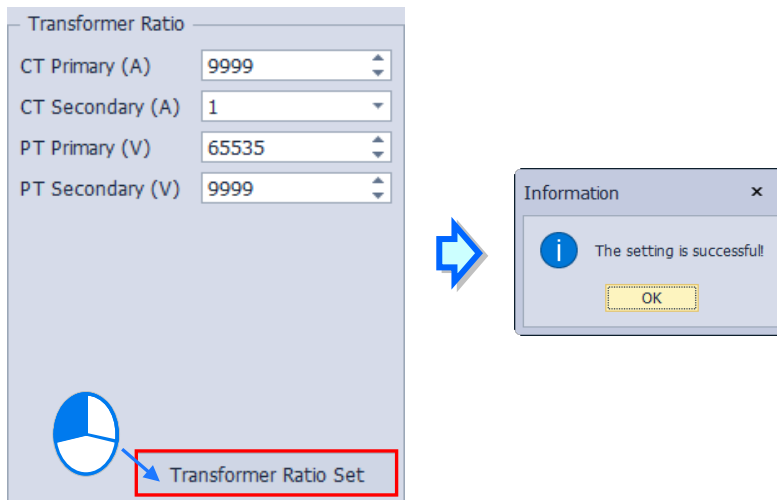
4.1.2 Transformer Ratio

Provides CT Primary, CT Secondary, PT Primary and PT Secondary setups.



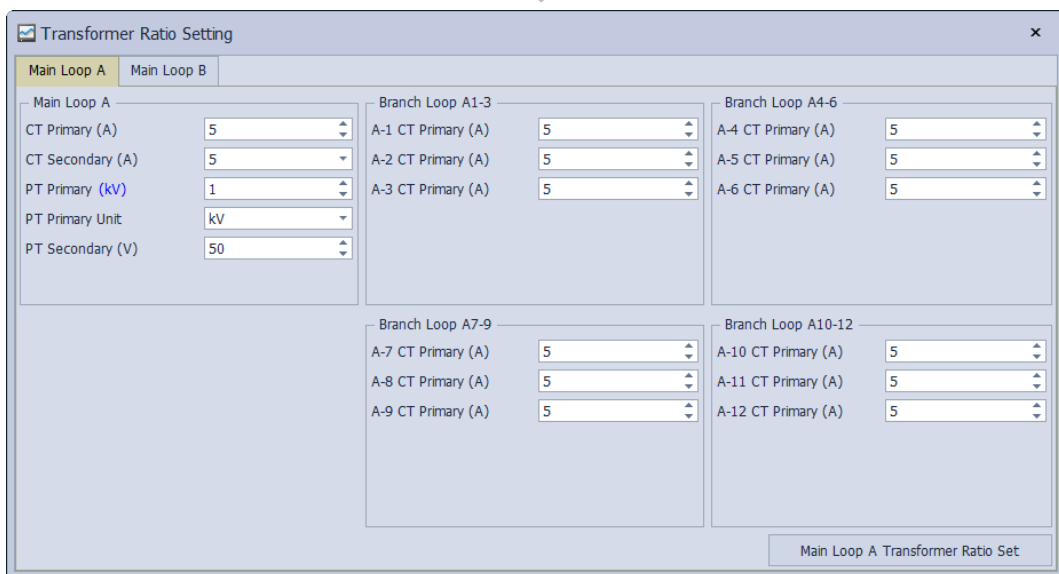
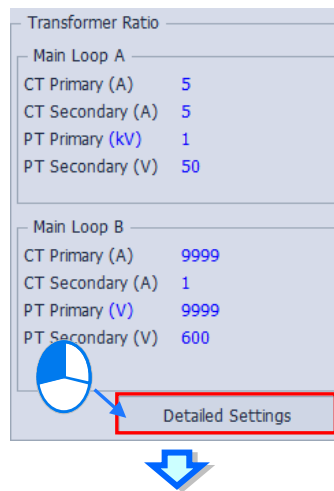
- CT Primary: Set the primary CT within the range of 1 to 9999 A.
- CT Secondary: Set the secondary CT within the available options of 1A, 5A and 2.5A.
- PT Primary: Set the primary PT within the range of 1 to 99999 V.
- PT Secondary: Set the secondary PT within the range of 1 ~ 9999 V.

Click **Transformer Ratio Set** when the setting is complete and a pop-up window appears showing whether the setting is successful or not.



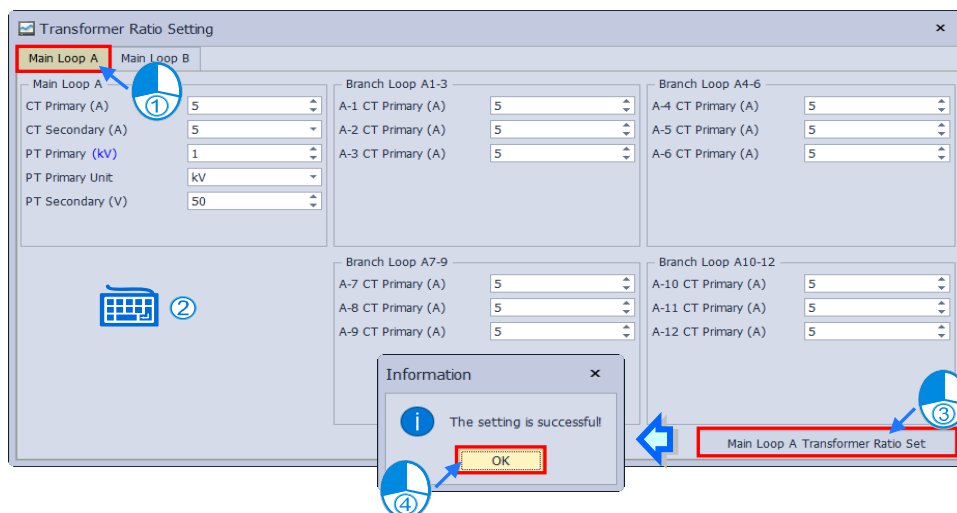
Via the setting window for multi-loop models, values of CT Primary, CT Secondary, PT Primary, PT Primary Unit and PT Secondary for the target main loop or branch loop can be configured.

Click **Detailed Settings** to pop up the transformer ratio setting window.



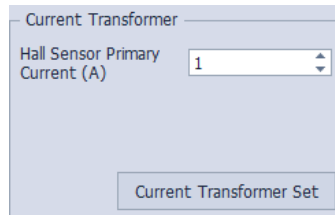
4

After selecting the target main loop, modify the relevant parameters of the main and branch loops, then click **Main Loop Transformer Ratio Set**. A pop-up window would appear showing whether the setting is successful or not.

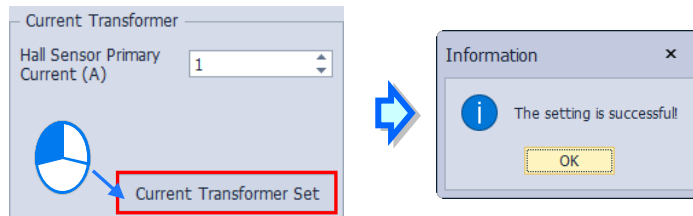


4.1.3 Current Transformer

The setting range for CT primary current is from 1 to 9999 A with 50 A being the factory default setting.

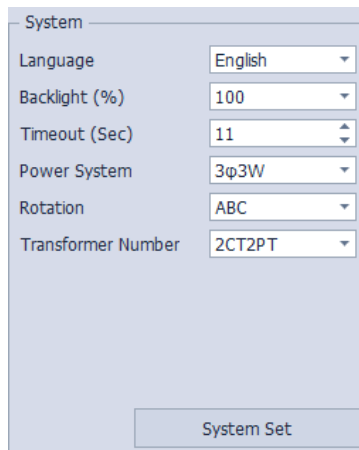


Click **Current Transformer Set** after finishing the primary current setting, then a pop-up window would appear showing whether the setting is successful or not.



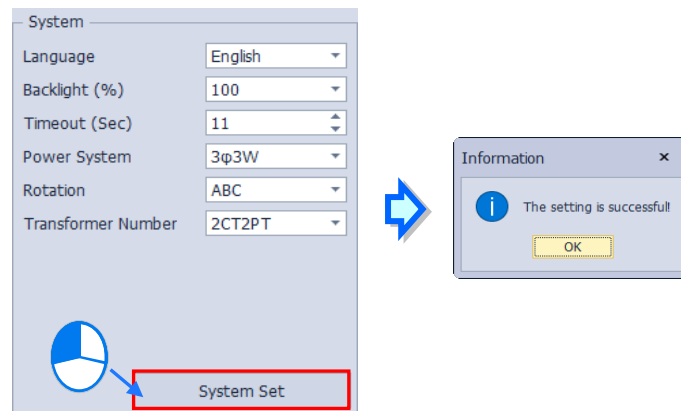
4.1.4 System

Please refer to the manual of each model for details on parameter settings of user interface and wiring.



- Language: The display language on the user interface of the power meter.
- Backlight: The brightness of the screen backlight.
- Timeout: When the user do not press the button on the power meter during the timeout, the brightness of the screen backlight is based on the previous percentage setup, but when the button is pressed, the brightness of the screen backlight is 100%.
- Power System: Power wiring.
- Rotation: When current A and C are incorrectly wired, set the rotation parameter and rewire is not necessary.
- Transformer Number: The number of CT & PT used in the system.

Click **System Set** when the setup is complete and a pop-up window appears showing whether the setting is successful or not.

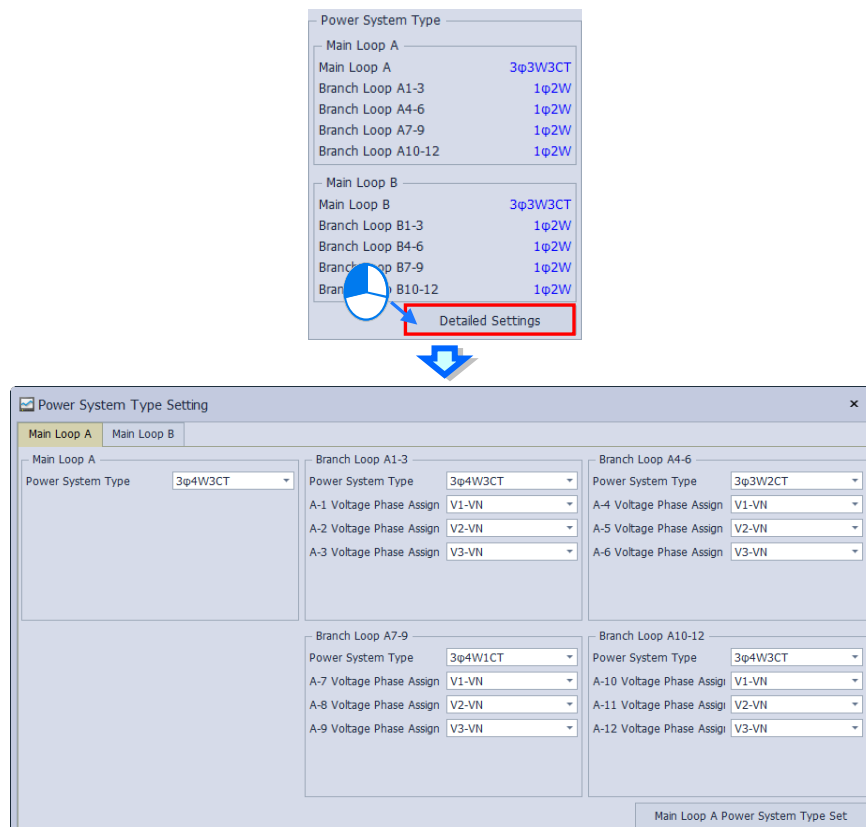


4.1.5 Power System

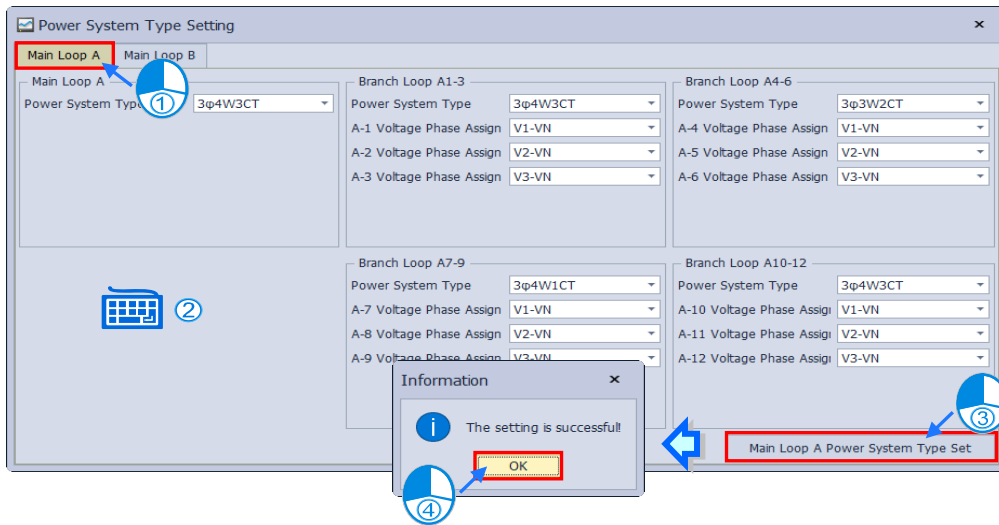
Configure parameters relevant to power system settings.

On the power system type setting window, select the desired power system type and assign voltage phases for main and branch loops.

Click **Detailed Settings** to pop up Power System Type Setting window.



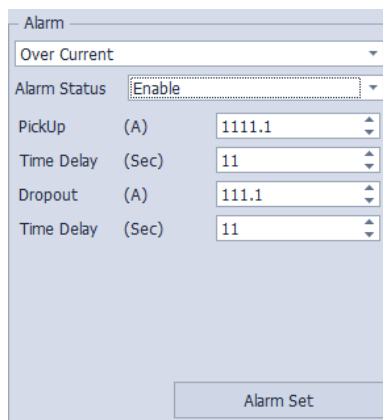
After completing the settings, click **Main Loop Power System Type Set**. A pop-up window would appear showing whether the setting is successful or not.



4

4.1.6 Alarm

Setup the alarm parameters for the power meter.



- Dropdown Menu: Select a required alarm from 29 alarm types.
- Alarm Status: Set the alarm status.
- Pickup: When higher than the pickup current, the alarm is enabled
- Time Delay: When higher than the pickup current and exceeds the time delay, the alarm is enabled.
- Dropout: When lower than the drop-out current, the alarm is disabled.
- Time Delay: When lower than the drop-out current and exceeds the time delay, the alarm is disabled.

***Note:**

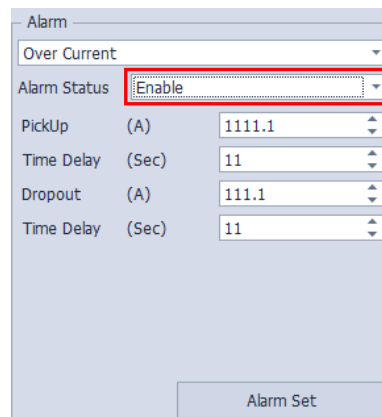
- a.) Alarm Status: Options of **Enable for Relay 1 Output**, **Enable for Relay 2 Output** and **Enable for Relay 1 and 2 Output** are only supported by version v1.0010 or later in DPM-C501 model and DPM-C532. Set proper parameters in DIDO setting (please refer to section 4.1.13) and relay would output relevant signals when the triggering condition is reached.

Steps to setting the alarm:

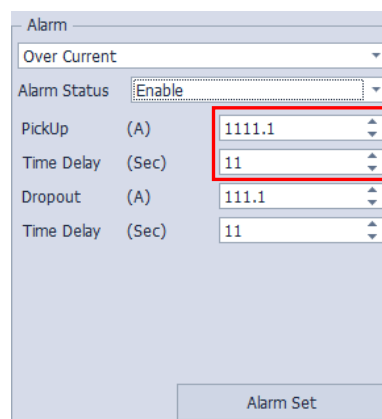
- (1) Select an alarm type.



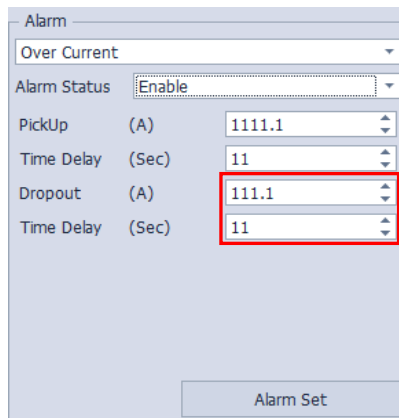
- (2) Set Alarm Status to **Enable**.



- (3) Define the values of Pickup and Time Delay.

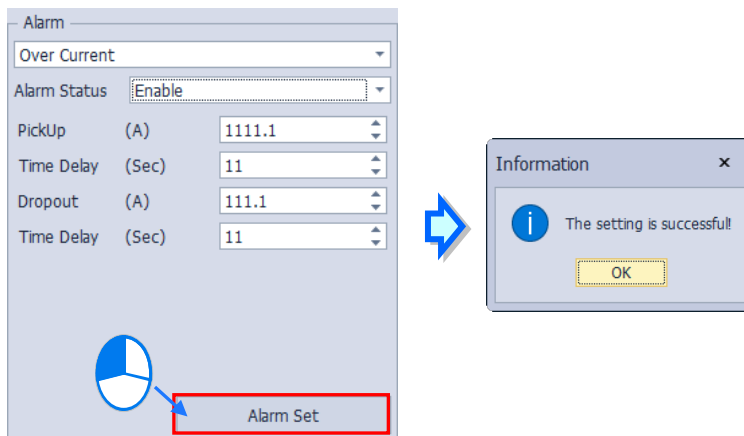


(4) Define the values of Drop-out and Time Delay.



(5) Click "Alarm Set" when the setting is complete and a pop-up window appears showing whether the setting is successful or not.

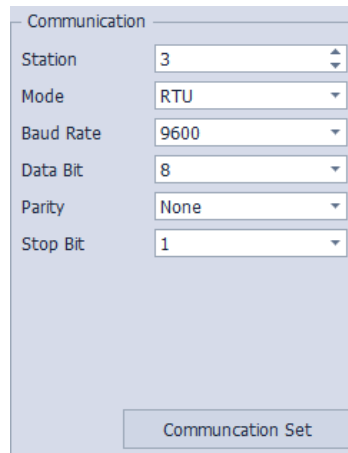
4



(6) Repeat steps (1) ~ (5) for settings regarding all the other alarm types.

4.1.7 Communications

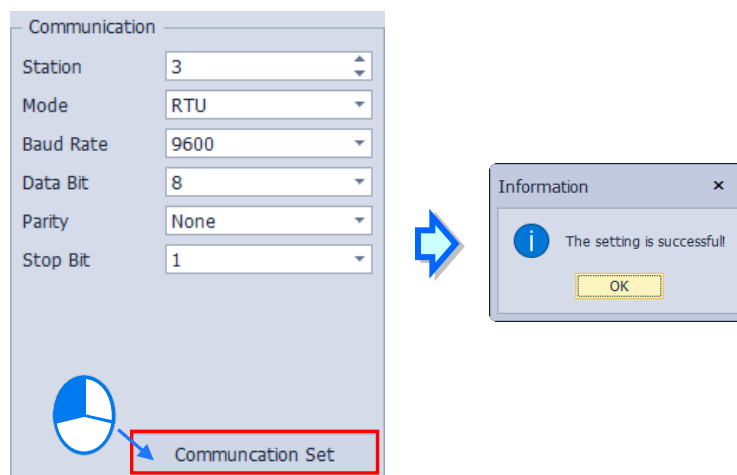
Setup the communications parameters for the power meter.



Parameter	Value
Station	3
Mode	RTU
Baud Rate	9600
Data Bit	8
Parity	None
Stop Bit	1

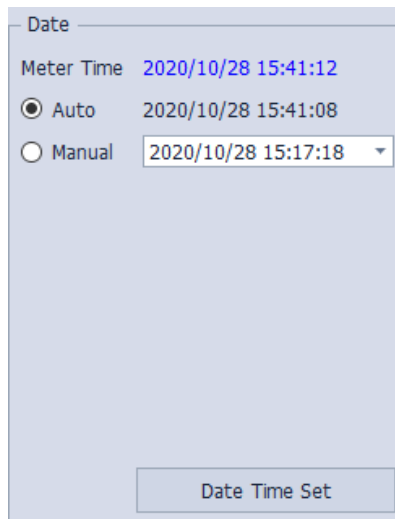
- Station: Modbus slave station ranges from 1~254. When using BACnet MS/TP as communication mode, the MAC ID ranges from 1~127.
- Mode: Supports RS-485 protocol.
- Baud Rate: Communication speed supports RS-485.
- Data bit: Data length of packets.
- Parity: The parity bit for RS485 communications.
- Stop bit: Signal to indicate the end of data transmission.

Click “Communication Set” when the setting is complete and a pop-up window appears showing whether the setting is successful or not.



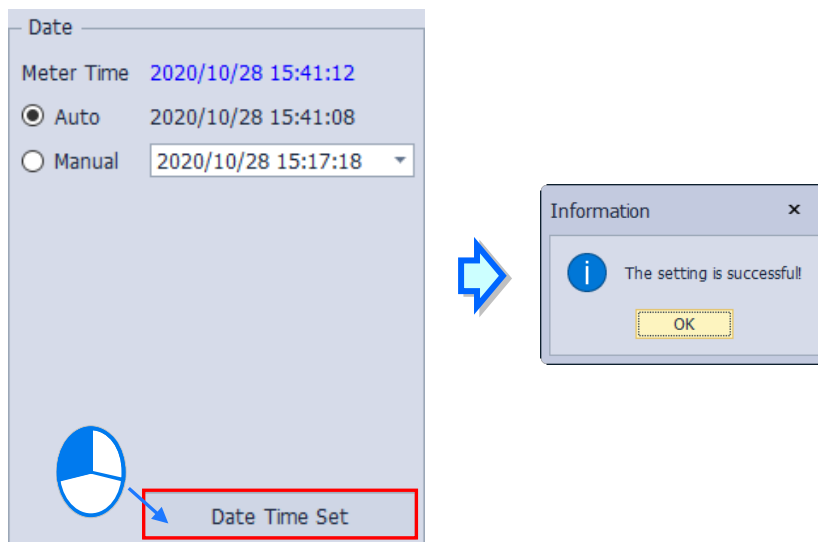
4.1.8 Date

Provides date and time parameters for power meter setup.



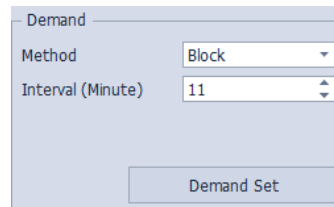
- Auto: Automatically sets the date and time based on the PC, no manual setting required.
- Manual: Manually select the time and date

Click "Date Time Set" when the setting is complete and a pop-up window appears showing whether the setting is successful or not.



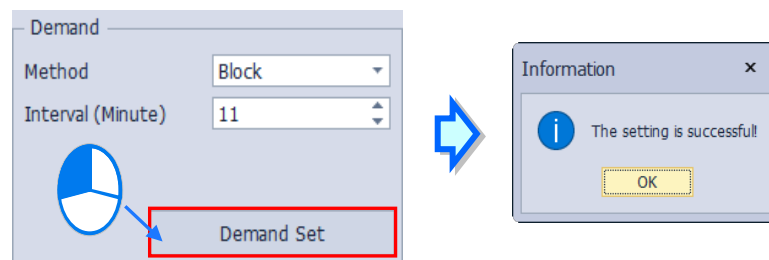
4.1.9 Demand

Setup methods for measuring power meter's demand, which may differ from the model types. Please refer to each model's user manual for more details.



- Method: Method for measuring power meter's demands.
- Interval: Supports demand measuring interval time ranging from 1 to 60 min.

Click "Demand Set" when the setting is complete and a pop-up window appears showing whether the setting is successful or not.

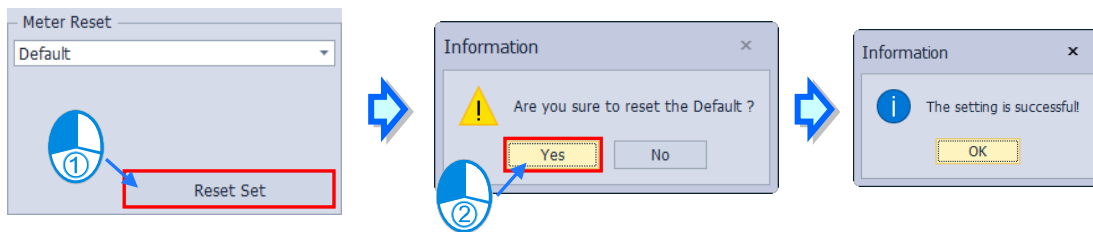


4.1.10 Meter Reset

Provides parameters regarding power meter reset.



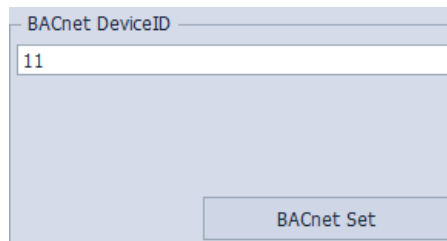
Click “Reset Set” when the setting is complete and a pop-up window appears showing whether the setting is successful or not.



4.1.11 BACnet Device ID

Supported models: DPM-C530, DPM-C530A

Setup the parameter for BACnet ID.

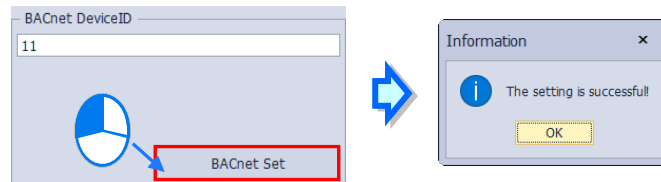


- BACnet Device ID: The device identifier in BACnet MS/TP include 0 ~ 4194303.
- Station: The MAC ID supports 1 ~ 127 stations for BACnet MS/TP mode.
- Baud Rate: The speed of RS485 communications. If the setup is BACnet MS/TP mode, the default setting is 38400 bps.
- Data bit: Data length of packets. For BACnet MS/TP mode, the default setting is 8 bit.
- Parity: The parity bit for RS485 communications. For BACnet MS/TP mode, the default setting is None.
- Stop bit: Signal to indicate the end of data transmission. For BACnet MS/TP mode, the default setting is 1 bit.

※ Note:

- b.) Switch to BACnet MS/TP mode, the baud rate, data bit, parity and stop bit automatically change to its default setting in the order of 38400 bps, 8 bit, None and 1 bit.
- c.) The BACnet MS/TP MAC ID and Modbus slave station shares the same parameter.

Click “BACnet Set” when the setting is complete and a pop-up window appears showing whether the setting is successful or not.



4.1.12 Settings for Wifi Reuters

Supported models: DPM-C520W

The setting box is presented with router connection setups on the bottom right of the page.

Configure the settings of the target reuter you intend to connect, such as SSID and password, via DPMSOft with DPM-C520W model wireless power meter.

- SSID: Type the SSID name that connects the DPM-C520W to a router.
- Password: Display the SSID password for connecting DPM-C520W to a router.
- IP Address: The fixed IP address of DPM-C520W.
- Keep Alive Time: If an inactive connection between master device and DPM-C520W power meter maintains over the keep alive time, the network will be disconnected automatically.

Default values of wireless communication settings are shown below:

	SSID	Password	IP Address	Keep Alive Time
Default Value	WiFi_Modbus_001	1234567890	192.168.1.1	100sec

The Setting Range for wireless communication:

Version	SSID	Password	IP Address	Keep Alive Time
Prior to V1.0008 (Not including V1.0008)	-	-	192.168.X.1	-
V1.0008 and above	1~32 characters	8~16 characters (or no-password)	AAA.BBB.XXX.YYY (Range : 1~255)	5 ~ 9999

Eplaination for IP Address Settings:

1. The hardware version of DPM-C520W is an earlier version before V1.0008:

Example A:

If the IP address is set to be 192.168.1.1 ; Station is 5, then the IP address for DPM-C520W would be 192.168.1.5

Example B:

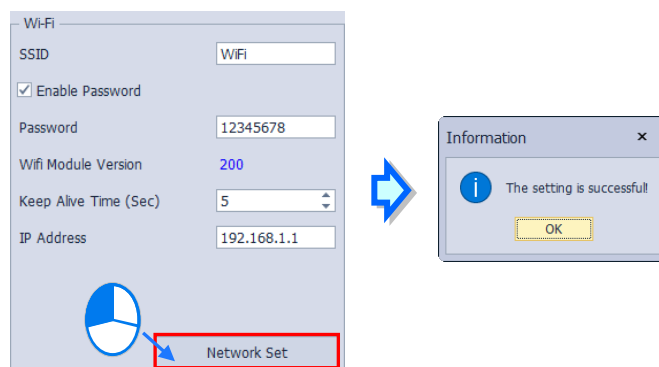
If the IP address is set to be 192.168.0.1 ; Station is 10, then the IP address for DPM-C520W would be 192.168.0.10

2. The hardware version of DPM-C520W is V1.0008 and above:

Example :

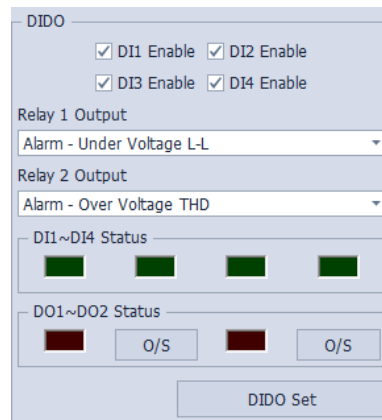
If the IP address is set to be 168.234.123.10 ; Station is 5, then the IP address for DPM-C520W would be 168.234.123.10

Click "Connection Set" when the connection settings for the router is complete and a pop-up window appears showing whether the setting is successful or not.

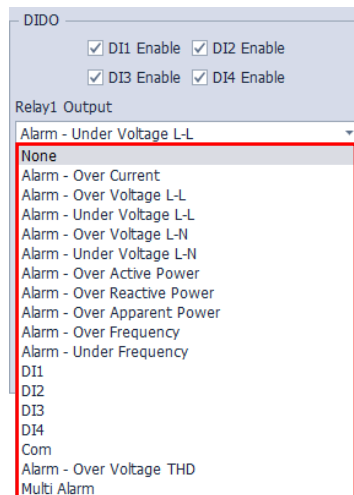


4.1.13 DIDO Settings

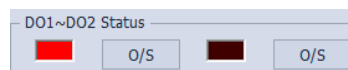
Configure the input and output settings of the power meter in DIDO setting box.



- Enable DI1~DI4: To enable or disable digital input function.
- Relay1~Relay2 Output: A high signal appears when DI enables or an alarm occurs.
 - None: The output function of relay 1 and 2 is disabled.
 - Alarm: The relevant relay output would be activated by an alarm condition.
 - DI1~DI4 : The relay output is activated by an input signal detected in the specific DI.
 - Com: The output function is controlled by the software.
 - Multi Alarm: When the set alarm conditions are triggered randomly, the relay output would be activated.

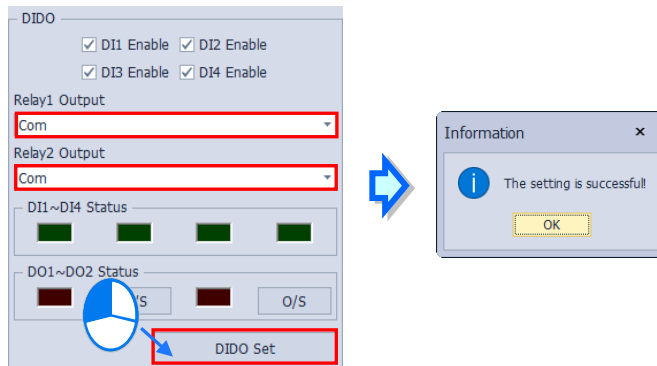


- DI1~DI4: DI status.
- DO1~DO2 Status: The DO status shows lights off for open circuit, lights on for short circuit. Select 'Com' in 'Relay Output' drop-list first or the following error window will appear.



Methods for relay control setting via computers:

Select Com for Relay1 Output or Relay2 Out, then click “DIDO Set”.

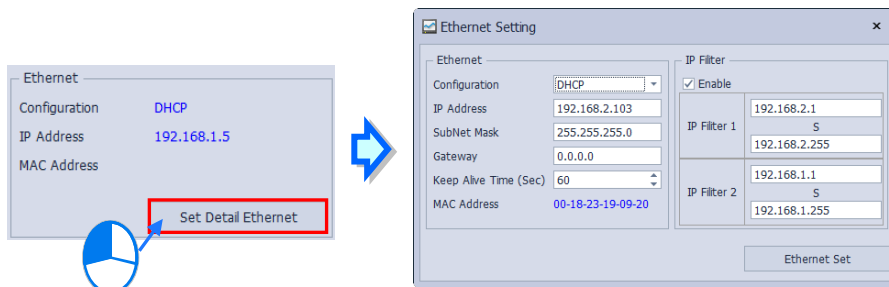


4

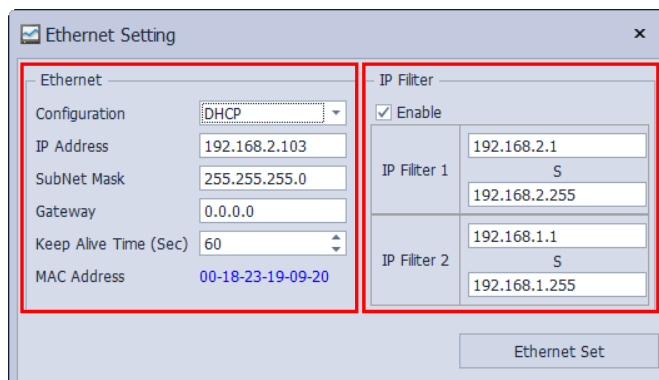
4.1.14 Ethernet

Provides parameter settings regarding Ethernet.

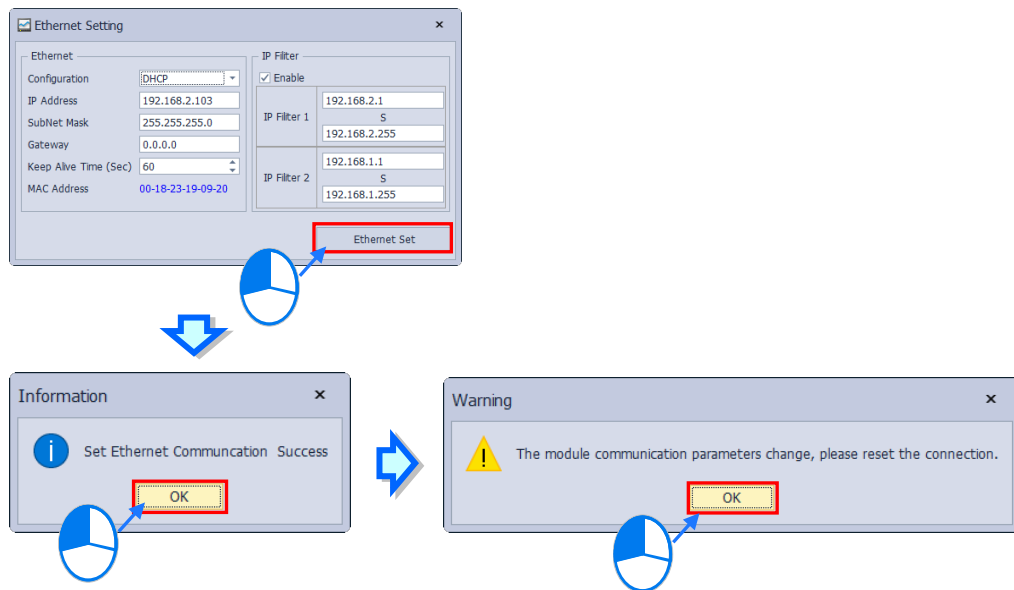
To connect model types supporting Ethernet via DPMSoft, configure Ethernet settings presented on the bottom right of the page. First, click “Set Detail Ethernet” then the Ethernet Setting window would pop up.



The Ethernet basic setting is on the left-hand half of the window, while the other half side gives the setting of IP Filter. Only if the device's IP address is in the range configured in the IP filter, it can be connected to the power meter.

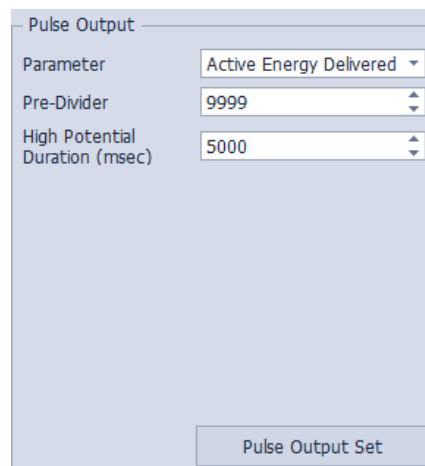


Click “Ethernet Set” after the configuration is completed. In case that the configuration is successful, it is necessary to reconnect with the power meter



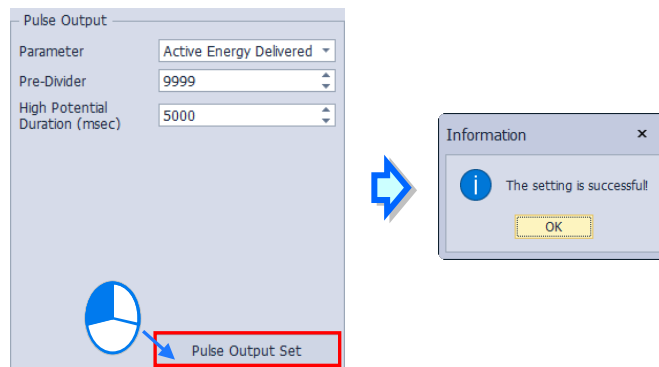
4.1.15. Pulse Output

Provides parameter settings regarding pulse output.



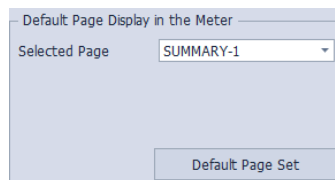
- **Parameter:** Options are Active Energy Delivered, Active Energy Received, Inactive Energy Delivered, Inactive Energy Received, and off.
- **Pre-Divider:** The setting range is from 1 to 9999.
- **High Potential Duration (msec):** The setting range is from 0 to 5000, which 0 represents that the proportions of high and low potential are 50 percent respectively

Click “Pulse Output Set” when the settings for pulse output is completed and then a pop-up window would appear showing whether the setting is successful or not.



4

4.1.16 Default Page Display in the Meter



■ **Selected Page:** Options are

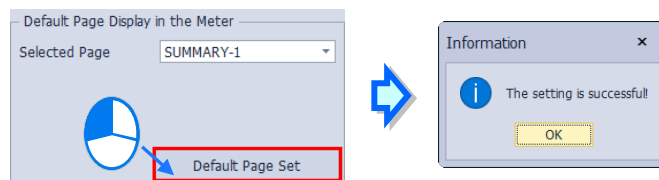
Summary-1 (Voltage L-N average/ Current average/ Total effective power/ Power factor average/ Input effective energy)

Summary-2 (Voltage L-L average/ Current average/ Total effective power/ Power factor average/ Input effective energy)

Summary-3 (Total effective power/ Total ineffective power / Total apparent power / Power factor average/ Input effective energy)

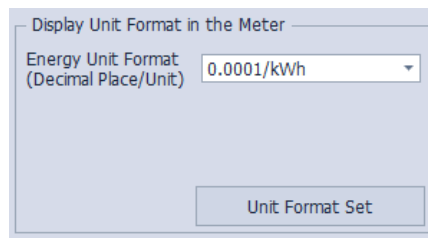
Summary-4 (Total effective power/ Total ineffective power / Total apparent power / Frequency/ Input effective energy)

Click “Default Page Set” when the setting is completed and then a pop-up window would appear showing whether the setting is successful or not.

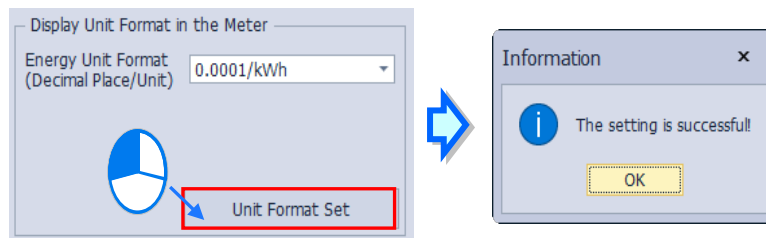


4.1.17 Display Unit Format in the Meter

Provides parameter settings regarding unit displayed in the power meter.

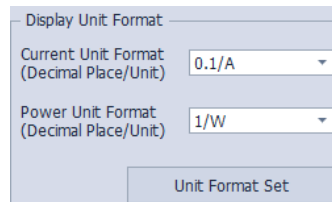


Click **Unit Format Set** when the setting is completed and then a pop-up window would appear showing whether the setting is successful or not.

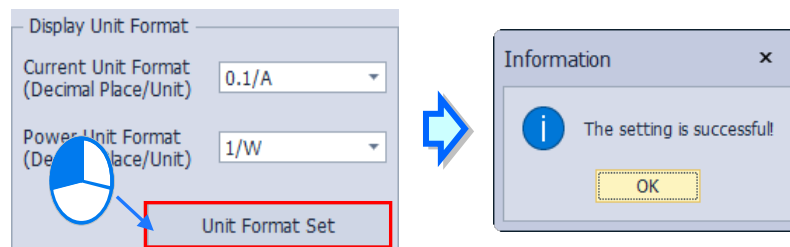


4.1.18 Display Unit Format

Set the unit format displayed in the meter and DPMSOft.

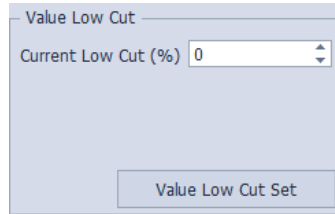


Click **Unit Format Set** when the setting is completed and then a pop-up window would appear showing whether the setting is successful or not.

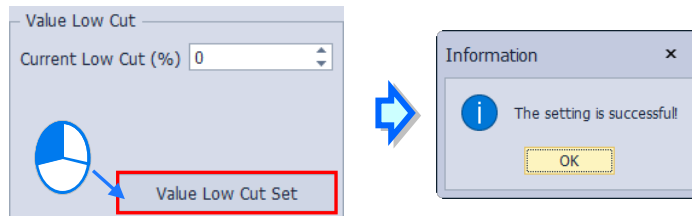


4.1.19 Value Low Cut

Set the percentage for current low cut. When the detected current value is lower than the set percentage, the current value would be 0. The setting range is from 0.0%~100% with 0.4% being the factory default setting.



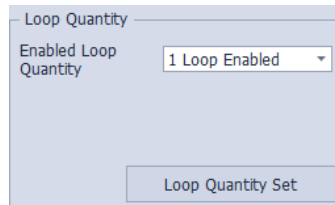
Click **Value Low Cut Set** when the setting is completed and then a pop-up window would appear showing whether the setting is successful or not.



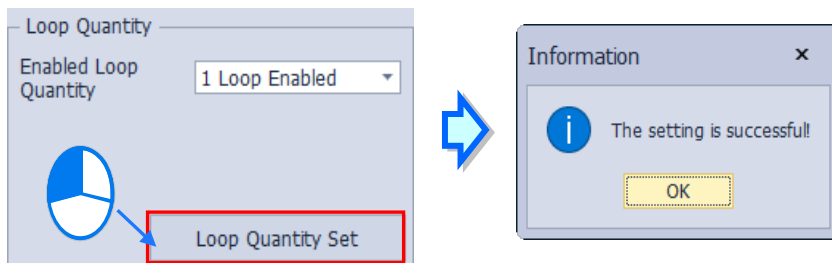
4

4.1.20 Loop Quantity

Enabled loop quantity set for power meter can be set from 1 to 5 loops with 5 being the factory default setting.

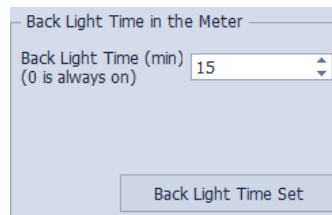


Click **Loop Quantity Set** when the setting is completed and then a pop-up window would appear showing whether the setting is successful or not.

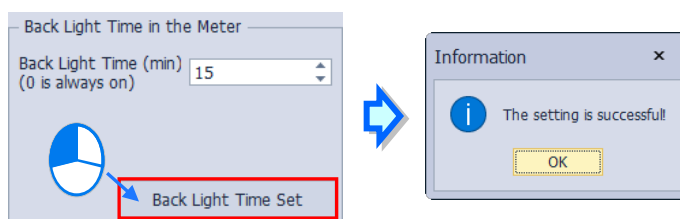


4.1.21 Back Light Time in the Meter

Set back light time from 0 to 15 minutes with 1 being the factory default setting, which 0 represents always on.

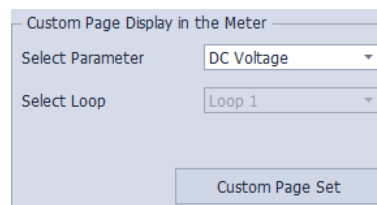


After set back light time based on your needs and click **Back Light Time Set**, a pop-up window would appear showing whether the setting is successful or not.



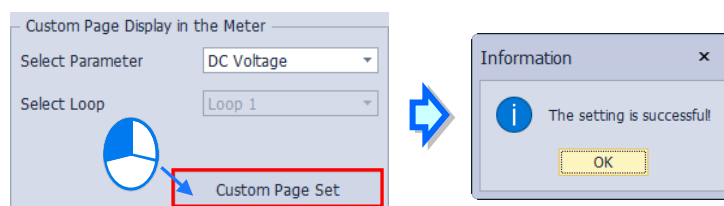
4.1.22 Custom Page Display in the Meter

Select the desired parameter to display on the custom page in the meter.



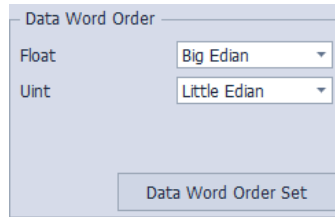
- Select Parameter: Select the parameter to display for the selected loop in the meter with DC Voltage being the factory default setting.
- Select Loop: Select the loop to display in the meter.

After finish settings for custom page display, click Custom Page Set and a pop-up window would appear showing whether the setting is successful or not.



4.1.23 Data Word Order

Set Modbus word order for float and uint data type.



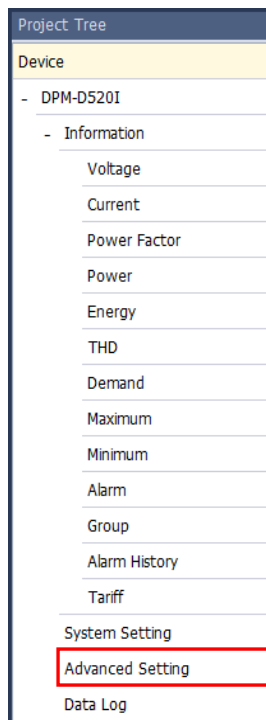
After finish the settings, click **Data Word Order Set** and a pop-up window would appear showing whether the setting is successful or not.



4

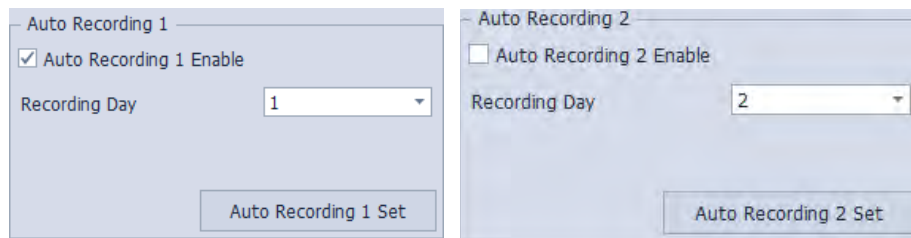
4.2 Advance Setting

Click “**Advanced Setting**” in the project tree on the left side of the page to start the configuration.



4.2.1 Auto Recording

Auto recording monthly power usage.



- **Auto Recording 1 Enable:** Check the checkbox to enable or disable auto recording 1.
- **Recording Day:** Schedule a day (Day: 1~31) in a month to measure monthly power usage regarding group 1.
- **Auto Recording 2 Enable:** Check the checkbox to enable or disable auto recording 2.
- **Recording Day:** Schedule a day (Day: 1~31) in a month to measure monthly power usage regarding group 2.

Steps for auto recording:

- (1) Choose a day (1~31) of a month to start recording.
- (2) Click “Auto Recording1 Enable” and choose “Auto Recording 1 Set” (see below) to start auto recording 1.



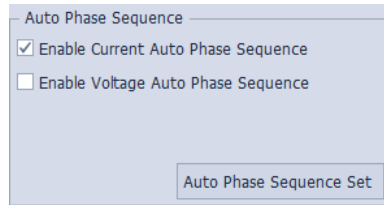
- (3) Repeat the same steps (1) ~ (2) for setting Auto Recording2.

※ Note:

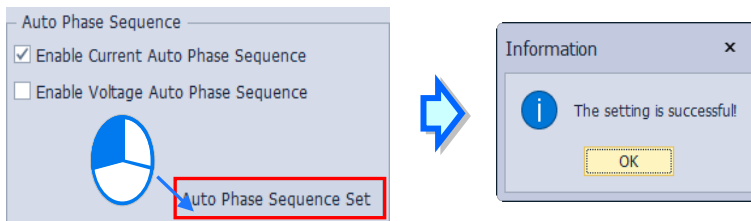
- a.) If the setting day exceeds the last day of that month, use the last day of that month instead.
- b.) Calculation: Assume the calculation starts from on the 1st of this month, 0 hr 0 min 0 sec and record the data to the last day of this month, 23 hr 59 min 59 sec. (The end day of the month varies and is set on the 28th, 30th or 31st based on the month.)

4.2.2 Auto Phase Sequence

Enable Auto Phase Sequence function for current or voltage based on users' needs.



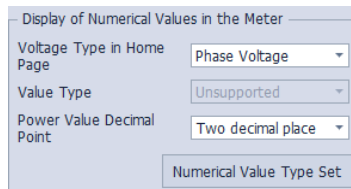
When the settings is complete, click “Auto Phase Sequence Set” and you will get a pop-up to show whether the setting is successful or not.



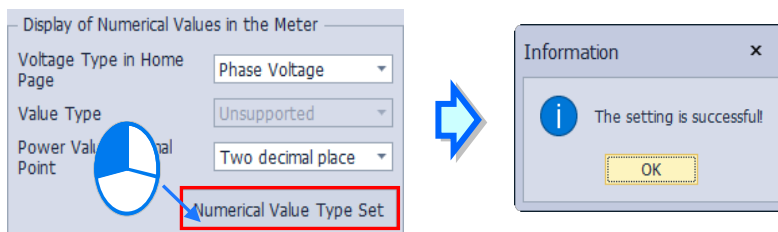
4

4.2.3 Display of Numerical Values in the Meter

Set the number of decimal places for values displayed in the meter.

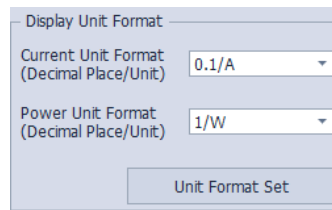


When the settings is complete, click “Decimal Place Value Set” and a pop-up window would appear showing whether the setting is successful or not.

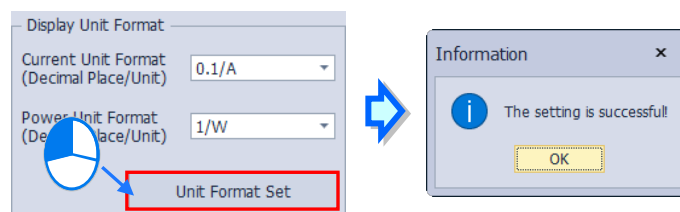


4.2.4 Display Unit Format

Set the unit format displayed in the meter and DPMSoft.

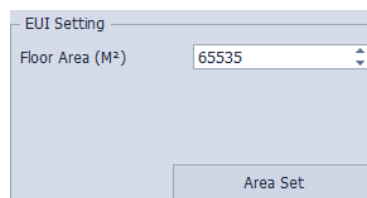


When the settings is complete, click “Unit Format Set” and a pop-up would be shown whether the setting is successful or not.



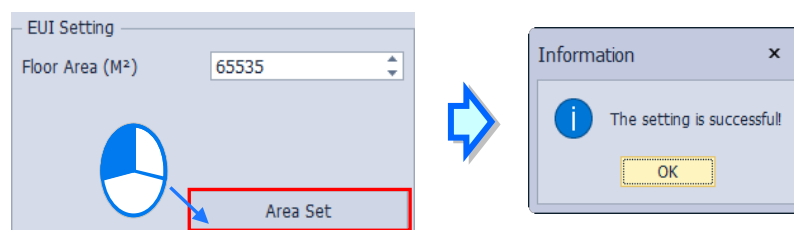
4.2.5 EUI Setting

Calculate EUI values (kWh / floor area (m²)) which represent electricity consumption per square meter.



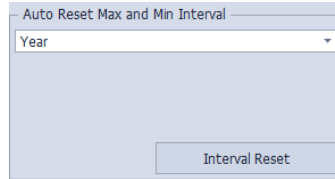
- **Floor Area (M²):** The space size of indoor area.

After finish the setting of floor area, click “Area Set” and a pop-up window would be shown whether the setting is successful or not.



4.2.6 Auto Reset Max and Min Interval

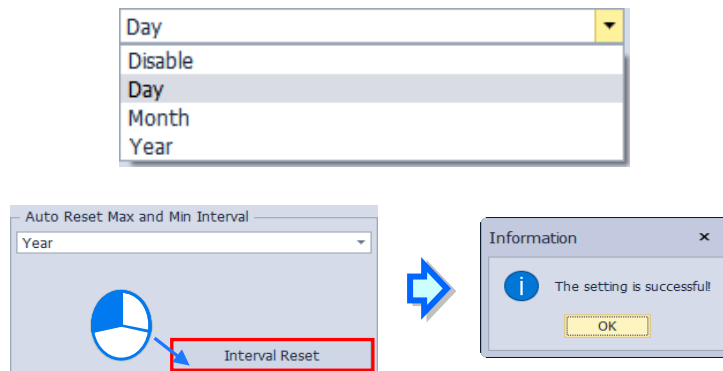
The software automatically reset the max and min records base on a specific period (per day, month or year).



- 4
Auto Reset Max and Min Interval: Reset the records of maximum and minimum values at a specific interval.

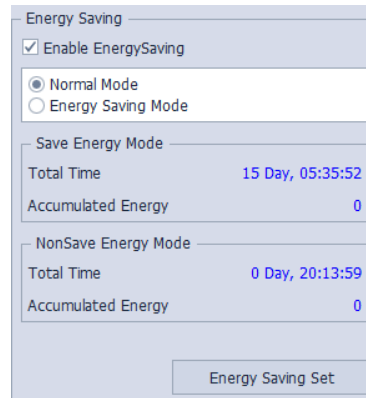
Item	Function Description
Disable	Close the function, manual reset required
Day	Reset daily
Month	Resets on the first day of every month
Year	Resets on the first day of January in every year

When setups for auto reset maximum and minimum interval is completed, click “Interval Reset” and a pop-up window will show whether the setting is successful or not.



4.2.7 Energy Saving

The current accumulated energy is categorized into normal or energy saving mode.

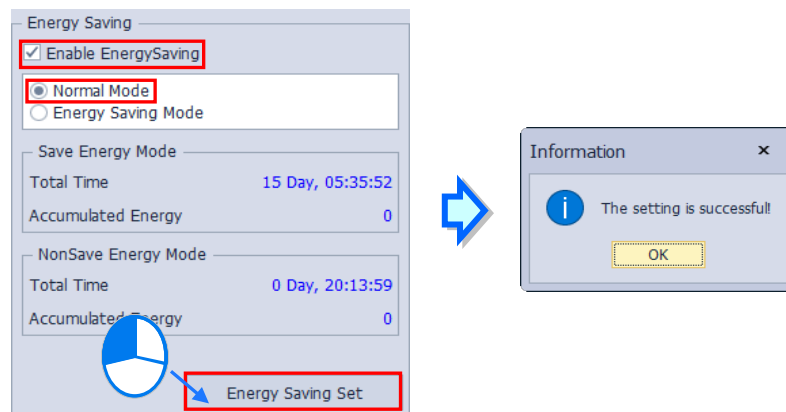


- **Enable Energy Saving:** Select to enable or to close energy saving / non-energy saving mode.
- **Normal/ Energy Saving Mode:** Switch the accumulated energy to either energy saving or non-energy saving mode.

4

The following describe the energy saving mode settings:

Choose “Enable Energy Saving” and “Normal Mode”. Then, click “Energy Saving Set” to enable this function.



4.2.8 Tariff

Record energy based on the off-peak times.

Index	Type	Start Time	End Time
1st Tariff	P4	00:00	11:11
2nd Tariff	P1	10:00	14:00
3rd Tariff	P2	09:00	00:10
4th Tariff	P2	00:24	15:00
5th Tariff	P2	06:00	20:00
6th Tariff	P2	00:01	17:00
7th Tariff	P2	08:00	00:58
8th Tariff	P2	00:36	09:00

Tariff Set

- Every Day Every Hour Energy Record Enable: Record accumulated energy per hour by day.
- Type: Select from the 4 types of tariff during a day including point (P1), peak (P2), plateau (P3) or valley (P4).
- Start Time: The starting time to record accumulated energy
- End Time: The ending time to record accumulated energy.

The following steps describe the tariff settings:

- (1) Select the desired “point (P1), peak (P2), plateau (P3) or valley (P4)” and setup the start and end time.

Type

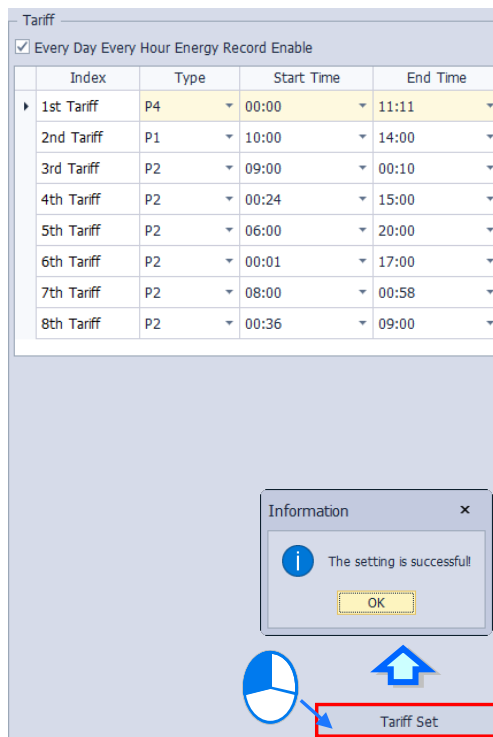
P1

P2

P3

P4

- (2) Repeat step (1) regarding tariff setups for the 2nd to 8th group.
- (3) When the setups are complete, click “Tariff Set”.

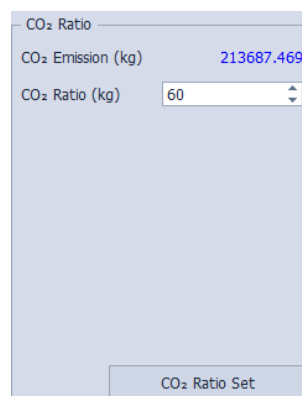


※ Note:

- a.) When the start and end time are set to be the same, the tariff function is disabled.
- b.) If the start time exceeds the end time (see below), this means the tariff is calculated till the next day.

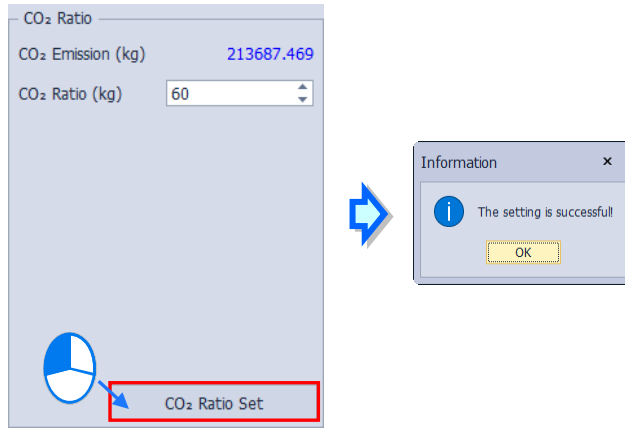
4.2.9 Carbon Dioxide Emissions

Set the CO₂ emission (kg) for each unit of electricity. The setting values range is from 0 to 60.000 with 0.638 being the factory default setting.



- CO₂ Emission (kg): Calculates the total emissions of carbon dioxide.
- CO₂ Ratio (kg): Set the CO₂ emission for each unit of electricity

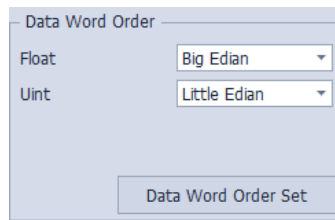
When the setting for CO₂ Ratio is completed, click “CO₂ Ratio Set” and a pop-up window will show whether the setting is successful or not.



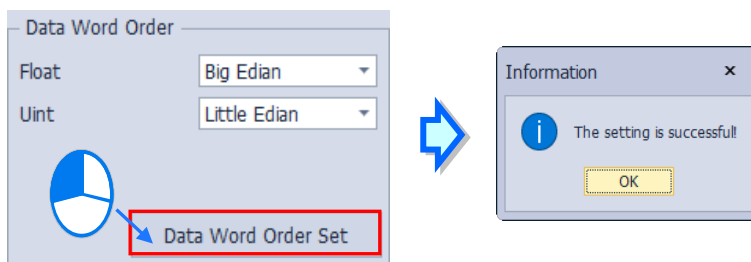
4

4.2.10 Data Word Order

Set the Float and Uint data word order for Modbus transmission

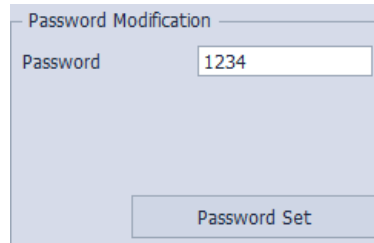


When the setting for Data Word Order is completed, click “Data Word Order Set” and a pop-up window will show whether the setting is successful or not.

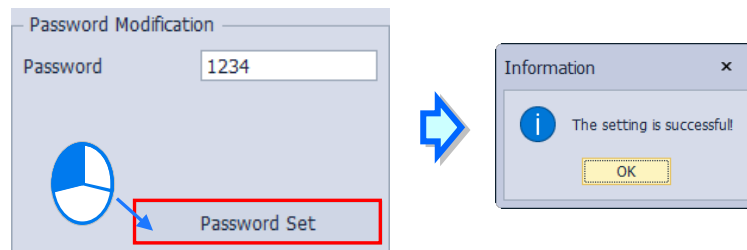


4.2.11 Password Modification

Modify the password for the password lock with 1000 being the factory default setting.

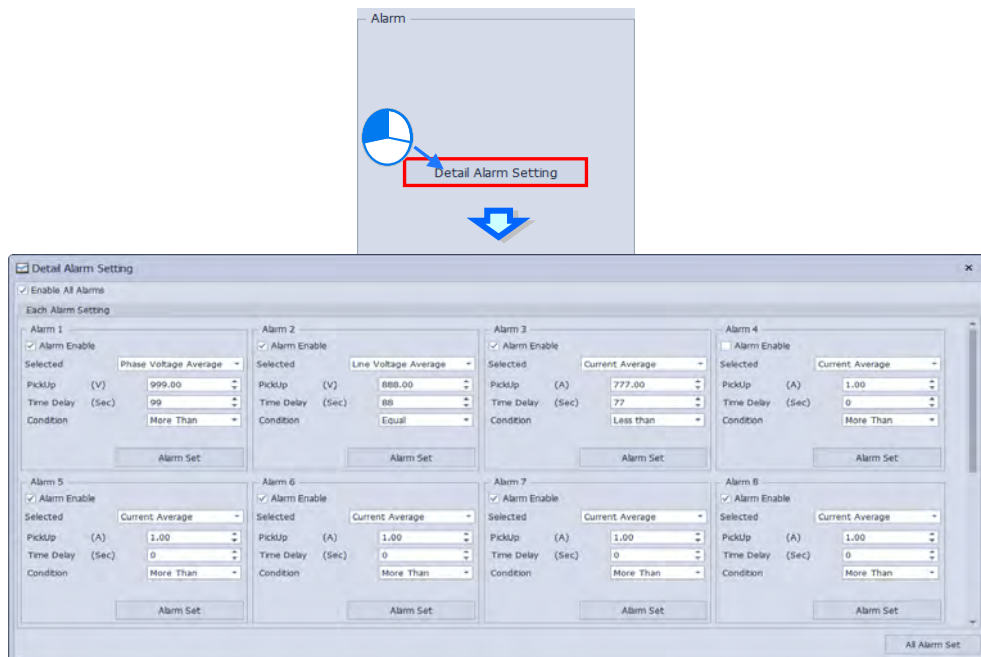


When the setting for password is completed, click “Password Set” and a pop-up window will show whether the setting is successful or not.



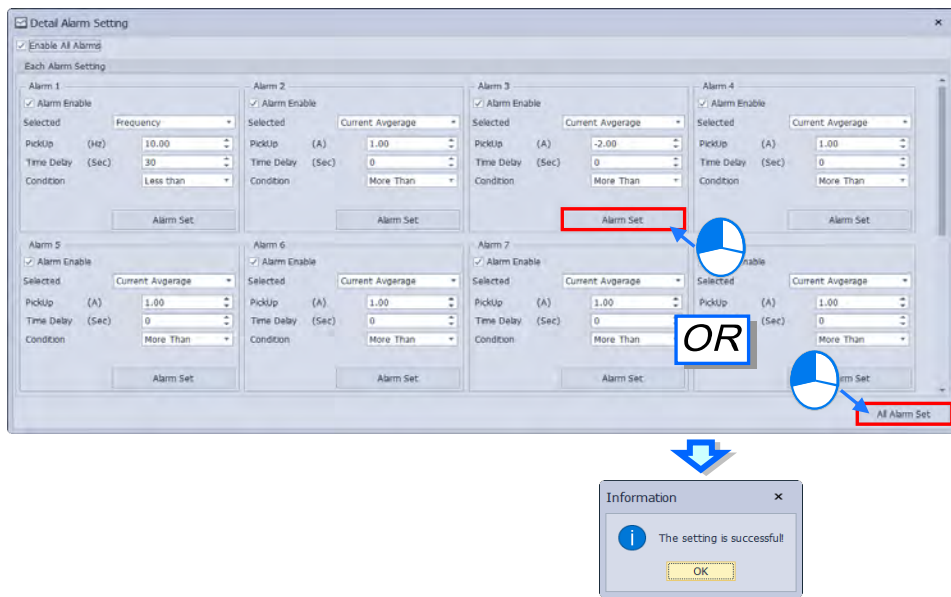
4.2.12 Alarm

Configure alarm conditions by clicking “Detail Alarm Setting”, then the detail alarm setting window will pop up.



- Alarm Enable: Check the box to enable or uncheck to disable the function.
- Selected: Choose the desired alarm option from the drop-down list.
- Pickup: The alarm is triggered when the condition and the pickup value is fulfilled.
- Time Delay: After the pickup value is reached as well as the time delay being exceeded, the alarm will be shown.
- Condition: Set the triggering condition. Once the condition is fulfilled, the alarm will be triggered.

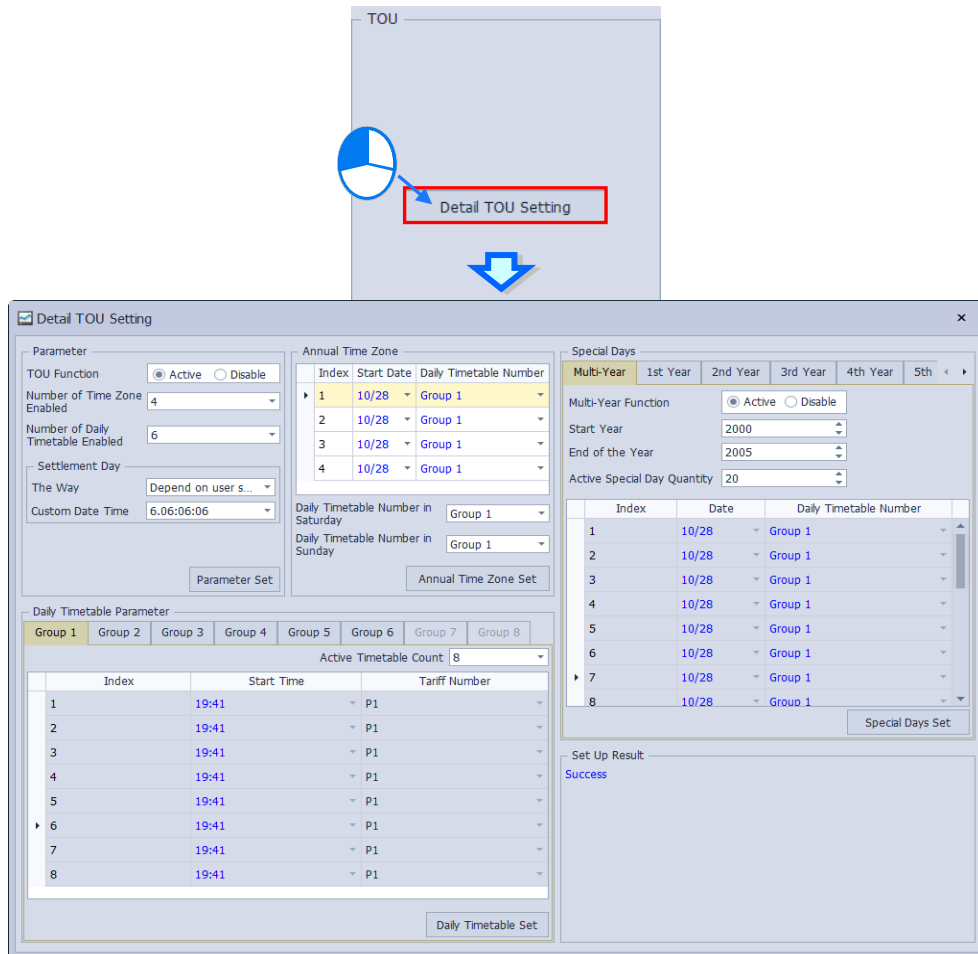
When the alarm setting is completed, click “Alarm Set” or “All Alarm Set” and a pop-up window will show whether the setting is successful or not.



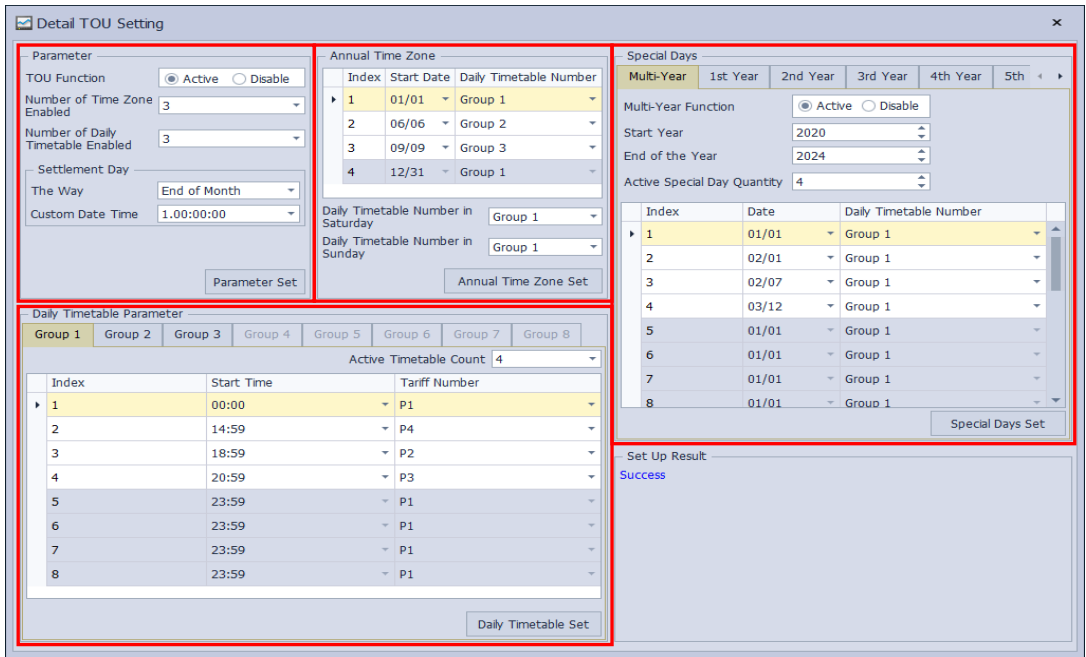
4.1.13 TOU

Divide a certain time into consecutive time periods. Each period can point to the same or different tariffs (point, peak, plateau or valley). The power meter respectively measures electricity based on different types of tariff, which is determined by the internal clock inside the power meter, so as to meet the requirement of TOU measurement and charge.

To set the TOU conditions, click “Detail TOU Setting” and then the detail TOU setting window would pop up.



There're four sections on the detail TOU setting window as the following shows:



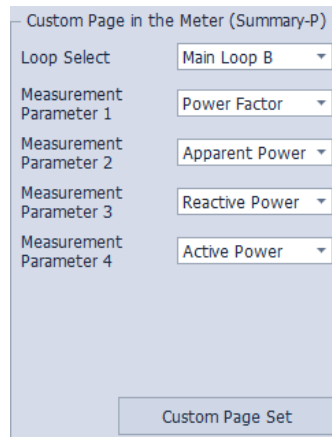
- **Parameter:** Enable or disable the TOU function. A maximum number of 4 can be set for enabled time zone, while a maximum number of 8 can be set for enabled daily timetable. After complete the settings for time zone, daily timetable and settlement day, click “Parameter Set” to confirm successful save of configuration.
- **Annual Time Zone:** A year can be divided into four time intervals at most, which must be configured in closed-loop. Make sure the setting of start date matches the setting in day timetable parameter. Furthermore, daily timetable number in Saturday and Sunday can also be configured here. After complete all the settings, click “Annual Time Zone Set” to confirm successful save of configuration.

For example, in case of three time zones being chosen, the first time zone is set to January 1st and group1 as the daily timetable, while the second time zone is set to September 9th and group3 as the daily timetable, as well as setting the third time zone to June 6th and group2 as the daily timetable, error occurs.

- **Daily Timetable Parameter:** A day can be divided into eight time intervals at most, which must be configured in closed-loop. Make sure each interval matches a proper tariff number. After complete all the settings, click “Daily Timetable Set” to confirm successful save of configuration.
- **Special Days:** Can be configured with multi-year or single-year setting. Up to 20 special days can be configured in a setting, while a maximum of 5 years can be set for multi-year. After complete all the settings and make sure to match the daily timetable, click “Special Days Set” to confirm successful save of configuration.

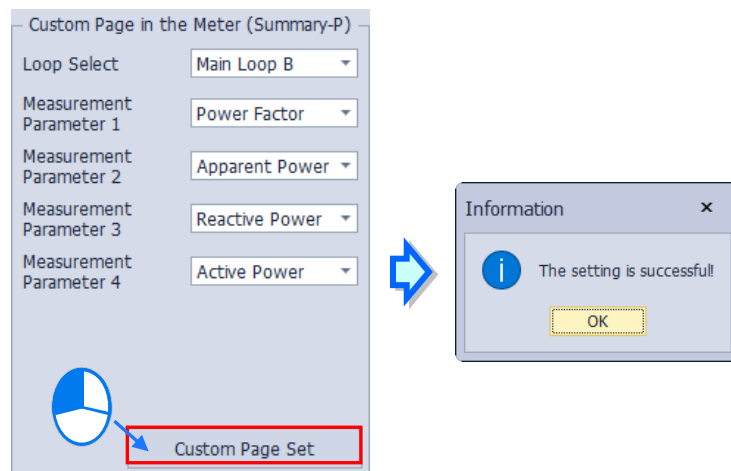
Priority of TOU: Special days > Weekends > Annual Time Zone

4.2.14 Custom Page in the Meter (Summary-P)



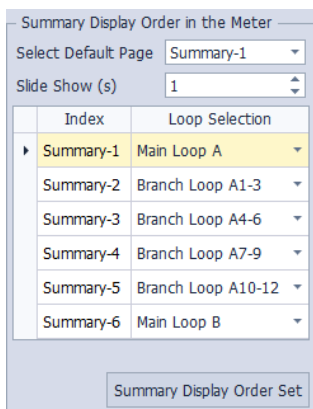
- Loop Select: Set the loop to display on the custom page in the power meter.
- Measurement parameter 1: Set the measurement parameter of the selected loop.
- Measurement parameter 2: Set the measurement parameter of the selected loop.
- Measurement parameter 3: Set the measurement parameter of the selected loop.
- Measurement parameter 4: Set the measurement parameter of the selected loop.

Set parameters to display on Summary-P page in the meter based on your needs and click **Custom Page Set**, then a pop-up window will show whether the setting is successful or not.



4.2.15 Summary Display Order in the Meter

Set the orders of parameters displayed on summary page.



- Select the default summary page: Configure loops and parameters displayed on the meter screen, and the options are:

Summary-1 (Average L-L voltage/Average three-phase current/Transient total actual power/ Frequencies)

Summary-2 (Transient total actual power/ Transient total virtual power/ Transient total apparent power/ Total real power factor)

Summary-3 (Average L-L voltage/Average three-phase current / Transient total apparent power/ Total real power factor)

Summary-4 (Average L-L voltage/Average three-phase current/Transient total actual power/ Frequencies)

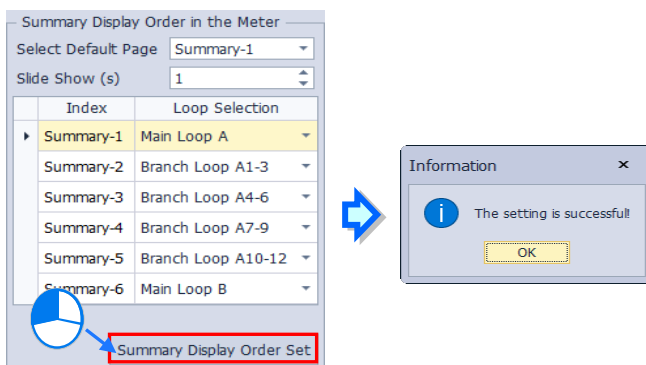
Summary-5 (Transient total actual power/ Transient total virtual power/ Transient total apparent power/ Total real power factor)

Summary-6 (Average L-L voltage/Average three-phase current/Transient total actual power/ Total real power factor)

Summary-P (User-defined page); slide shows.

- Slide Show (s): Set screen display length for slide shows.
- Summary-1: Configure the parameter value of the selected loop displayed for Summary-1.
- Summary-2: Configure the parameter value of the selected loop displayed for Summary-2.
- Summary-3: Configure the parameter value of the selected loop displayed for Summary-3.
- Summary-4: Configure the parameter value of the selected loop displayed for Summary-4.
- Summary-5: Configure the parameter value of the selected loop displayed for Summary-5.
- Summary-6: Configure the parameter value of the selected loop displayed for Summary-6.

Configure the default display based on your needs and click **Summary Display Order Set**, then a pop-up window will show whether the setting is successful or not.



4.2.16 Digital Input

The meter comes standard with two digital inputs, including DI1 and DI2. Apart from being digital inputs, you can also configure the conditions for them.

Digital Input

DI 1

Status: Not triggered

Function: Digital Input

Trigger Level: High

Debouncing time (x8 ms): 5

DI 2

Status: Triggered

Function: Digital Input

Trigger Level: Low

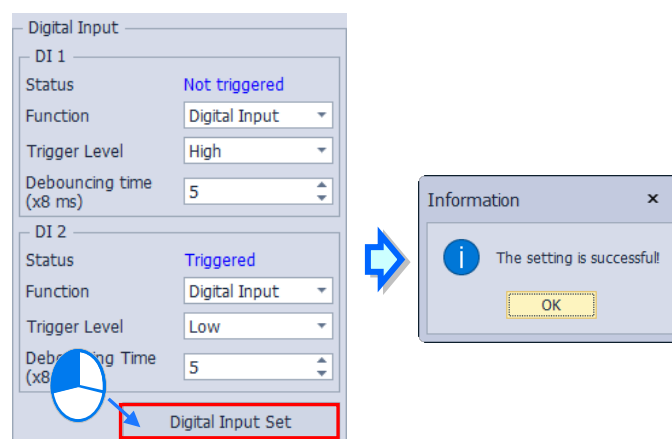
Debouncing Time (x8 ms): 5

Digital Input Set

The upper section is to configure DI1 digital input settings and the lower section is to set DI2 digital input.

- Function: Digital Input, Demand Reset, Max Demand Reset, Energy Reset, Max/ Min Reset/ Relay Reset with Digital Input being the default factory setting.
- Trigger Level: The input signal can be set to either ON (High) or OFF (Low).
- Debouncing Time(x8 ms): Set the debounce time to avoid errors with a setting range from 0 to 99 (x 8mS), while 5 (40mS) being the default factory setting.

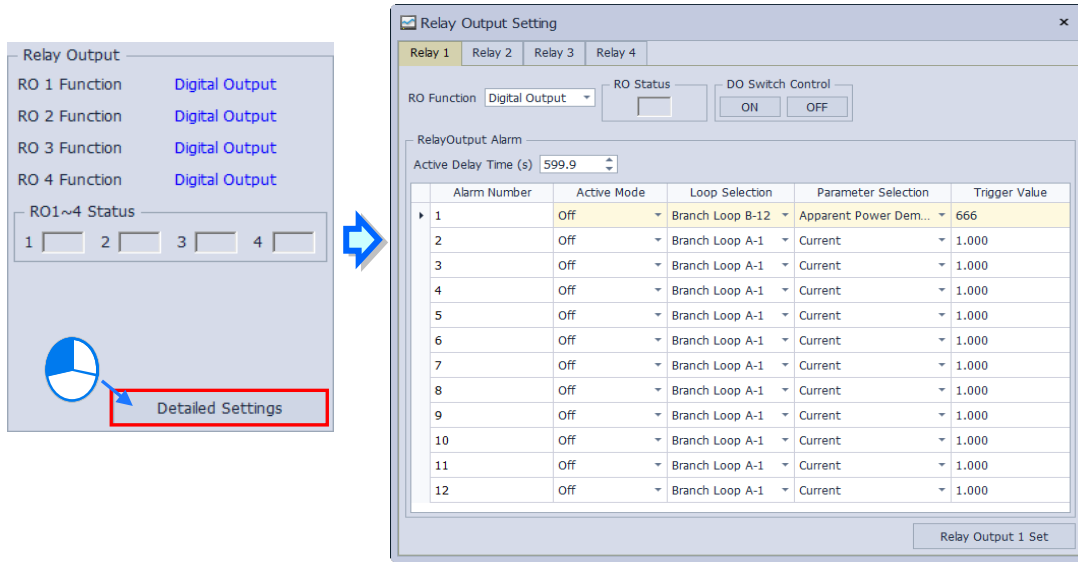
Configure the digital input settings based on your needs and click **Digital Input Set**, then a pop-up window will show whether the setting is successful or not.



4.2.17 Relay Output Setting

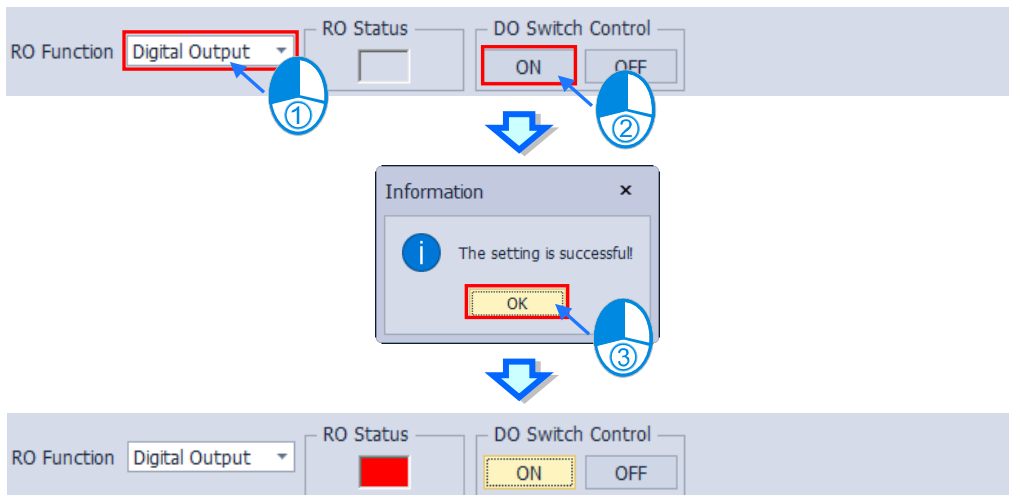
The meter comes standard with four relay outputs, including RO1, RO2, RO3, and RO4. Apart from being relay outputs, you can also set it to **Alarm** mode with Digital Output being the default setting.

Click **Detailed Settings**, Relay Output Setting window would pop up.



Digital Output:

Digital outputs can only be controlled by DPMSOft while using Digital Control mode.



Alarm:

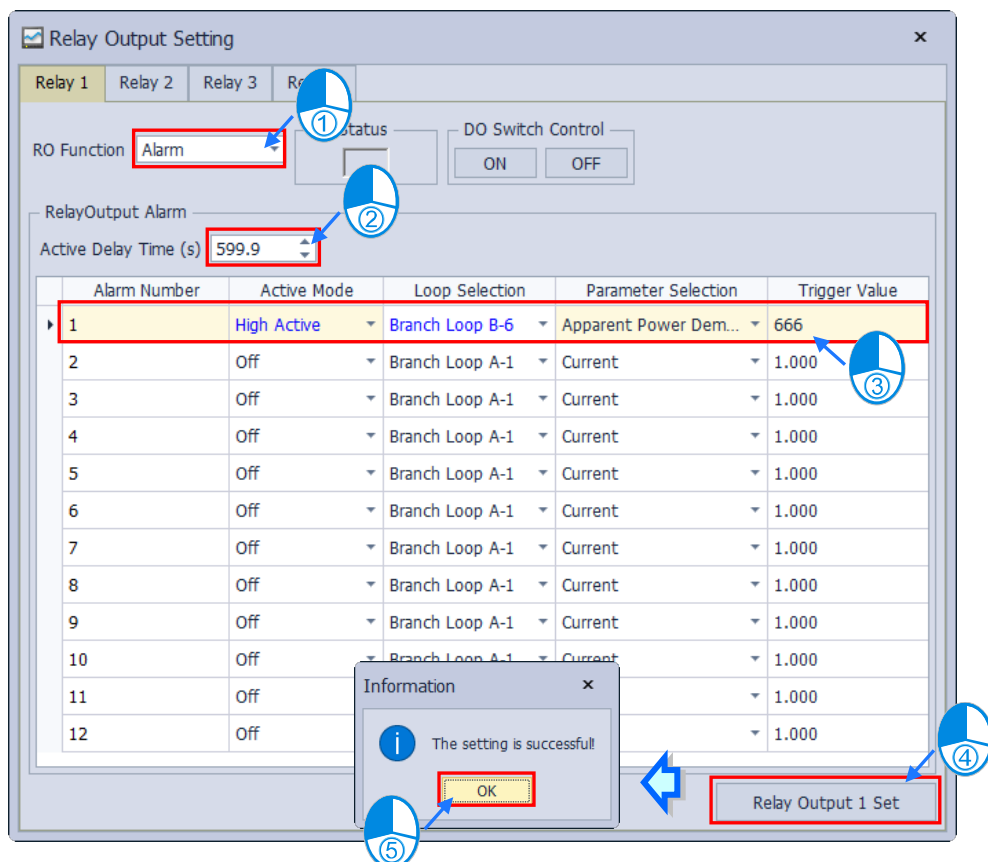
You can set the active delay time from 0 to 599.9 with 0 being the default factory setting.

A maximum of 12 conditions can be set for each relay output, which include Active Mode, Loop Selection, Parameter Selection and Trigger Value.

- Active Mode: Set a proper condition with options: Off, Low Active, High Active, Low Active and Remain, High Active and Remain.
- Loop Selection: Set the alarm loops.
- Parameter Selection: Set the parameters of alarm loops.
- Trigger Value: Set the alarm trigger values.

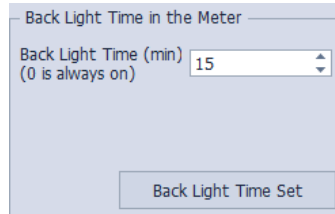
4

Configure the relay output settings based on your needs and click **Relay Output Set**, then a pop-up window will show whether the setting is successful or not.

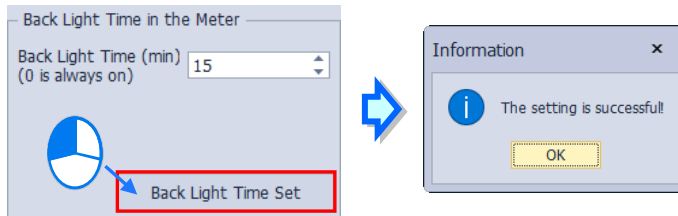


4.2.18 Back Light Time in the Meter

Set the desired backlight time setting with values ranging from 0 to 15 minutes. 0 represents always ON and the default factory setting is 1.

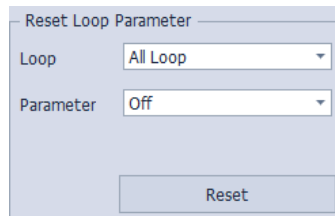


Configure the backlight time settings based on your needs and click **Back Light Time Set**, then a pop-up window will show whether the setting is successful or not.



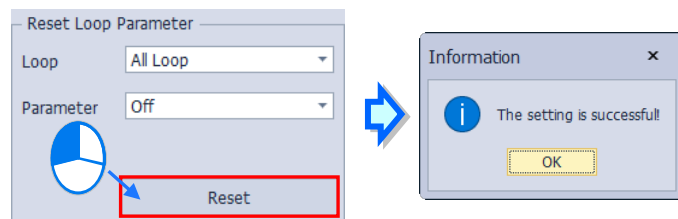
4.2.19 Reset Loop Parameter

Reset loop parameter settings.



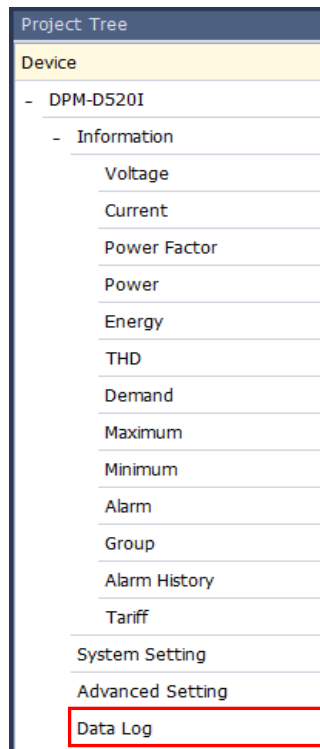
- Loop: Select the target loop to reset.
- Parameter: Select the target parameter.

Configure the reset loop parameter settings based on your needs and click **Reset**, then a pop-up window will show whether the setting is successful or not.



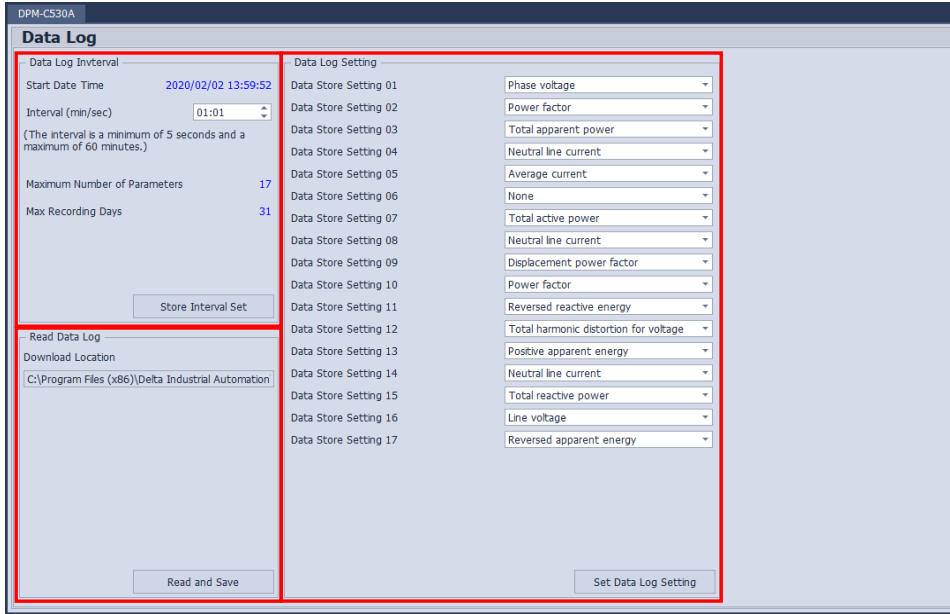
4.3 Data Log

Store the logs regarding parameters in the non-volatile memory (NVM) and download the data logs via RS-485 communications.



There're three sections on the data log window:

- Data Log Interval
 - Start Date Time: The time and date to enable data log.
 - Interval: Record the interval of the power meter, with the minimum interval as 0 (min) : 5 (sec), the maximum interval as 60 (min) : 0 (sec). If the interval is set as 0 (min) : 0 (sec), this means the interval function is disabled.
- Read Data Log
 - Read and Save: The exported logs are in CSV format and select a download location.
- Data Log Setting
 - Data Log Setting 01~17: Choose from up to 17 content parameters and sequence for data storage.

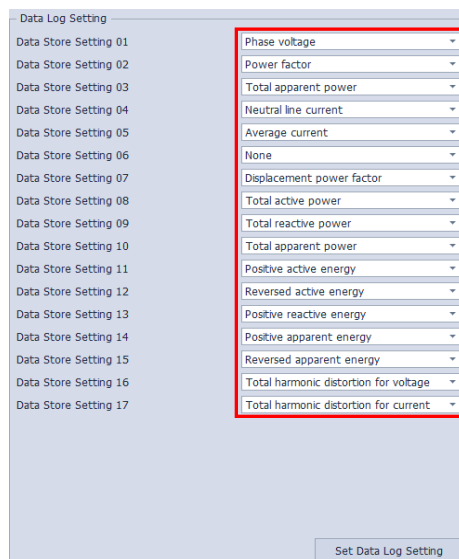


■ Data Log Specification:

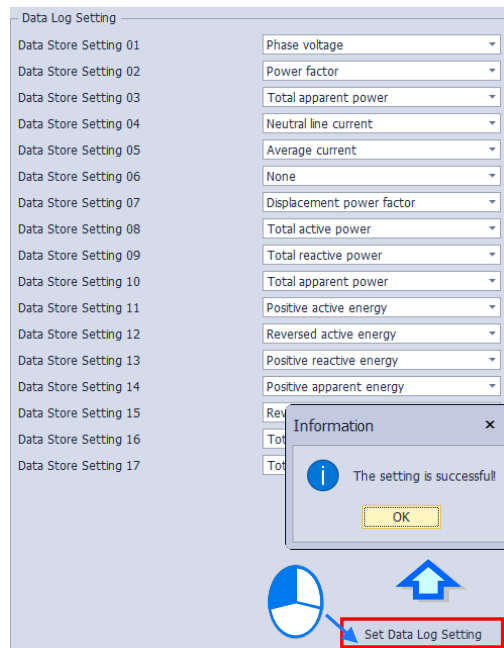
Item	Interval	0 min 0 sec ~ 0 min 59	1 min 0sec ~ 4 min 59	5 min 0 sec ~ 60 min 0
		sec	sec	sec
Maximum Parameters (number)		6	17	17
Maximum Capacity (Day)		7	31	62

Setup data log through the following steps:

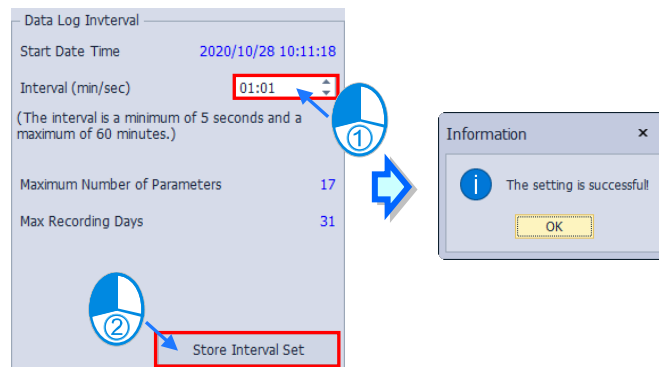
- (1) Select the desired parameters in the order 01 to 17 from the data log setting section and base on the above specifications for data storage.



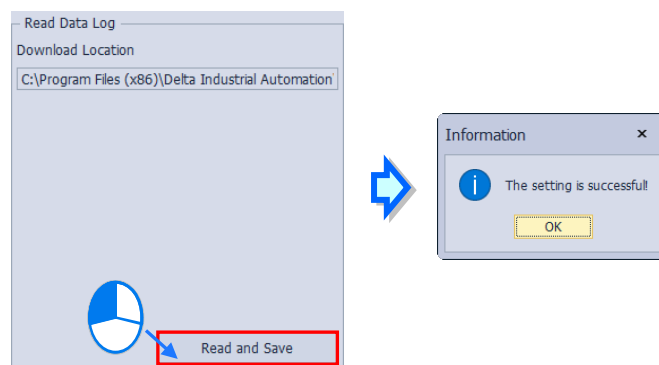
- (2) Click “Set Data Log Setting” (see below) to complete the setting.



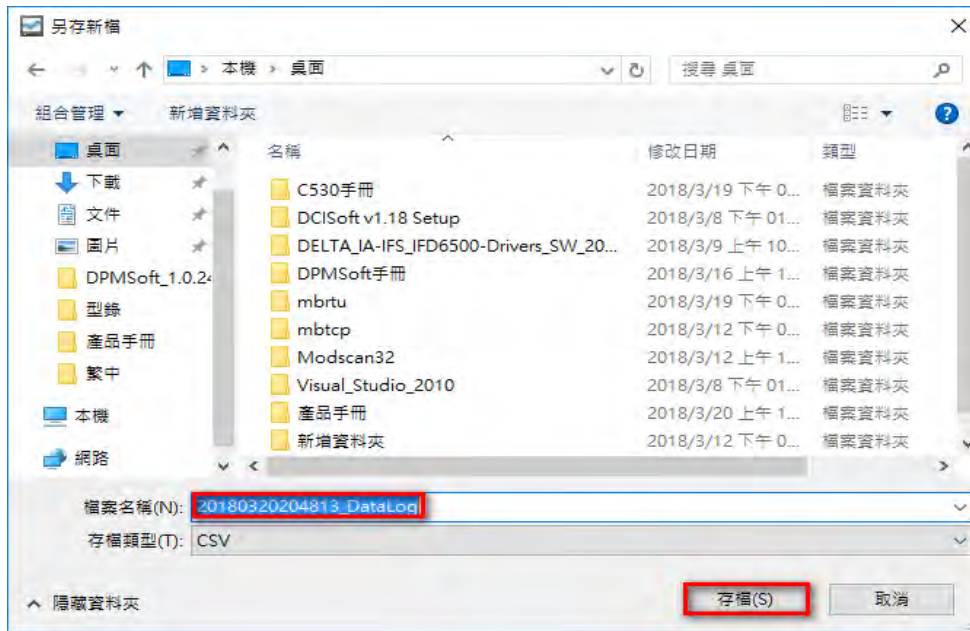
- (3) Select the desired data log interval and click “Store Interval Set” to complete the settings.



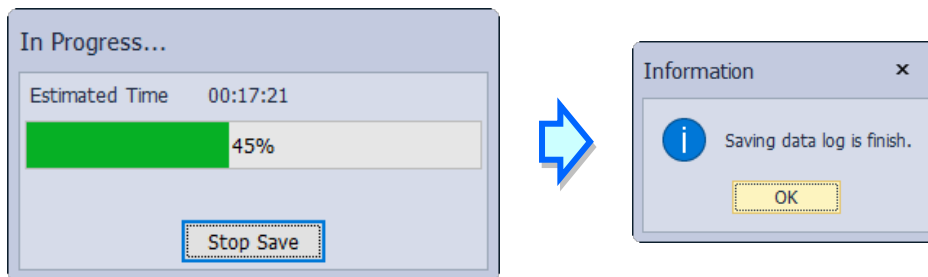
- (4) You can click “Read and Save” to download the data log onto your PC.



- (5) Choose the data log file and download location, then click “Save”.



- (6) A successful message would appears at the bottom of the page when the download is complete.



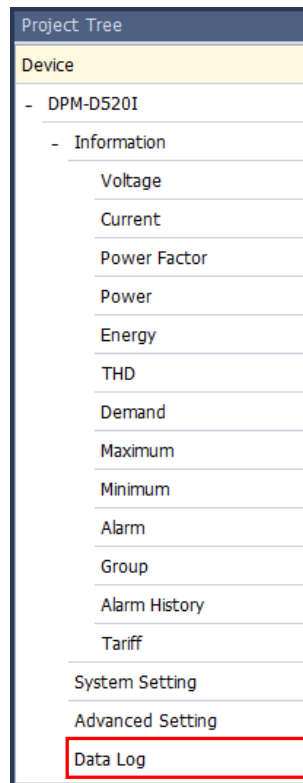
※ **Note:**

- a.) First complete the “Data Log Setting 01~17”to setup the sequence and then select the “Interval”. If “Interval” is set first, then “Data Store Setting 01~17” cannot be setup. (“ Set Data Log Setting” button cannot be clicked)
- b.) When the data store setting exceeds the specification, the exceeding content is ignored. In other words, if the interval is set at 5 sec, the data store setting from 07 and more are automatically ignored.

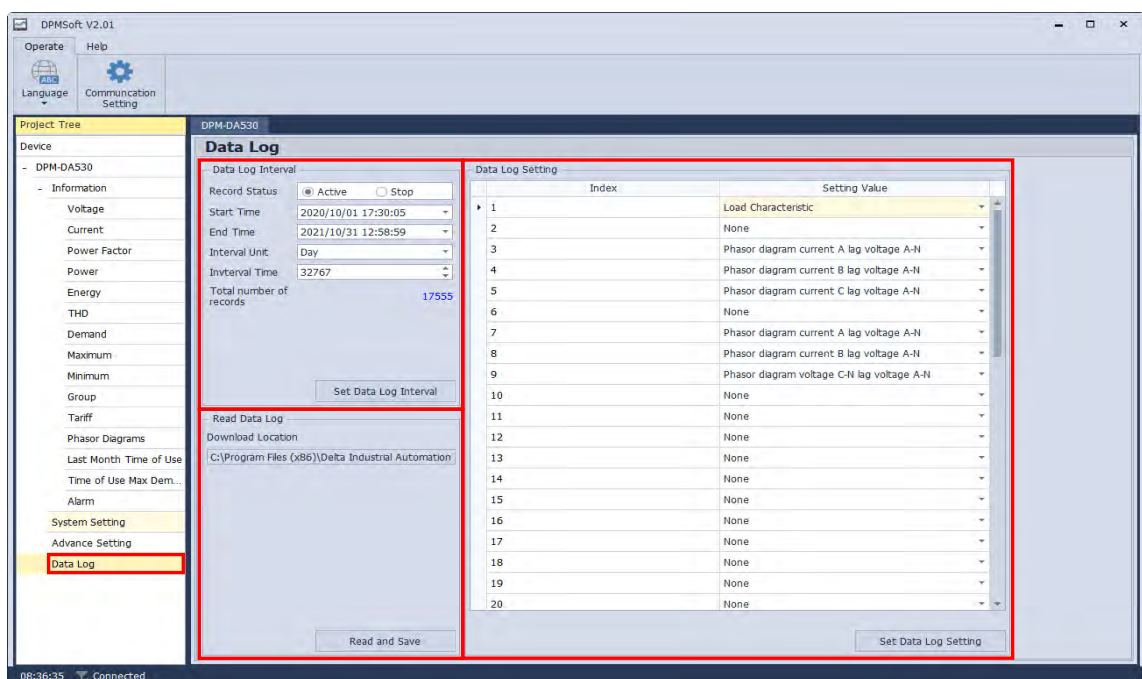
4.4 Data Log-DA Series/MA Series

As the data log configuration for DA and MA Series power meter is different from other model types, a further introduction is given in this section.

Click “Data Log” to enter the page as shown in the figure below.



There're three sections on the data log page for DA and MA series power meter.



- **Data Log Internal**
 - **Record Status:** Active or stop recording status.
 - **Start Time:** Set the time to start storing records.
 - **End Time:** Set the time to stop storing records
 - **Interval Unit:** Set the unit of interval between two records, which can be set to Second, Minute, Hour and Day.
 - **Interval Time:** Set the interval time between two records, the setting range is from 1 to 32767.
 - **Total Number of Records:** Display the current number of records. °
- **Read Data Log**
 - **Download Location:** Select the desired storage path before export the data log to a CSV file.
- **Data Log Setting :**
 - **Data storage setting 01~50:** Select the desired contents and sequences for parameters to be stored, with 90 sets of parameters at maximum.
 - ※ **Note:** Make sure that the condition setting has been completed as well as the record function being enabled before using the data log function. Any incomplete or incorrect configuration may result in recording errors ultimately. The configuration should be completed through the corresponding register, while the register must be configured via communication protocols. By following first-in-first-out principle, the earlier records would be covered sequentially when the number of records reaches the limit. Therefore, we suggest you to read and save all the record data before the maximum limit of records is reached so as to prevent data loss.

When the parameter setting of data log internal is changed, all the current record data would be erased and immediately begin a new recording. In case that you intend to modify the data log internal setting, it is necessary to turn off record function by setting "Record Status" to "Stop".