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DPM-093AB20-02
2019/05/25

DI/DO type Power Meter
DPM-C501L/C502
Operation Manual

www.deltaww.com

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DPM-C501L/C502 Operation Manual

Revision History

Version	Revision	Date
1st	The first version was published.	2018/08/24
2nd	Added DPM-C502 product information	2019/05/25

DPM-C501L/C502 Operation Manual

Table of Contents

1

Chapter 1 Product Introduction

Table of Contents

1.1 Preface

Thank you for choosing this product. This manual offers information related to the installations of DPM - C501L and DPM-C502 power meters. Multifunction power meters DPM-C501L and DPM-C502, in terms of power monitoring and control, are an obvious choice for any application. It also can be used for measurement category CAT III.

Before using the meter, please read this manual carefully to ensure proper use of this meter. Before you finish reading this manual, please observe the following notes:

- No water vapor, corrosive and flammable gas shall be present in the installation environment.
- Follow the instructions on the diagram for wiring the device.
- Grounding must be performed correctly and properly according to provisions from relatedregulations on electric work currently effective in the country.
- Do not disassemble the meter or alter its wiring with power connected.
- With power on, do not touch the power - connecting area to avoid electric shock.

If you still experience issues in the use, please contact your distributor or our customer service center. As the product gets updated and improved, modifications on the specifications will be addressed in the newest version of manual obtainable by contacting your distributor or downloading from the Delta Electronics website (http://www.delta.com.tw/ia/).

1.2 Overview

DPM-C501L and DPM-C502 are equipped with a large, back-lit LCD display, up to four lines of information can be displayed in this design.

- **DPM-C501L**

- **DPM-C502**

1.3 Safety Precautions

- **Notes on Installation**

DANGER

- Install the power meter according to instructions on the manual. Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- Only qualified electrical workers should install this equipment. Such work should be performed only after reading this entire set of instructions.
- Operate the power meter according to instructions on the manual. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- This equipment should be installed in a suitable insulation and fireproof enclosure.

- **Notes on Operation**

WARNING

- DO NOT work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment. Carefully inspect the work area for tools and objects that may have been left inside the equipment.

- **Notes on Operation**

DANGER

- Never short the secondary of a Power Transformer (PT).
- Never open circuit a Current Transformer (CT)
- Ensure the secondary winding of the CT is fixed securely on the equipment. It may damage the equipment if the secondary winding become loose during operation.
- When used with CTs, make sure the CTs are UL2808 listed in America / Canada areas and meet or exceed the accuracy specifications for IEC61869-2 class or accepted by authority having jurisdiction (AHJ) in other areas.

- **Notes on Wiring**

- When measured current is higher than the rated specification for the device, use of an external current transformer (CT) should be considered.
- When measured voltage is higher than the rated specification for the device, use of an external potential transformer (PT) should be considered. (line voltage: 35 to 690V AC L-L or phase voltage: 20 to 400V AC L-N)
- Connect only one cord on one plug on the quick connector.
- For wrongfully forced unplug, recheck the connecting cord and restart.

- **Maintenance and Check**

- While cleaning the equipment, be sure to unplug all external power sources first. Use a dry cloth to clean the equipment's exterior. DO NOT open the equipment or touch the wiring inside or it may lead to personal injury as well as damage to electrical equipment or other property. DO NOT use aerosol sprays, solvents, or abrasives.

2

Chapter 2 Product Specifications

Table of Contents

2.1 Electrical Characteristics

Measurement Accuracy					
Electric quantities	Voltage, current	± 0.5 %	Electric energy	Real power	± 0.5 %
	Real power, reactive power, apparent power	± 0.5 %		Reactive power	± 0.5 %
Power factor		± 0.5 %	Total Current Harmonic Distortion		± 1 %
Real power		± 0.5 %	Total Voltage Harmonic Distortion		± 1 %
Reactive power		± 0.5 %	Frequency		± 0.5 %
Apparent power		± 0.5 %	Harmonic		± 1 %

Input		
Voltage Connection	1PH2W, 1 CT	3PH3W, Δ connection, 3 CT, 2 PT
	1PH3W, 2 CT	3PH4W, Y connection, 3 CT, No PT
	3PH3W, Δ connection, 3 CT, No PT	3PH4W, Y connection, 3 CT, 3 PT
	3PH3W, Δ connection, 2 CT, No PT	3PH4W, Y connection, 2 CT, 3 PT
Rated Voltage	Line voltage: 35 to 690 VAC (L-L) Phase voltage: 20 to 400 VAC (L-N)	
Rated Current	1A / 5A	
Frequency	50/60 Hz	
Harmonic	DPM-C501L	Total voltage / current harmonic distortion in average
	DPM-C502	Individual voltage / current harmonic distortion in average
Voltage Input	Measuring Category: CAT III	
Alarm	Set up multi-level alarms	10 multi-level alarms
Maximum / Minimum	15/15 types	With timestamp
Power	Operating range	80 to 265 VAC (max. power: 4.6W) 100 to 300 VDC
Frequency	Operating frequency	50/60 Hz

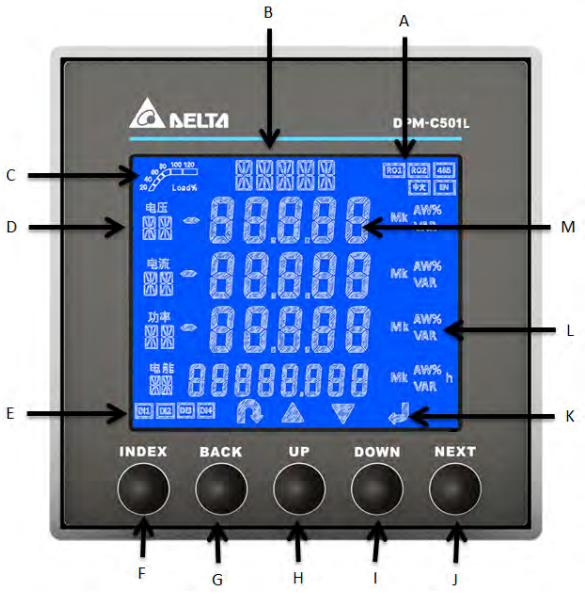
Communication	RS-485 port	MODBUS-RTU
		Baud rate 9600 / 19200 / 38400 bps
Mechanical Characteristics	Dimension (W x H x D)	96 * 96 * 91.8 mm
	IP Degree of Protection	IP52 (front display), IP20 (meter body)
Environment	Ambient operating temperature	-20 °C to +50°C (-4°F to +122°F)
	Storage temperature	-30 °C to +60 °C (-22°F to +140°F)
	Relative Humidity	5 to 95 % RH
	Altitude	Blow 2000 meter
Display		
Screen type	LCD	
Backlight	Blue LED	

Electromagnetic Compatibility	
Electrostatic Discharge	IEC 61000-4-2
Immunity to Radiated Fields	IEC 61000-4-3
Immunity to Fast Transients	IEC 61000-4-4
Immunity to Impulse Waves	IEC 61000-4-5
Conducted Immunity	IEC 61000-4-6
Immunity to Magnetic Fields	IEC 61000-4-8
Immunity to Voltage Dips	IEC 61000-4-11
Radiated Emissions	FCC Part 15 Class A, EN55011 Class A
Conducted Emissions	FCC Part 15 Class A, EN55011 Class A
Harmonics	IEC 61000-3-2
Flicker Emissions	IEC 61000-3-3

2.2 Communications Specifications

Communications	
RS-485	MODBUS RTU
Baud rate	9600 / 19200 / 38400 bps

2.3 Operating the Display



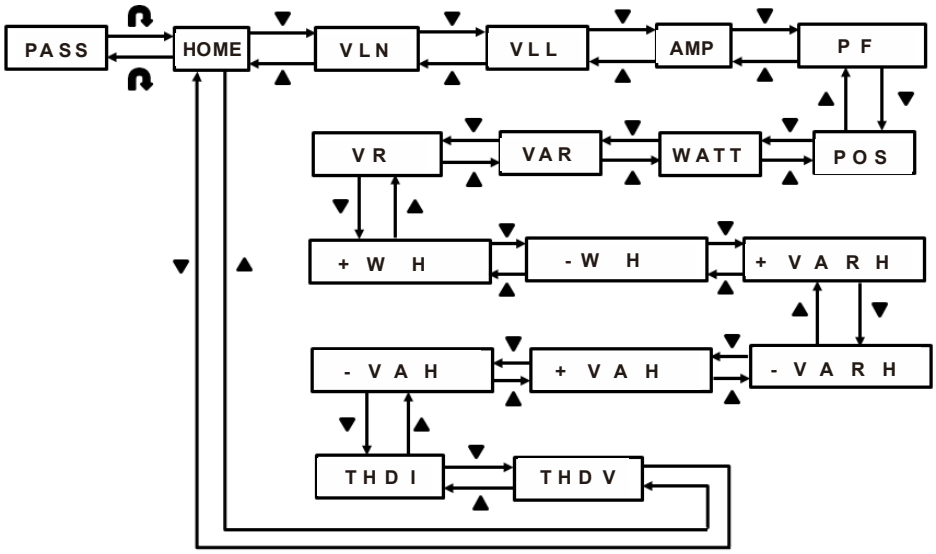
A	Enable / Disable	H	UP Key
B	Screen Title	I	DOWN Key
C	Load percentage	J	NEXT Key
D	Item	K	Operating status
E	Enable / disable digital input	L	Unit
F	INDEX Key	M	Value
G	BACK Key		

Button	Basic Mode	Setting Mode
INDEX Key	Return to the previous screen	Return to the previous screen
BACK Key	Go to setting mode or return to the previous screen	Return to the previous screen without saving the current setting
UP Key	Select item or page	Increment the number
DOWN Key	Select item or page	Decrement the number
NEXT Key	See more options	Go to setting mode and go to the next setting

2.3.1 Menu Tree

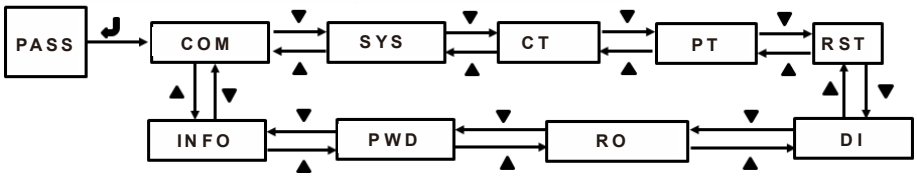
- **Display Menu Tree**

You can always use this button to return to HOME.



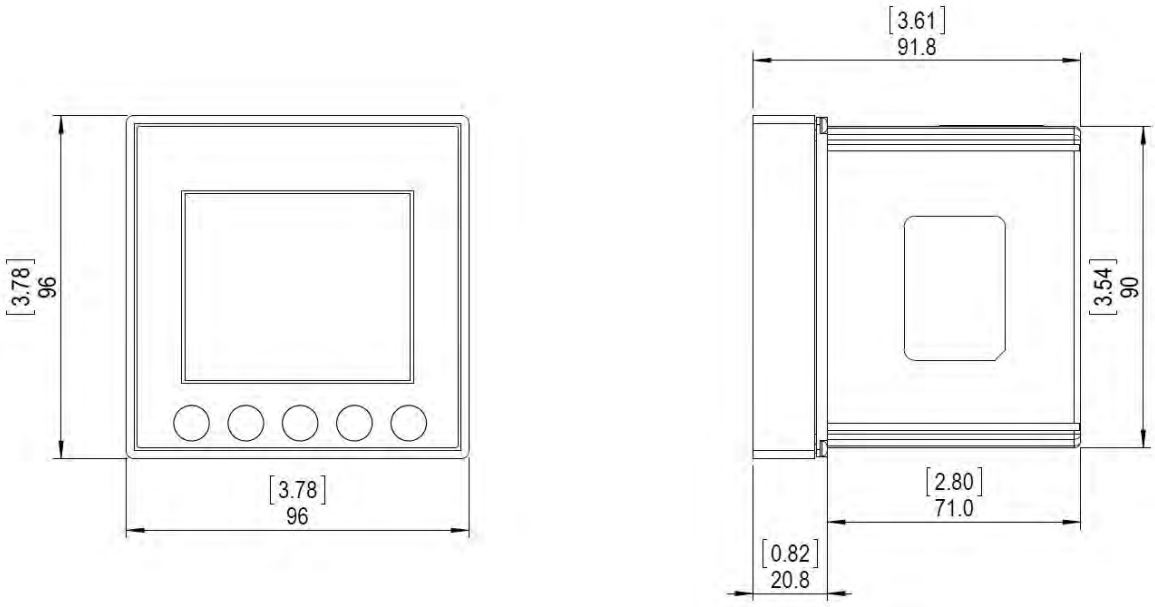
- **Setting Menu Tree**

You can always use this button to return to HOME.



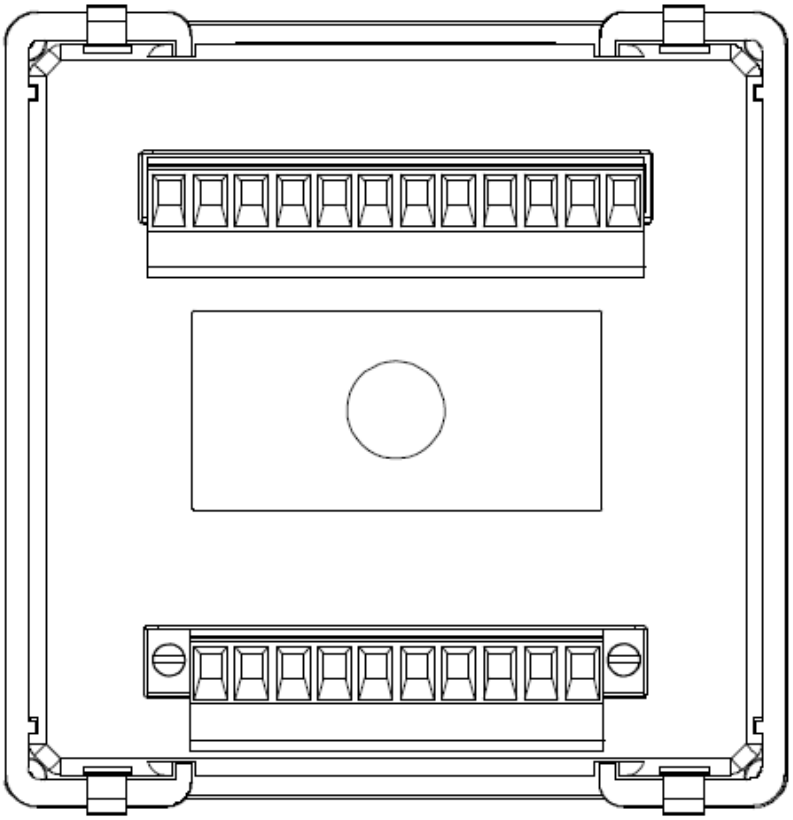
2.4 Dimension

- **Front**



Unit: mm

- **Back:**



Function		Pin	Voltage	Current
Rated voltage		VA	20V L-N ~ 400V L-N 35V L-L ~ 690V L-L	-
		VB		
		VC		
		VN		
Control power		L	80 ~ 265 VAC 100 ~ 300 VDC	400 mA MAX
		N		
Rated current		I1+	-	1A ~ 5A
		I1-		
		I2+		
		I2-		
		I3+		
		I3-		
RS-485		D+	-7 ~ +12 VDC	-
		D-		
Digital input	DI_COM	3	-	-
	DI_4	4		
	DI_3	5		
	DI_2	6		
	DI_1	7		
Digital output	DO_COM	8		
	DO_2	9		
	DO_1	10		

2.5 DI/DO

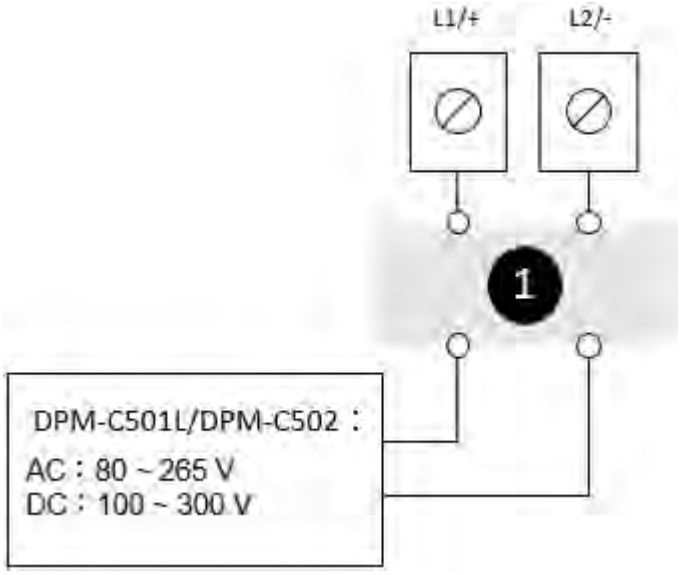
- **Digital Input (DI)**

Connector type		Removable Terminal Block
Number of inputs		4 (dry contact)
Galvanic isolation		4000 VAC 1 min
Input voltage / current		10 VDC, 5 mA
Response time	**OFF → ON**	10 ms ±10%
	ON → OFF	15 ms ±10%
Electrical isolation		Optical coupler
Screw turning torque		8.0 kgf-cm (0.8 N·m)
Cable diameter		12 ~ 24 AWG

- **Digital Output (DO)**

Connector type		Removable Terminal Block
Number of outputs		2
Galvanic isolation		4000 VAC 1 min
Output type		Relay
Output voltage / current		240 VAC / 24 VDC
Leakage current		0 uA
Maximum response time	**OFF → ON**	50ms±10%
	ON → OFF	
Screw turning torque		8.0 kgf-cm (0.8 N·m)
Cable diameter		12 ~ 24 AWG

- **Wiring Descriptions**



❶250 mA fuse:

※ Either positive or negative charge can be used on L1/+ and L2/-. When using a neutral wire for AC power, you need to connect the neutral wire to the L2/-.

※ Always use a fuse on L1/+. When using an ungrounded neutral wire to connect to the power, use a fuse on L2/-. If you are using a Power Transformer (PT) or a Current Transformer (CT), use fuses on the primary and secondary windings.

※ The rated voltage / current of the fuse, breaker, and device should be the same to prevent damage to electrical equipment or other property.

MEMO

3

Chapter 3 Installation

Table of Contents

3.1 Installation

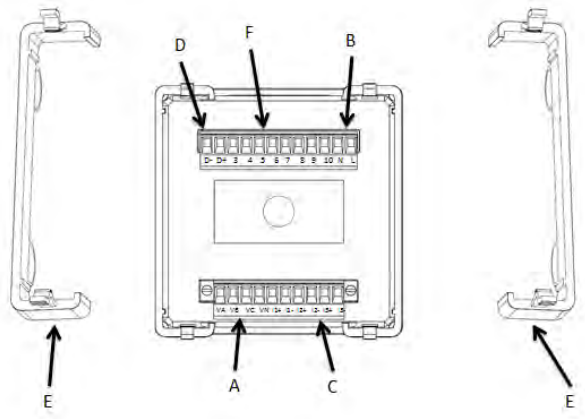
3.1.1 Installation Environment

The product should be kept in the shipping carton before installation. In order to retain the warranty coverage, the product should be stored properly when it is not to be used for an extended period of time. Some storage suggestions are:

- Store t the power meter in a clean, dry, and controlled environment.
- Store within an ambient temperature range of -30 °C to +60 °C (-22°F to +140°F).
- Store within a relative humidity range of 10% to 90% and non-condensing.
- Do not store the product in a place subjected to corrosive gases and liquids.
- Correctly packaged and placed on a solid and durable surface.
- Do not mount the product adjacent to heat-radiating elements, in a location subjected to corrosive gases, liquids, airborne dust or metallic particles or it will be subjected to high levels of electromagnetic radiation.

3.1.2 Notes on Installation

- The installation method should be based on instructions. Otherwise, an equipment breakdown may occur.
- To enhance the efficiency of cooling cycles, sufficient space must be kept between adjacent objects and baffles/walls for the installation. Otherwise, poor heat dissipation may occur.



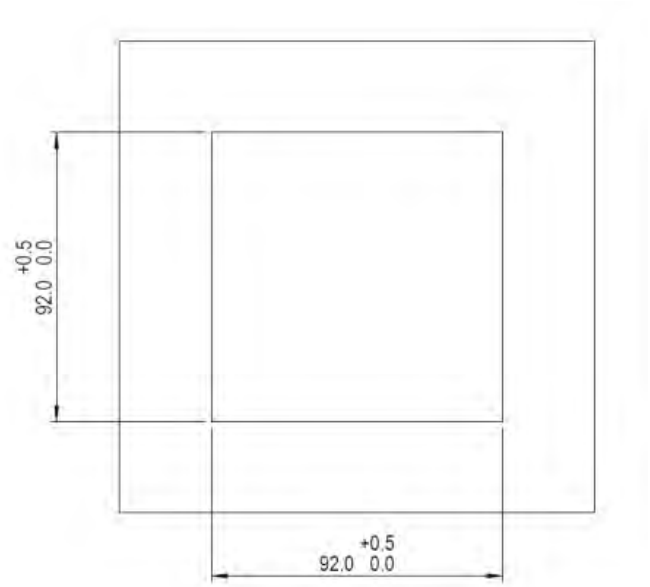
A. Voltage measurement
B. Operating voltage
C. Current measurement
D. RS-485 port
E. Securing bracket
F. DI/DO

- **Installation**

  1. The package of this multi-functional power meter comes with securing brackets for easier mounting and removing.
  2. Dimensions of the mounting hole is 92 mm * 92 mm (see the figure below)
  3. Slide the securing bracket into the slot and then push the meter in. The maximum panel thickness should be within 4.0mm.

  Note: wall mount (The installation panel or cabinet surface should be flat and in good condition.)

- **Dimensions of Mounting Hole**



Panel Hole
Thickness : 0.8~4.0mm

Unit: mm

3.2 Basic Checks

Items	Contents
General Check	■ Regularly check for losing of the fixing mount at the location where the power meter and device are connected. ■ Guard against entrance of foreign objects, such as oil, water, or metal powder at the heat dissipating holes. Guard against entrance of drill cut powders into the power meter. ■ Should the power meter be installed at a place present with harmful gas or dust, guard against entrance of those matters into the meter.
Pre-operation Check (not supplied with power)	■ Insulate the connecting spot of the wiring terminals. ■ Communications wiring should be done properly, or abnormal operations might result. ■ Check for presence of conducive and flammable objects, such as screws or metal pieces, in the power meter. ■ Should electronic devices used near the power meter experience electromagnetic interference, tune with instruments to reduce electromagnetic interference. ■ Check for correct voltage level for the power supplied to the power meter.
Pre-running Check (supplied with power)	■ Check whether power indicator light is lit. ■ Check whether communication between every device is normal. ■ If there is any abnormal response from the power meter, contact your distributor or our customer service center.

3.3 Wiring

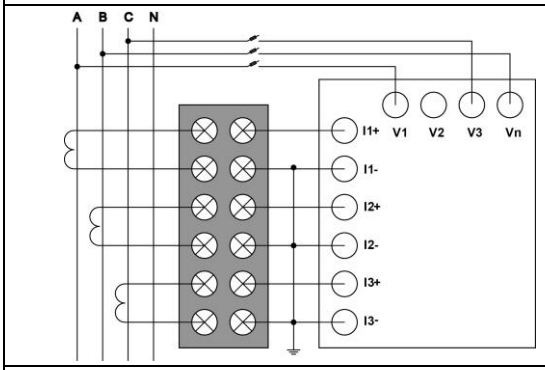
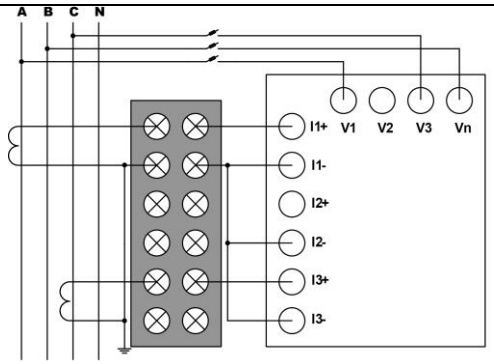
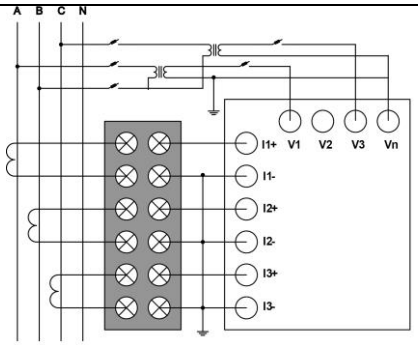
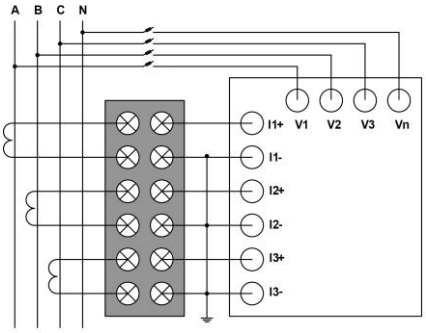
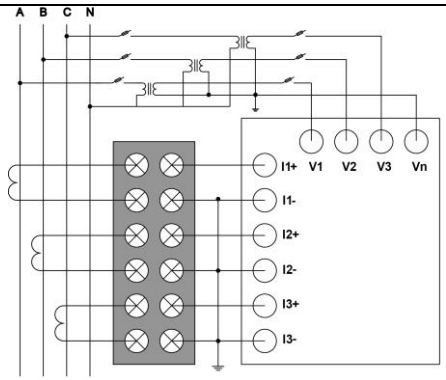
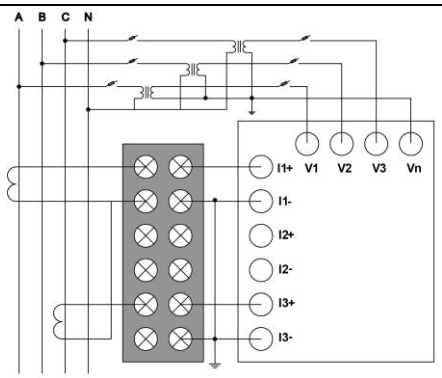
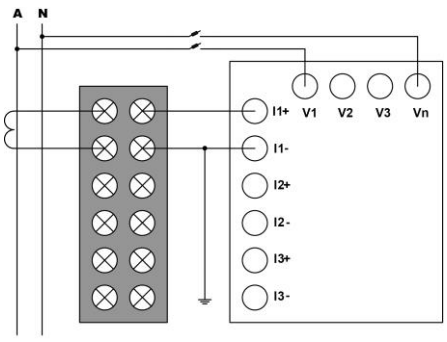
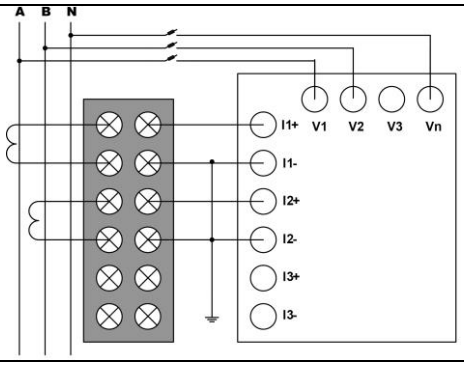
3.3.1 Wiring Diagrams

- To avoid electric shock, do not alter wiring when the power is on.
- As there is no power switch on the power meter, be sure to install a breaker switch on the power cord for the meter.
- When measured voltage is higher than the rated specification for the device, use of an external potential transformer (PT) is necessary.
- When measured current is higher than the rated specification for the device, use of an external current transformer (CT) is necessary.

Recommended wiring materials are shown below:

Connecting Terminals	Wire Diameters	Screw Turning Torque	Temperature rating
Operating power, RS-485, DI/DO	AWG 12 to 24	8.0 kgf-cm (0.8 N·m)	more than 70°C
Voltage and current measurement	AWG 12 to 24	8.0 kgf-cm (0.8 N·m)	more than 70°C

- **Connection**

3PH3W, Δ connection, 3 CT, No PT	3PH3W, Δ connection, 2 CT, No PT
	
3PH3W, Δ connection, 3 CT, 2 PT	**3PH4W, Y connection, 3 CT, No PT**
	
3PH4W, Y connection, 3 CT, 3 PT	**3PH4W, Y connection, 2 CT, 3 PT**
	
1PH2W, 1 CT	**1PH3W, 2 CT**
	

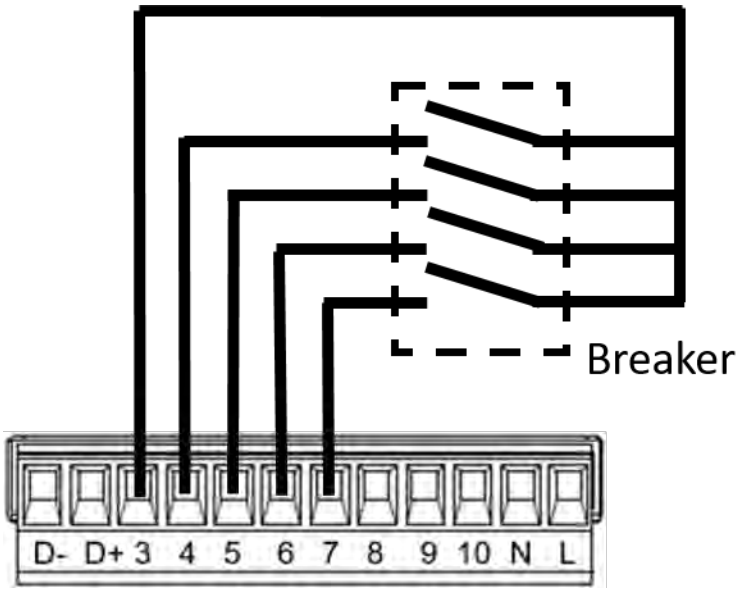
The following symbols are used in the diagram:

Symbol					
Description	Grounding	Current transformer	Terminal block	Voltage transformer	Fuse

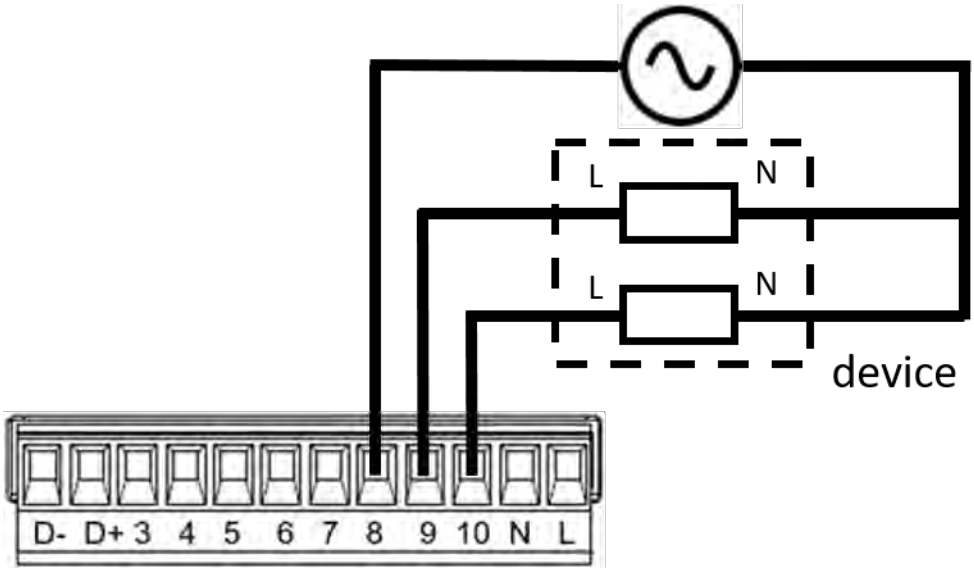
3.3.2 DI / DO Connection

3	4	5	6	7	8	9	10
DI_COM	DI_4	DI_3	DI_2	DI_1	DO_COM	DO_2	DO_1

- **DI Wiring**



- **DO Wiring**



3.3.3 Communication Characteristics

- **Communications Specifications:**

Max. Communication Distance	1200 m	**Baud Rate**	9600, 19200, 38400
Max. Connection Number	32	**Data Length**	8
Communication Protocols	MODBUS RTU	**Parity**	None, Odd, Even
Function Code	03, 06, 10, FE (only available for DPM-C502)	**Stop Bit**	1

- Use two-wire cables for RS-485 communication.
- The D+ communication terminal for all devices should be connected on the same twisted pair cable. The D- terminals should be connected on the other twisted pair cable. The insulation net is grounded. The device on the end terminal needs to have terminal resistor installed on it.
- Use cables with a diameter of 14 to 24 AWG.

MEMO

4

Chapter 4 Operation

Table of Contents

4.1 General Operation

1. Use UP and DOWN keys to switch among setting pages.
2. You can go back to HOME page by using BACK or INDEX keys.
   Note 1: use BACK key in HOME page to enter the setting page.
   Note 2: press NEXT key for 3 seconds in HOME page to switch the language display between Chinese and English.

4.1.1 Setting Menu

- HOME page (HOME): voltage values measured by the power meter, including average voltage (VT), average current (IT), total potential transformer (PT), positive active energy (ET).
- Phase voltage (VLN): phase voltage values measured by the power meter, including phase A voltage (AN), phase B voltage (BN), phase C voltage (CN) and average phase voltage (T).
- Line voltage (VLL): line voltage values measured by the power meter, including A-B line voltage (AB), B-C line voltage (BC), C-A line voltage (CA), and average line voltage (T).
- Electric current page (AMP): electric current measured by the power meter, including phase A current (A), phase B current (B), phase C current (C) and average current (T).
- Power factor page (PF): power factors measured by the power meter, including power factors of phase A (A), phase B (B), phase C(C), and total power factor (T).
- Active power, reactive power, and apparent power page (PQS): values measured by the power meter, including total active power (P), total reactive power (Q), total apparent power (S) and frequency (Hz).
- Active power page (WATT): active power value measured by the power meter, including active power of phase A (A), phase B (B), phase C (C) and total active power (T).
- Reactive power page (VAR): reactive power value measured by the power meter, including reactive power of phase A (A), phase B (B), phase C (C) and total reactive power (T).
- Apparent power page (VA): apparent power value measured by the power meter, including apparent power of phase A (A), phase B (B), phase C (C) and total apparent power (T).
- Positive active energy page (+WH): positive active energy measured by the power meter, including positive active energy (PH).
- Reversed active energy page (-WH): reversed active energy measured by the power meter, including reversed active energy (PH).
- Positive reactive energy page (+VARH): positive reactive energy measured by the power meter, including positive reactive energy (QH).
- Reversed reactive energy page (-VARH): reversed reactive energy measured by the power meter, including reserved reactive energy (QH).
- Positive apparent energy page (+VAH): positive apparent energy measured by the power meter, including positive apparent energy (SH).

- Reversed apparent energy page (-VAH): reversed apparent energy measured by the power meter, including reserved apparent energy (SH).
- Total harmonic distortion of current page (THD I): current harmonic distortion measured by the power meter, including harmonic distortion for phase A current (A), harmonic distortion for phase B current (B), harmonic distortion for phase C current (C) and total harmonic distortion for current (T).
- Total harmonic distortion of voltage page (THD I): voltage harmonic distortion measured by the power meter, including harmonic distortion for phase A voltage (A), harmonic distortion for phase B voltage (B), harmonic distortion for phase C voltage (C) and total harmonic distortion for voltage (T).

4.2 Setups

4.2.1 Password Setup (PASS)

- Password: before using power meter, you need to enter the password (default 0000)
- Steps:
    1. Press NEXT key till the first digit starts blinking
    2. Use UP and DOWN keys to select the first digit of the password
    3. Press ENTER key to confirm the selected digit and you can start to set the next digit
    4. Repeat steps 2-3 till you complete the setting of the 4 digit password.
    5. After you complete the setting of the 4 digit password, press ENTER key to go to the parameter setting page.

Note 1: if you need to edit the setting you just set, you can press BACK key and the digit will stop blinking. Press NEXT key till the first digit starts blinking again and follow steps 2-3 to set a new password.

Note 2: press BACK key to leave the password page and go to HOME page.

4.2.2 Communication Setup (COM)

- Address (ID): device ID; its address setting range is 1-254 (default: 1); 255 is a broadcast ID.
- Baud Rate (BR): transmission speed; the setting options are 9600 bps (default), 19200 and 38400 bps.
- Parity setting (PA): odd and even checking bit for communication; the setting options are None (8n1), Even (8E1), and Odd (8o1); default: None.
- Steps:
    1. Press NEXT key till the first digit starts blinking
    2. Use UP and DOWN keys to select the device ID.
    3. Press NEXT key to confirm the setting and start to set the next device ID.
    4. Repeat steps 2-3 till you complete the settings of the 3 digit device ID. Press NEXT key to set up the baud rate.
    5. When the option starts blinking, you can use UP and DOWN keys to select the baud rate you need.
    6. Press NEXT key to confirm the setting and start to set the next setting, parity.

7. When the option starts blinking, you can use UP and DOWN keys to select the parity you need.
8. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

4.2.3 System Setup (SYS)

- Wiring methods (WR): options are one-phase two-wire (1PH2W), one-phase three-wire (1PH3W), three-phase three-wire (3PH3W), and three-phase four-wire (3PH4W); default: three-phase four-wire.
- Number of current transformers (CT): options are 1, 2 and 3; default: 3.
- Number of potential transformers (PT): options are 0, 2 and 3; default: 3.
- Steps:
  1. Press NEXT key till the option starts blinking.
  2. Use UP and DOWN keys to select the wiring method.
  3. Press NEXT key to confirm the setting and start to set the next setting, the number of current transformers (CT).
  4. When the option starts blinking, you can use UP and DOWN keys to select the number of current transformers you need.
  5. Press NEXT key to confirm the setting and start to set the next setting, the number of potential transformers (PT).
  6. When the option starts blinking, you can use UP and DOWN keys to select the number of potential transformers you need.
  7. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

4.2.4 Current Transformer Setup (CT)

- Ampere for the primary-side current transformer: ranging from 1 to 9999 A; default: 5 A.
- Ampere for the secondary-side current transformer: options are 1 and 5 A; default 5 A.
- Steps:
  1. Press NEXT key till the first digit starts blinking
  2. Use UP and DOWN keys to select the number for the primary-side current transformer.
  3. Press NEXT key to confirm the setting and start to set the next number for the primary-side current transformer.
  4. Repeat steps 2-3 till you complete the settings of the 4 digit number for the primary-side current transformer. Press NEXT key to set up the secondary-side current transformer.
  5. When the option starts blinking, you can use UP and DOWN keys to select the number of the

secondary-side current transformer.

6. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

4.2.5 Potential Transformer Setup (PT)

- Voltage for the primary-side potential transformer: ranging from 1 to 65534 V; default: 1 V.
- Voltage for the secondary-side potential transformer: ranging from 1 to 9999 V; default: 1 V.
- Steps:
  1. Press NEXT key till the first digit starts blinking
  2. Use UP and DOWN keys to select the number for the primary-side potential transformer.
  3. Press NEXT key to confirm the setting and start to set the next number for the primary-side potential transformer.
  4. Repeat steps 2-3 till you complete the settings of the 5 digit number for the primary-side potential transformer. Press NEXT key to set up the secondary-side potential transformer.
  5. When the option starts blinking, you can use UP and DOWN keys to select the number of the secondary-side potential transformer.
  6. Press NEXT key to confirm the setting and start to set the next number for the primary-side potential transformer.
  7. Repeat steps 5-6 till you complete the settings of the 4 digit number for the primary-side potential transformer.
  8. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

4.2.6 Reset (RST)

- No action (nonE): do not reset.
- Restore to defaults (dEF): restore the power meter parameters to default settings.
- Reset the accumulated value of electric energy (PH) on the meter to zero.
- Reset the demand value: clear the recorded demand value on the meter. (only available for DPM-C502)
- Clear alarm logs and number of alarm times: clear all detected alarm (ALA) logs on the meter.
- Reset the minimum and maximum values: reset the recorded minimum and maximum values on the meter.
- Clear the saved logs (LOG): clear all the data logs. (only available for DPM-C502)
- Clear the TOU: clear the time of use values. (only available for DPM-C502)

- Steps:
    1. Press NEXT key till the option starts blinking.
    2. Use UP and DOWN keys to select the reset options.
    3. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

4.2.7 Digital Input (DI)

- Digital input #1 (D1): enable (on) or disable (oFF) the 1st digital input, default: disable (oFF)
- Digital input #2 (D2): enable (on) or disable (oFF) the 2nd digital input, default: disable (oFF)
- Digital input #3 (D3): enable (on) or disable (oFF) the 3rd digital input, default: disable (oFF)
- Digital input #4 (D4): enable (on) or disable (oFF) the 4th digital input, default: disable (oFF)
- Steps:
    1. Press NEXT key till the option starts blinking.
    2. Use UP and DOWN keys to select ON or OFF.
    3. Press NEXT key to confirm the setting and start to set the next digital input.
    4. When the option starts blinking, you can use UP and DOWN keys to select ON or OFF.
    5. Press NEXT key to confirm the setting.
    6. Repeat steps 4-5 till you complete the settings of the last digital input.
    7. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

4.2.8 Relay Output (RO)

- Relay output#1(R1): enable (on) or disable (oFF) the first relay output; default: OFF (oFF)
- Relay output#1(R2): enable (on) or disable (oFF) the second relay output; default: OFF (oFF)
- Steps:
    1. Press NEXT key till the option starts blinking.
    2. Use UP and DOWN keys to select the setting options.
    3. Press NEXT key to confirm the setting and start to set the next relay output.
    4. When the option starts blinking, you can use UP and DOWN keys to select the setting options.
    5. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

- Descriptions on the LCD display items of the relay output

LCD display	Item	Description
	Disable	This function is disabled.
	Over-current alarm	If the over-current alarm is triggered, the corresponding relay is short- circuit. If the over-current alarm is canceled, the corresponding relay is open-circuit.
	Over line voltage alarm	If the over line voltage alarm is triggered, the corresponding relay is short- circuit. If the over line voltage alarm is canceled, the corresponding relay is open-circuit.
	Under line voltage alarm	If the under line voltage alarm is triggered, the corresponding relay is short-circuit. If the under line voltage alarm is canceled, the corresponding relay is open-circuit.
	Over phase voltage alarm	If the over phase voltage alarm is triggered, the corresponding relay is short- circuit. If the over phase voltage alarm is canceled, the corresponding relay is open-circuit.
	Under phase voltage alarm	If the under phase voltage alarm is triggered, the corresponding relay is short-circuit. If the under phase voltage alarm is canceled, the corresponding relay is open-circuit.
	Over active energy alarm	If the over active energy alarm is triggered, the corresponding relay is short- circuit. If the over active energy alarm is canceled, the corresponding relay is open-circuit.
	Over reactive energy alarm	If the over reactive energy alarm is triggered, the corresponding relay is short-circuit. If the over reactive energy alarm is canceled, the corresponding relay is open-circuit.

	Over apparent power alarm	If the over apparent power alarm is triggered, the corresponding relay is short-circuit. If the over apparent power alarm is canceled, the corresponding relay is open-circuit.
	Over frequency alarm	If the over frequency alarm is triggered, the corresponding relay is short- circuit. If the over frequency alarm is canceled, the corresponding relay is open-circuit.
	Under frequency alarm	If the under frequency alarm is triggered, the corresponding relay is short- circuit. If the under frequency alarm is canceled, the corresponding relay is open-circuit.
	Digital input 1	If the digital input 1 receives a higher potential, the corresponding relay is short-circuit. If the digital input 1 receives a lower potential, the corresponding relay is open-circuit.
	Digital input 2	If the digital input 2 receives a higher potential, the corresponding relay is short-circuit. If the digital input 1 receives a lower potential, the corresponding relay is open-circuit.
	Digital input 3	If the digital input 3 receives a higher potential, the corresponding relay is short-circuit. If the digital input 1 receives a lower potential, the corresponding relay is open-circuit.
	Digital input 4	If the digital input 4 receives a higher potential, the corresponding relay is short-circuit. If the digital input 1 receives a lower potential, the corresponding relay is open-circuit.

4.2.9 Edit Password (PWD)

- Edit the password (default 0000)
- Steps:
  1. Press NEXT key till the first digit starts blinking
  2. Use UP and DOWN keys to select the first digit of the password
  3. Press NEXT key to confirm the setting and start to set the next digital input.
  4. Repeat steps 2-3 till you complete the setting of the 4 digit password.
  5. Press NEXT key to confirm the setting.

Note: You can go back to the previous setting item by pressing BACK key anytime, whether you have completed or canceled the setting.

4.2.10 Meter Information (INFO)

- Model: C501L or C502
- Firmware version: 1XXXX
- Firmware release date: YYYYMMDD

4.3 Power Analysis Values

4.3.1 Total Harmonic Distortion Measurement

The total harmonic distortion (THD) is a measurement of the harmonic distortion and is defined as the ratio between the power of the harmonic frequencies above the base frequency and the power of the base frequency. The total harmonic distortions for current/voltage are calculated using the following formula.

Total Harmonic Distortion for Current	$THD_I = \frac{1}{\lvert I_{fund} \rvert} \sqrt{\sum_{n=2}^{31} \lvert I_{n.Harm} \rvert^2}$
Total Harmonic Distortion for Voltage	$THD_U = \frac{1}{\lvert U_{fund} \rvert} \sqrt{\sum_{n=2}^{31} \lvert U_{n.Harm} \rvert^2}$

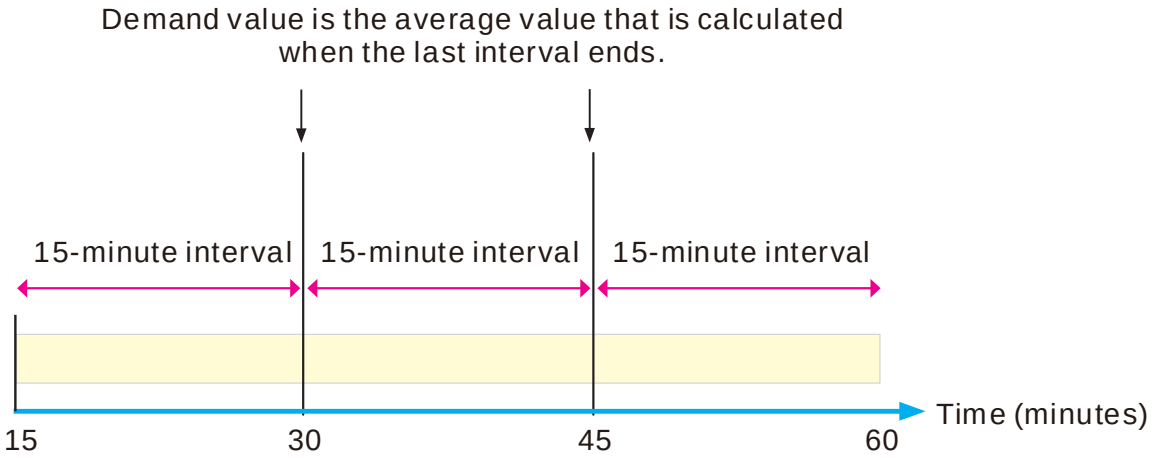
4.3.2 Demand Calculation Method (only available for DPM-C502)

The power meter provides measured values for current demand, active power demand, reactive power demand and apparent power demand. You can also calculate the last, present, predicted and peak demand values from above measured values.

Fixed block interval demand method

Select an interval from 1 to 60 minutes (in 1-minute increments). Take a fifteen-minute interval as the example shown below. The power meter calculates and updates the demand at the end of each interval. The present, predicted and peak demand values are updated every second, the last demand value is updated at the end of the interval and is treated as the present demand after update.

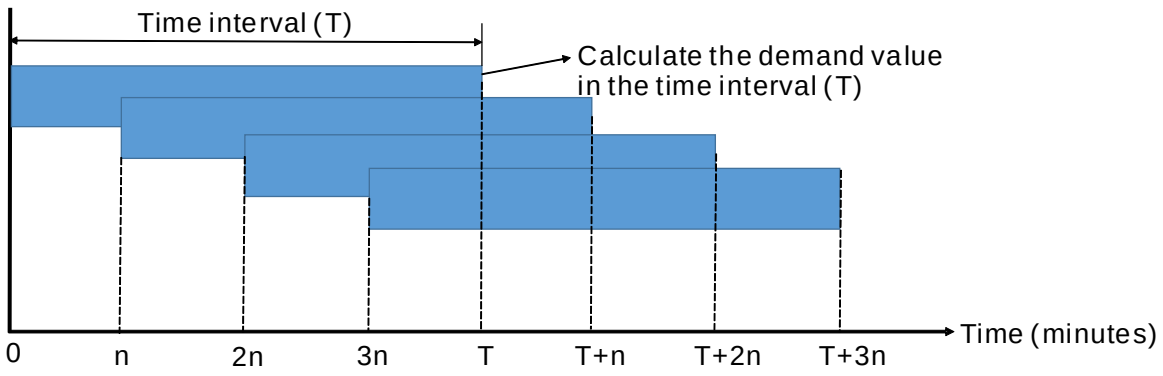
- Last demand: the power meter calculates the value when the last interval completes.
- Present demand: the power meter calculates the value during the current interval.
- Predicted demand: the power meter calculates the value before the current interval completes.
- Peak demand: the power meter calculates the maximum value during the current interval.



Sliding block interval demand method

Take a fifteen-minute time interval (T) as the example shown below and set the (n) to 1 minute. The power meter displays the demand value for the last completed interval. The present, predicted and peak demand values are updated every (T+n) minutes, the last demand value is updated at the end of the interval and is treated as the present demand after update.

- Last demand: the power meter calculates the value when the last interval completes. After reaching T, it refreshes the last demand value every (T+n) minutes.
- Present demand: the power meter calculates the value during the current interval.
- Predicted demand: the power meter calculates the value before the current interval completes. After reaching T, it refreshes the predicted demand value every (T+n) minutes.
- Peak demand: the power meter calculates the maximum value during the current interval. After reaching T, it refreshes the peak demand value every (T+n) minutes.

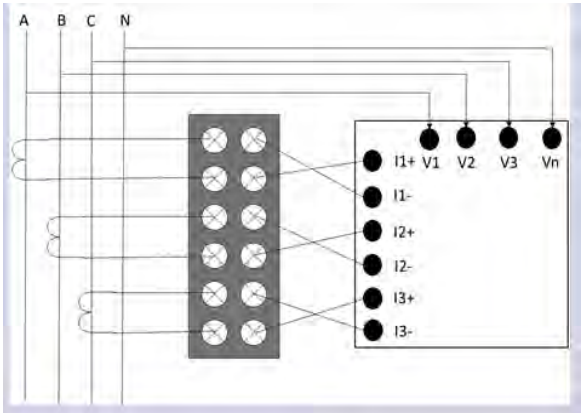
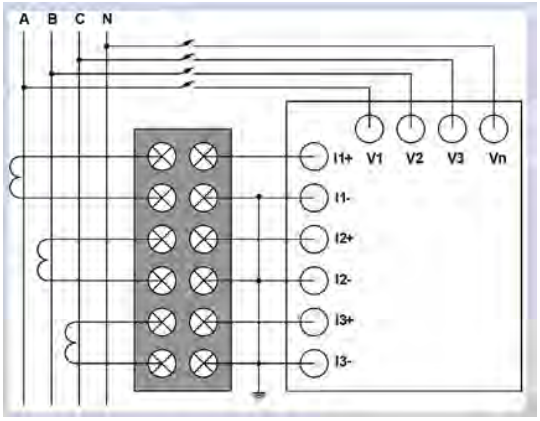


4.4 Auto-wiring (only available for DPM-C502)

This is a future function for DPM-C502. It will be available when the DPMSoft V1.26.8 is ready.

When the CT polarity (negative and positive) is incorrectly wired, DPM-C502 treats the wiring as a correct one.

For example, I1- to I1 + can be seen as I1+ to I1-.

Incorrect	Correct
	

5

Chapter 5 Parameters and Functions

Table of Contents

5.1 Advanced Features

DPM-C501L: Harmonic measurements, including voltage and current harmonics.

DPM-C502: Harmonic measurements, including voltage and current harmonics. Features such as 1-31 levels of harmonic measurements, data log, time of use measurement, demand value measurement are also included. For data log feature, you can store data for up to 7 days and the minimum interval can be set to 1 minute. For the time of use feature, up to 4 groups can be set. Refer to parameters below for more details.

5.2 Overview of Parameters

MODBUS Address		Item	Range	Data Type	Unit	Data Size (byte)	Read (R) / Write (W)
Hex	Modicom Format						
0. System Parameters: 0001 - 00FF							
1	40002	Present date	Year: 00-99 Month: 1-12	byte	Year, Month	2	R/W
2	40003		Date: 1-31 Week: Sun-Sat	byte	Date, Week	2	R/W
3	40004	Present time	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W
4	40005		Second: 00-59	word	Second	2	R/W
5	40006	Meter Constant	3200	uint	P/kWh	2	R
6	40007	Meter Model	0: None 6: C501L 12: C502	word		2	R
7	40008	Total running time of the meter	Day: 0-65535	uint	Day	2	R
8	40009		Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R

9	40010	Firmware version	0.0000 - 9.9999	uint		2	R
A	40011	Firmware release date	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
B	40012		Date: 1-31	word	Date	2	R
C	40013	Reserved					
D	40014	Power system configuration	0: 3φ4W 1: 3φ3W 2: 1φ2W 3: 1φ3W	word		2	R/W
E	40015	Primary CT (A)	1 - 9999	uint	A	2	R/W
F	40016	Secondary CT (A)	0：1A 1：5A	word	A	2	R/W
10	40017	Primary PT	1 - 65534	uint	V	2	R/W
11	40018	Secondary PT	1 - 9999	uint	V	2	R/W
12	40019	Quantity of transformer	0: 3CT3PT 1: 3CT2PT 2: 3CT0PT 3: 2CT3PT 4: 2CT2PT 5: 2CT0PT 6: 1CT3PT 7: 1CT2PT 8: 1CT0PT	word		2	R/W
13	40020	Reserved					
14	40021	Backlight delay	1 - 99	word	Second	2	R/W

		Available for C501L: V1.0006 or later					
15	40022	Reserved					
16	40023	Baud Rate	0: 9600 1: 19200 2: 38400	word	bps	2	R/W
17	40024	Communication mode	1: RTU	word		2	R/W
18	40025	Data bit	0: 8	word	bit	2	R/W
19	40026	Stop bit	0: None 1: Even 2: Odd	word		2	R/W
1A	40027	Stop bit	0: 1	word	bit	2	R/W
1B	40028	Modbus address	1 – 254	word		2	R/W
1C	40029	Reset	0: None 1: Reset to factory default 2: Reset value of energy 3: Reset the demand value (Available for C502 only) 4. Reset number of alarm times 5. Reset max./min. value 6. Clear alarm logs (Available for C502 only) 8. Clear the TOU (Available for C502 only)	word		2	W
1D	40030	Demand method (Available for C502 only)	0: Fixed block 1: Sliding block	word		2	W

1E	40031	Demand time interval (Available for C502 only)	1 – 60	word	Minute	2	R/W
Alarm - Over Current							
1F	40032	Alarm Enable	0：Disable 1：Enable	word		2	R/W
20	40033	Pickup setpoint (current value exceeding this value; alarm triggered)	0.000 - 99999.999	float	A	4	R/W
21	40034						
22	40035	Reserved					
23	40036	Dropout setpoint (current value below this value; alarm cleared)	0.000 - 99999.999	float	A	4	R/W
24	40037						
Alarm - Over Voltage L-L							
34	40053	Alarm Enable	0: Disable 1: Enable	word		2	R/W
35	40054	Pickup setpoint (line voltage value exceeding this value; alarm triggered)	0.000 - 99999.999	float	V	4	R/W
36	40055						
37	40056	Reserved					
38	40057	Dropout setpoint (line voltage value below this value; alarm cleared)	0.000 - 99999.999	float	V	4	R/W
39	40058						
3A	40059	Reserved					
Alarm - Under Voltage L-L							
3B	40060	Alarm Enable	0: Disable 1: Enable	word		2	R/W
3C	40061	Pickup setpoint (line voltage value below this	0.000 - 99999.999	float	V	4	R/W
3D	40062						

		value; alarm triggered)					
3E	40063	Reserved					
3F	40064	Dropout setpoint (line voltage value exceeding this value; alarm cleared)	0.000 - 99999.999	float	V	4	R/W
40	40065						
41	40066	Reserved					
Alarm - Over Voltage L-N							
42	40067	Alarm Enable	0: Disable 1: Enable	word		2	R/W
43	40068	Pickup setpoint (phase voltage value exceeding this value; alarm triggered)	0.000 - 99999.999	float	V	4	R/W
44	40069						
45	40070	Reserved					
46	40071	Dropout setpoint (phase voltage value below this value; alarm cleared)	0.000 - 99999.999	float	V	4	R/W
47	40072						
48	40073	Reserved					
Alarm - Under Voltage L-N							
49	40074	Alarm Enable	0: Disable 1: Enable	word		2	R/W
4A	40075	Pickup setpoint (phase voltage value below this value; alarm triggered)	0.000 - 99999.999	float	V	4	R/W
4B	40076						
4C	40077	Reserved					
4D	40078	Dropout setpoint (phase voltage value exceeding this value; alarm cleared)	0.000 - 99999.999	float	V	4	R/W
4E	40079						

Alarm - Over Active Power							
5E	40095	Alarm Enable	0: Disable 1: Enable	word		2	R/W
5F	40096	Pickup setpoint (total active power value exceeding this value; alarm triggered)	0.000 - 99999.999	float	kW	4	R/W
60	40097						
61	40098	Reserved					
62	40099	Dropout setpoint (total active power value below this value; alarm cleared)	0.000 - 99999.999	float	kW	4	R/W
63	40100						
64	40101	Reserved					
Over Reactive Power							
65	40102	Alarm Enable	0: Disable 1: Enable	word		2	R/W
66	40103	Pickup setpoint (total reactive power value exceeding this value;alarm triggered)	0.000 - 99999.999	float	kVAR	4	R/W
67	40104						
68	40105	Reserved					
69	40106	Dropout setpoint (total reactive power value below this value; alarm cleared)	0.000 - 99999.999	float	kVAR	4	R/W
6A	40107						
6B	40108	Reserved					
Alarm - Over Apparent Power							
6C	40109	Alarm Enable	0: Disable 1: Enable	word		2	R/W
6D	40110	Pickup setpoint (total apparent power value exceeding this value; alarm	0.000 - 99999.999	float	kVA	4	R/W
6E	40111						

		triggered)					
6F	40112	Reserved					
70	40113	Dropout setpoint (total apparent power value below this value; alarm cleared)	0.000 - 99999.999	float	kVA	4	R/W
71	40114						
72	40115	Reserved					
Alarm - Over Frequency							
AB	40172	Alarm Enable	0: Disable 1: Enable	word		2	R/W
AC	40173	Pickup setpoint (frequency value exceeding this value; alarm triggered)	0.0000 - 99.9999	float	Hz	4	R/W
AD	40174						
AE	40175	Reserved					
AF	40176	Dropout setpoint (frequency value below this value; alarm cleared)	0.0000 - 99.9999	float	Hz	4	R/W
B0	40177						
B1	40178	Reserved					
Alarm - Under Frequency							
B2	40179	Alarm Enable	0: Disable 1: Enable	word		2	R/W
B3	40180	Pickup setpoint (frequency value below this value; alarm triggered)	0.0000 - 99.9999	float	Hz	4	R/W
B4	40181						
B5	40182	Reserved					
B6	40183	Dropout setpoint (frequency value exceeding this value, alarm cleared)	0.0000 - 99.9999	float	Hz	4	R/W
B7	40184						

B8	40185	Reserved					
1. Meter Parameters: 0100 - 01FF							
100	40257	Phase A voltage	0.000 - 99999.999	float	V	4	R
101	40258						
102	40259	Phase B voltage	0.000 - 99999.999	float	V	4	R
103	40260						
104	40261	Phase C voltage	0.000 - 99999.999	float	V	4	R
105	40262						
106	40263	Average phase voltage	0.000 - 99999.999	float	V	4	R
107	40264						
108	40265	A-B line voltage	0.000 - 99999.999	float	V	4	R
109	40266						
10A	40267	B-C line voltage	0.000 - 99999.999	float	V	4	R
10B	40268						
10C	40269	C-A line voltage	0.000 - 99999.999	float	V	4	R
10D	40270						
10E	40271	Average line voltage	0.000 - 99999.999	float	V	4	R
10F	40272						
110	40273	Phase A voltage unbalance	0.00 - 99.99	float	%	4	R
111	40274						
112	40275	Phase B voltage unbalance	0.00 - 99.99	float	%	4	R
113	40276						
114	40277	Phase C voltage unbalance	0.00 - 99.99	float	%	4	R
115	40278						

116	40279	Phase voltage unbalance	0.00 - 99.99	float	%	4	R
117	40280						
118	40281	A-B line voltage unbalance	0.00 - 99.99	float	%	4	R
119	40282						
11A	40283	B-C line voltage unbalance	0.00 - 99.99	float	%	4	R
11B	40284						
11C	40285	C-A line voltage unbalance	0.00 - 99.99	float	%	4	R
11D	40286						
11E	40287	Line voltage unbalance	0.00 - 99.99	float	%	4	R
11F	40288						
120	40289	Phase A current	0.000 - 99999.999	float	A	4	R
121	40290						
122	40291	Phase B current	0.000 - 99999.999	float	A	4	R
123	40292						
124	40293	Phase C current	0.000 - 99999.999	float	A	4	R
125	40294						
126	40295	Three-phase average current	0.000 - 99999.999	float	A	4	R
127	40296						
128	40297	Neutral line current	0.000 - 99999.999	float	A	4	R
129	40298						
12A	40299	Phase A current unbalance	0.00 - 99.99	float	%	4	R
12B	40300						
12C	40301	Phase B current unbalance	0.00 - 99.99	float	%	4	R
12D	40302						

12E	40303	Phase C current unbalance	0.00 - 99.99	float	%	4	R
12F	40304						
130	40305	Current unbalance	0.00 - 99.99	float	%	4	R
131	40306						
132	40307	Total power factor	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
133	40308						
134	40309	Power factor of phase A	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
135	40310						
136	40311	Power factor of phase B	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
137	40312						
138	40313	Power factor of phase C	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
139	40314						
13A	40315	Total displacement power factor	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
13B	40316						
13C	40317	Total displacement power factor of phase A	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
13D	40318						
13E	40319	Total displacement power factor of phase B	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
13F	40320						
140	40321	Total displacement power factor of phase C	-1.00000 - 1.00000 (positive: lag; negative: lead)	float		4	R
141	40322						
142	40323	Frequency	0.0000 - 99.9999	float	Hz	4	R
143	40324						
144	40325	Total instantaneous active power	0.000 - 99999.999	float	kW	4	R
145	40326						

146	40327	Instantaneous active power of phase A	0.000 - 99999.999	float	kW	4	R
147	40328						
148	40329	Instantaneous active power of phase B	0.000 - 99999.999	float	kW	4	R
149	40330						
14A	40331	Instantaneous active power of phase C	0.000 - 99999.999	float	kW	4	R
14B	40332						
14C	40333	Total instantaneous reactive power	0.000 - 99999.999	float	kVAR	4	R
14D	40334						
14E	40335	Instantaneous reactive power of phase A	0.000 - 99999.999	float	kVAR	4	R
14F	40336						
150	40337	Instantaneous reactive power of phase B	0.000 - 99999.999	float	kVAR	4	R
151	40338						
152	40339	Instantaneous reactive power of phase C	0.000 - 99999.999	float	kVAR	4	R
153	40340						
154	40341	Instantaneous apparent power	0.000 - 99999.999	float	kVA	4	R
155	40342						
156	40343	Instantaneous apparent power of phase A	0.000 - 99999.999	float	kVA	4	R
157	40344						
158	40345	Instantaneous apparent power of phase B	0.000 - 99999.999	float	kVA	4	R
159	40346						
15A	40347	Instantaneous apparent power of phase C	0.000 - 99999.999	float	kVA	4	R
15B	40348						
15C	40349	Active energy of three-phase delivered	Positive integer: 0x00000000 - 0xFFFFFFFF	uint	Wh	4	R
15D	40350						

15E	40351	Active energy of three-phase received	Positive integer: 0x00000000 - 0xFFFFFFFF	uint	Wh	4	R
15F	40352						
160	40353	Reactive energy of three-phase delivered	Positive integer: 0x00000000 - 0xFFFFFFFF	uint	VARh	4	R
161	40354						
162	40355	Reactive energy of three-phase received	Positive integer: 0x00000000 - 0xFFFFFFFF	uint	VARh	4	R
163	40356						
164	40357	Apparent energy of three-phase delivered	Positive integer: 0x00000000 - 0xFFFFFFFF	uint	VAh	4	R
165	40358						
166	40359	Apparent energy of three-phase received	Positive integer: 0x00000000 - 0xFFFFFFFF	uint	VAh	4	R
167	40360						
174	40373	Total harmonic distortion for phase A current	0.000 - 999.999	float	%	4	R
175	40374						
176	40375	Total harmonic distortion for phase B current	0.000 - 999.999	float	%	4	R
177	40376						
178	40377	Total harmonic distortion for phase C current	0.000 - 999.999	float	%	4	R
179	40378						
17A	40379	Total harmonic distortion for neutral line current	0.000 - 999.999	float	%	4	R
17B	40380						
17C	40381	Total harmonic distortion for phase A voltage	0.000 - 999.999	float	%	4	R
17D	40382						
17E	40383	Total harmonic distortion for phase B voltage	0.000 - 999.999	float	%	4	R
17F	40384						
180	40385	Total harmonic distortion for phase C voltage	0.000 - 999.999	float	%	4	R
181	40386						

182	40387	Total harmonic distortion for phase A-B voltage	0.000 - 999.999	float	%	4	R
183	40388						
184	40389	Total harmonic distortion for phase B-C voltage	0.000 - 999.999	float	%	4	R
185	40390						
186	40391	Total harmonic distortion for phase C-A voltage	0.000 - 999.999	float	%	4	R
187	40392						
188	40393	Total harmonic distortion for current	0.000 - 999.999	float	%	4	R
189	40394						
18A	40395	Total harmonic distortion for voltage	0.000 - 999.999	float	%	4	R
18B	40396						
2. Maximum: 0200 - 02FF							
200	40513	Maximum A-B line voltage	0.000 - 99999.999	float	V	4	R
201	40514						
202	40515	Date of maximum A-B line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
203	40516		Date: 1-31	word	Date	2	R
204	40517	Time of maximum A-B line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
205	40518		Second: 00-59	word	Second	2	R
206	40519	Maximum B-C line voltage	0.000 - 99999.999	float	V	4	R
207	40520						
208	40521	Date of maximum B-C line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
209	40522		Date: 1-31	word	Date	2	R

20A	40523	Time of maximum B-C line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
20B	40524		Second: 00-59	word	Second	2	R
20C	40525	Maximum C-A line voltage	0.000 - 99999.999	float	V	4	R
20D	40526						
20E	40527	Date of maximum C-A line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
20F	40528		Date: 1-31	word	Date	2	R
210	40529	Time of maximum C-A line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
211	40530		Second: 00-59	word	Second	2	R
212	40531	Maximum phase A voltage	0.000 - 99999.999	float	V	4	R
213	40532						
214	40533	Date of maximum phase A voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
215	40534		Date: 1-31	word	Date	2	R
216	40535	Time of maximum phase A voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
217	40536		Second: 00-59	word	Second	2	R
218	40537	Maximum phase B voltage	0.000 - 99999.999	float	V	4	R
219	40538						
21A	40539	Date of maximum phase B voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
21B	40540		Date: 1-31	word	Date	2	R
21C	40541	Time of maximum phase B	Hour: 00-23	byte	Hour,	2	R

		voltage	Minute: 00-59		Minute		
21D	40542		Second: 00-59	word	Second	2	R
21E	40543	Maximum phase C voltage	0.000 - 99999.999	float	V	4	R
21F	40544						
220	40545	Date of maximum phase C voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
221	40546		Date: 1-31	word	Date	2	R
222	40547	Time of maximum phase C voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
223	40548		Second: 00-59	word	Second	2	R
224	40549	Maximum phase A current	0.000 - 99999.999	float	A	4	R
225	40550						
226	40551	Date of maximum phase A current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
227	40552		Date: 1-31	word	Date	2	R
228	40553	Time of maximum phase A current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
229	40554		Second: 00-59	word	Second	2	R
22A	40555	Maximum phase B current	0.000 - 99999.999	float	A	4	R
22B	40556						
22C	40557	Date of maximum phase B current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
22D	40558		Date: 1-31	word	Date	2	R
22E	40559	Time of maximum phase B current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R

22F	40560		Second: 00-59	word	Second	2	R
230	40561	Maximum phase C current	0.000 - 99999.999	float	A	4	R
231	40562						
232	40563	Date of maximum phase C current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
233	40564		Date: 1-31	word	Date	2	R
234	40565	Time of maximum phase C current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
235	40566		Second: 00-59	word	Second	2	R
236	40567	Maximum neutral line current	0.000 - 99999.999	float	A	4	R
237	40568						
238	40569	Date of maximum neutral line current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
239	40570		Date: 1-31	word	Date	2	R
23A	40571	Time of maximum neutral line current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
23B	40572		Second: 00-59	word	Second	2	R
23C	40573	Maximum frequency value	0.0000 - 99.9999	float	Hz	4	R
23D	40574						
23E	40575	Date of maximum frequency value	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
23F	40576		Date: 1-31	word	Date	2	R
240	40577	Time of maximum frequency value	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
241	40578		Second: 00-59	word	Second	2	R

242	40579	Maximum total power factor	0.00000 - 1.00000	float		4	R
243	40580						
244	40581	Date of maximum total power factor	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
245	40582		Date: 1-31	word	Date	2	R
246	40583	Time of maximum total power factor	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
247	40584		Second: 00-59	word	Second	2	R
248	40585	Maximum total active power	0.000 - 99999.999	float	kW	4	R
249	40586						
24A	40587	Date of maximum total active power	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
24B	40588		Date: 1-31	word	Date	2	R
24C	40589	Time of maximum total active power	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
24D	40590		Second: 00-59	word	Second	2	R
24E	40591	Maximum total reactive power	0.000 - 99999.999	float	kVAR	4	R
24F	40592						
250	40593	Date of maximum total reactive power	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
251	40594		Date: 1-31	word	Date	2	R
252	40595	Time of maximum total reactive power	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
253	40596		Second: 00-59	word	Second	2	R
254	40597	Maximum total apparent	0.000 - 99999.999	float	kVA	4	R

255	40598	power					
256	40599	Date of maximum total apparent power	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
257	40600		Date: 1-31	word	Date	2	R
258	40601	Time of maximum total apparent power	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
259	40602		Second: 00-59	word	Second	2	R
3. Minimum: 0300 - 03FF							
300	40769	Minimum A-B line voltage	0.000 - 99999.999	float	V	4	R
301	40770						
302	40771	Date of minimum A-B line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
303	40772		Date: 1-31	word	Date	2	R
304	40773	Time of minimum A-B line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
305	40774		Second: 00-59	word	Second	2	R
306	40775	Minimum B-C line voltage	0.000 - 99999.999	float	V	4	R
307	40776						
308	40777	Date of minimum B-C line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
309	40778		Date: 1-31	word	Date	2	R
30A	40779	Time of minimum B-C line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
30B	40780		Second: 00-59	word	Second	2	R
30C	40781	Minimum C-A line voltage	0.000 - 99999.999	float	V	4	R

30D	40782						
30E	40783	Date of minimum C-A line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
30F	40784		Date: 1-31	word	Date	2	R
310	40785	Time of minimum C-A line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
311	40786		Second: 00-59	word	Second	2	R
312	40787	Minimum phase A voltage	0.000 - 99999.999	float	V	4	R
313	40788						
314	40789	Date of minimum phase A voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
315	40790		Date: 1-31	word	Date	2	R
316	40791	Time of minimum phase A voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
317	40792		Second: 00-59	word	Second	2	R
318	40793	Minimum phase B voltage	0.000 - 99999.999	float	V	4	R
319	40794						
31A	40795	Date of minimum phase B voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
31B	40796		Date: 1-31	word	Date	2	R
31C	40797	Time of minimum phase B voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
31D	40798		Second: 00-59	word	Second	2	R
31E	40799	Minimum phase C voltage	0.000 - 99999.999	float	V	4	R
31F	40800						

320	40801	Date of minimum phase C voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
321	40802		Date: 1-31	word	Date	2	R
322	40803	Time of minimum phase C voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
323	40804		Second: 00-59	word	Second	2	R
324	40805	Minimum phase A current	0.000 - 99999.999	float	A	4	R
325	40806						
326	40807	Date of minimum phase A current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
327	40808		Date: 1-31	word	Date	2	R
328	40809	Time of minimum phase A current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
329	40810		Second: 00-59	word	Second	2	R
32A	40811	Minimum phase B current	0.000 - 99999.999	float	A	4	R
32B	40812						
32C	40813	Date of minimum phase B current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
32D	40814		Date: 1-31	word	Date	2	R
32E	40815	Time of minimum phase B current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
32F	40816		Second: 00-59	word	Second	2	R
330	40817	Minimum phase C current	0.000 - 99999.999	float	A	4	R
331	40818						
332	40819	Date of minimum phase C	Year: 00-99	byte	Year,	2	R

		current	Month: 1-12		Month		
333	40820		Date: 1-31	word	Date	2	R
334	40821	Time of minimum phase C current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
335	40822		Second: 00-59	word	Second	2	R
336	40823	Minimum neutral line current	0.000 - 99999.999	float	A	4	R
337	40824						
338	40825	Date of minimum neutral line current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
339	40826		Date: 1-31	word	Date	2	R
33A	40827	Time of minimum neutral line current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
33B	40828		Second: 00-59	word	Second	2	R
33C	40829	Minimum frequency value	0.0000 - 99.9999	float	Hz	4	R
33D	40830						
33E	40831	Date of minimum frequency value	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
33F	40832		Date: 1-31	word	Date	2	R
340	40833	Time of minimum frequency value	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
341	40834		Second: 00-59	word	Second	2	R
342	40835	Minimum total power factor	0.00000 - 1.00000	float		4	R
343	40836						
344	40837	Date of minimum total power factor	Year: 00-99 Month: 1-12	byte	Year, Month	2	R

345	40838		Date: 1-31	word	Date	2	R
346	40839	Time of minimum total power factor	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
347	40840		Second: 00-59	word	Second	2	R
348	40841	Minimum total active power	0.000 - 99999.999	float	kW	4	R
349	40842						
34A	40843	Date of minimum total active power	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
34B	40844		Date: 1-31	word	Date	2	R
34C	40845	Time of minimum total active power	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
34D	40846		Second: 00-59	word	Second	2	R
34E	40847	Minimum total reactive power	0.000 - 99999.999	float	kVAR	4	R
34F	40848						
350	40849	Date of minimum total reactive power	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
351	40850		Date: 1-31	word	Date	2	R
352	40851	Time of minimum total reactive power	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
353	40852		Second: 00-59	word	Second	2	R
354	40853	Minimum total apparent power	0.000 - 99999.999	float	kVA	4	R
355	40854						
356	40855	Date of minimum total apparent power	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
357	40856		Date: 1-31	word	Date	2	R

358	40857	Time of minimum total apparent power	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
359	40858		Second: 00-59	word	Second	2	R
4. Alarm：0400 - 04FF							
400	41025	Alarm status of over current	0: Cleared 1: Triggered	word		2	R
401	41026	Alarm times of over current	1-255	word	times	2	R
402	41027	Alarm date of over current	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
403	41028		Date: 1-31	word	Date	2	R
404	41029	Alarm time of over current	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
405	41030		Second: 00-59	word	Second	2	R
412	41043	Alarm status of over line voltage	0: Cleared 1: Triggered	word		2	R
413	41044	Alarm times of over line voltage	1-255	word	times	2	R
414	41045	Alarm date of over line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
415	41046		Date: 1-31	word	Date	2	R
416	41047	Alarm time of over line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
417	41048		Second: 00-59	word	Second	2	R
418	41049	Alarm status of under line voltage	0: Cleared 1: Triggered	word		2	R

419	41050	Alarm times of under line voltage	1-255	word	times	2	R
41A	41051	Alarm date of under line voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
41B	41052		Date: 1-31	word	Date	2	R
41C	41053	Alarm time of under line voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
41D	41054		Second: 00-59	word	Second	2	R
41E	41055	Alarm status of over phase voltage	0: Cleared 1: Triggered	word		2	R
41F	41056	Alarm times of over phase voltage	1-255	word	times	2	R
420	41057	Alarm date of over phase voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
421	41058		Date: 1-31	word	Date	2	R
422	41059	Alarm time of over phase voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
423	41060		Second: 00-59	word	Second	2	R
424	41061	Alarm status of under voltage	0: Cleared 1: Triggered	word		2	R
425	41062	Alarm times of under phase voltage	1-255	word	times	2	R
426	41063	Alarm date of under phase voltage	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
427	41064		Date: 1-31	word	Date	2	R

428	41065	Alarm time of under phase voltage	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
429	41066		Second: 00-59	word	Second	2	R
436	41079	Alarm status of over active energy	0: Cleared 1: Triggered	word		2	R
437	41080	Alarm times of over active energy	1-255	word	times	2	R
438	41081	Alarm date of over active energy	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
439	41082		Date: 1-31	word	Date	2	R
43A	41083	Alarm time of over active energy	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
43B	41084		Second: 00-59	word	Second	2	R
43C	41085	Alarm status of over reactive energy	0: Cleared 1: Triggered	word		2	R
43D	41086	Alarm times of over reactive energy	1-255	word	times	2	R
43E	41087	Alarm date of over reactive energy	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
43F	41088		Date: 1-31	word	Date	2	R
440	41089	Alarm time of over reactive energy	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
441	41090		Second: 00-59	word	Second	2	R
442	41091	Alarm status of over apparent power	0: Cleared 1: Triggered	word		2	R

443	41092	Alarm times of over apparent power	1, 255	word	times	2	R
444	41093	Alarm date of over apparent power	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
445	41094		Date: 1-31	word	Date	2	R
446	41095	Alarm time of over apparent power	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
447	41096		Second: 00-59	word	Second	2	R
478	41145	Alarm status of power factor (lead)	0: Cleared 1: Triggered	word		2	R
479	41146	Alarm times of power factor (lead)	1, 255	word	times	2	R
47A	41147	Alarm date of power factor (lead)	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
47B	41148		Date: 1-31	word	Date	2	R
47C	41149	Alarm time of power factor (lead)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
47D	41150		Second: 00-59	word	Second	2	R
47E	41151	Alarm status of power factor (lag)	0: Cleared 1: Triggered	word		2	R
47F	41152	Alarm times of power factor (lag)	1-255	word	times	2	R
480	41153	Alarm date of under frequency	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
481	41154		Date: 1-31	word	Date	2	R
482	41155	Alarm time of under	Hour: 00-23	byte	Hour,	2	R

		frequency	Minute: 00-59		Minute		
483	41156		Second: 00-59	word	Second	2	R
5. Advanced Settings: 0500 - 05FF							
50C	41293	Setting group 1	0x100 - 0x1E7	word		2	R/W
50D	41294	Setting group 2	0x100 - 0x1E7	word		2	R/W
⋮	⋮	⋮	0x100 - 0x1E7	word		2	R/W
515	41362	Setting group 10	0x100 - 0x1E7	word		2	R/W
552	41363	Reset energy date	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
553	41364	Reset energy date	Date: 1-31	word	Date	2	R
554	41365	Reset energy time	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
555	41366	Reset energy time	Second: 00-59	word	Second	2	R
556	41367	Data log starting date (Available for C502 only)	Year: 00-99 Month: 1-12	byte	Year, Month	2	R
557	41368		Date：1~31	word	Date	2	R
558	41369	Data log starting time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R
559	41370		Second：00~59	word	Second	2	R
55A	41371	Auto reset maximum and minimum values (Available for C502 only)	0: Disable 1: Date 2: Month 3: Year	word		2	R / W

55B	41372	Setting for data log 1 (Available for C502 only)	1: Phase voltage 2: Line voltage 3: Average current 4: Neutral current 5: Power factor 6: Displacement power factor 7: Total active power 8: Total reactive power 9: Total apparent power 10: Positive active energy 11: Reversed active energy 12: Positive reactive energy 13: Reversed reactive energy 14: Positive apparent energy 15: Reversed apparent energy 16: Total harmonic distortion of a voltage 17: Total harmonic distortion of a current	word		2	R / W
55C	41373	Setting for data log 2 (Available for C502 only)					
55D	41374	Setting for data log 3 (Available for C502 only)					
55E	41375	Setting for data log 4 (Available for C502 only)					
56E	41391	Time of Use #1 (Available for C502 only)	0: Sharp (P1) 1: Peak (P2) 2: Shoulder (P3) 3: Off–peak (P4)	word		2	R/W
56F	41392	Time of Use #1 start time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W

570	41393	Time of Use #1 stop time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W
571	41394	Time of Use #2 (Available for C502 only)	0: Sharp (P1) 1: Peak (P2) 2: Shoulder (P3) 3: Off–peak (P4)	word		2	R/W
572	41395	Time of Use #2 start time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W
573	41396	Time of Use #2 stop time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W
574	41397	Time of Use #3 (Available for C502 only)	0: Sharp (P1) 1: Peak (P2) 2: Shoulder (P3) 3: Off–peak (P4)	word		2	R/W
575	41398	Time of Use #3 start time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W
576	41399	Time of Use #3 stop time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W
577	41400	Time of Use #4 (Available for C502 only)	0: Sharp (P1) 1: Peak (P2) 2: Shoulder (P3) 3: Off–peak (P4)	word		2	R/W
578	41401	Time of Use #4 start Time (Available for C502 only)	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W
579	41402	Time of Use #4 stop time	Hour: 00-23 Minute: 00-59	byte	Hour, Minute	2	R/W

		(Available for C502 only)					
588	41417	Setting of digital input #1	0: Disable 1: Enable	word		2	R/W
589	41418	Setting of digital input #2	0: Disable 1: Enable	word		2	R/W
58A	41419	Setting of digital input #3	0: Disable 1: Enable	word		2	R/W
58B	41420	Setting of digital input #4	0: Disable 1: Enable	word		2	R/W
58C	41421	Setting of relay output #1	Alarms: 0: Disable 1: Over current 2: Over line voltage 3: Under line voltage 4: Over phase voltage 5: Under phase voltage 6: Over active energy 7: Over reactive energy	word		2	R/W

58D	41422	Setting of relay output #2	8: Over apparent power 9: Over frequency 10: Under frequency 11: Digital input #1 12: Digital input #2 13: Digital input #3 14: Digital input #4 15: Communication (when set for Relay Output #1, register 0x594 is writable) (when set for Relay Output #2, register 0x595 is writable)	word		2	R/W
590	41425	Status of digital input #1	0: Low 1: High 255: Disable	word		2	R
591	41426	Status of digital input #2	0: Low 1: High 255: Disable	word		2	R
592	41427	Status of digital input #3	0: Low 1: High 255: Disable	word		2	R
593	41428	Status of digital input #4	0: Low 1: High 255: Disable	word		2	R
594	41429	Status of relay output #1	0: Open 1: Closed Note: register 0x58C can only	word		2	R/W

			be written when the value is set to 15				
595	41430	Setting of relay output #2	0: Open 1: Closed Note: register 0x58D can only be written when the value is set to 15	word		2	R/W
6. Parameter Group: 0600 - 06FF							
600	41537	Read data from group 1				2	R
601	41538	Read data from group 2				2	R
⋮	⋮	⋮				2	R
609	41546	Read data from group 10				2	R
7. Harmonics: 0700~07FF (Available for C502 only)							
700	41793	The 1st harmonic of average voltage	0.000 ~ 999.999	Float		2	R
701	41794						
702	41795	The 2nd harmonic of average voltage	0.000 ~ 999.999	Float		2	R
703	41796						
⋮	⋮	⋮	0.000 ~ 999.999	Float		2	R
73C	41853	The 31st harmonic of average voltage	0.000 ~ 999.999	Float		2	R
73D	41854						
73E	41855	The 1st harmonic of average current	0.000 ~ 999.999	Float		2	R
73F	41856						
740	41857	The 2nd harmonic of average current	0.000 ~ 999.999	Float		2	R
741	41858						
⋮	⋮	⋮	0.000 ~ 999.999	Float		2	R
77A	41915	The 31st harmonic of average current	0.000 ~ 999.999	Float		2	R
77B	41916						

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6

Chapter 6 Error Codes

Table of Contents

6.1 Table of Error Codes

When an error occurs during operation, an error code will be sent through Modbus. You can refer to the following table of error codes to see the causes of the errors.

Error Code	Name	Description
0x01	Illegal function	Incorrect function code
0x02	Illegal data address	Incorrect data address to read or write
0x03	Illegal data value	Incorrect data format (e.g., data length)
0x04	Slave device failure	Salve cannot execute the command.

Appendix A Accessories

Table of Contents

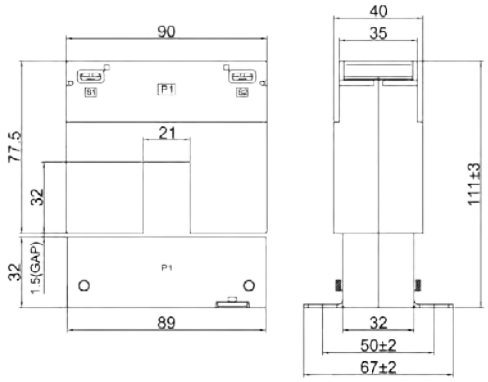
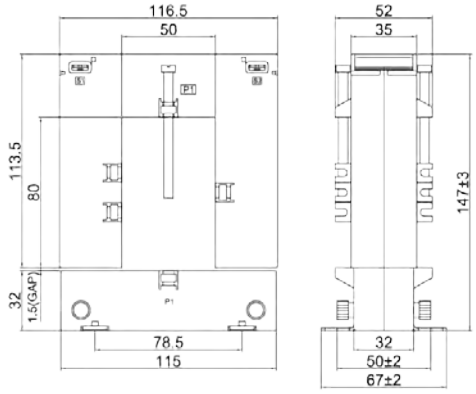
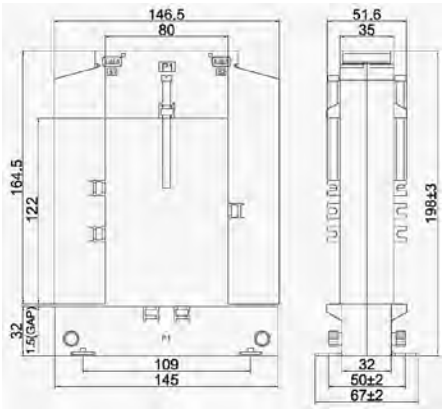
When measured current is higher than the rated specification for the device, use of an external current transformer (CT) is necessary.

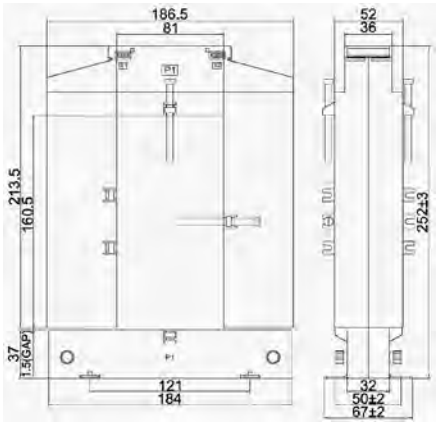
A.1 DCT1000 Series

Electromagnetic Compatibility: CE-marking, IEC61869-2.

Model Number	Measurement Accuracy	Primary Current	Secondary Current	Rated Burden (VA)	External Dimension*1 (mm)	Size of Opening*1 (mm)
DCT-S301C	1.0%	100A	5A	1.5	90*40*111	21*32
DCT-S211C	0.5%	200A	5A	1		
DCT-S221C	0.5%	300A	5A	1.5		
DCT-S231C	0.5%	400A	5A	2.5		
DCT-S241C	0.5%	500A	5A	2.5	116.5*52*147	50*80
DCT-S251C	0.5%	600A	5A	2.5		
DCT-S261C	0.5%	750A	5A	2.5		
DCT-S271C	0.5%	1000A	5A	5		
DCT-S281C	0.5%	1500A	5A	7.5	146.5*51.6*198	80*122
DCT-S291C	0.5%	2000A	5A	10	186.5*52*252	81*160.5
DCT-S2A1C	0.5%	2500A	5A	15		
DCT-S2B1C	0.5%	3000A	5A	20		

*1: see the following table for detailed information on external dimensions and sizes of opening.

Model Number	Dimension (mm)	
DCT-S301C DCT-S211C DCT-S221C DCT-S231C	External Dimension: 90*40*111 Size of Opening: 21*32 	
DCT-S241C DCT-S251C DCT-S261C DCT-S271C	External Dimension: 116.5*52*147 Size of Opening:50*80 	
DCT-S281C	External Dimension: 146.5*51.6*198 Size of Opening:80*122 	

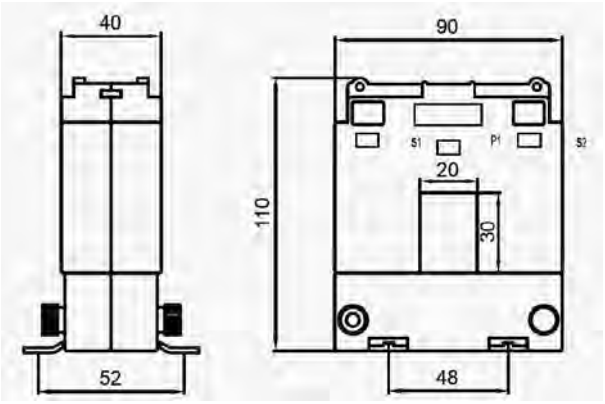
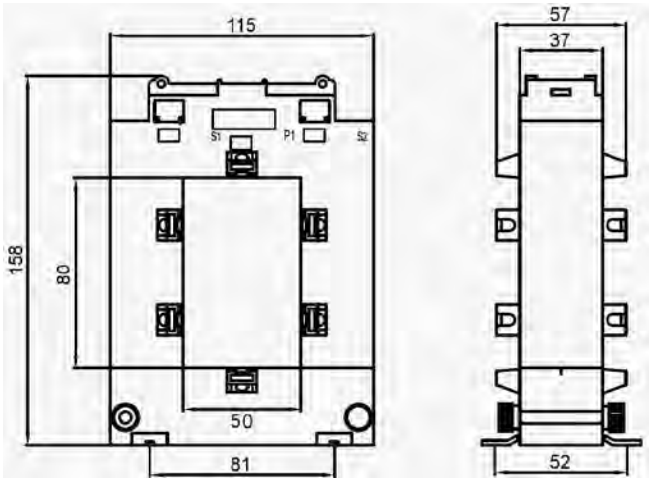
DCT-S291C DCT-S2A1C DCT-S2B1C	External Dimension: 186.5*52*252 Size of Opening:81*160.5 	

A.2 DCT2000 Series

Electromagnetic Compatibility: UL, UL2808.

Model Number	Measurement Accuracy	Primary Current	Secondary Current	Rated Burden (VA)	External Dimension*1 (mm)	Size of Opening*1 (mm)
DCT-S201B	1.0%	100A	5A	1	90*40*110	20*30
DCT-S211B	0.5%	200A	5A	1		
DCT-S221B	0.5%	300A	5A	1.5		
DCT-S231B	0.5%	400A	5A	1.5	115*57*158	50*80
DCT-S241B	0.5%	500A	5A	2.5		
DCT-S251B	0.5%	600A	5A	2.5		
DCT-S261B	0.5%	750A	5A	2.5		
DCT-S2C1B	0.5%	800A	5A	3.75		
DCT-S271B	0.5%	1000A	5A	5		

*1: see the following table for detailed information on external dimensions and sizes of opening.

<table>
<tr><th>Model Number</th><th colspan="2">Dimension (mm)</th></tr>
<tr><td>DCT-S201B
DCT-S211B
DCT-S221B</td><td>External Dimension:
90*40*110
Size of Opening:20*30
  </td><td> 
</td></tr>
<tr><td>DCT-S231B
DCT-S241B
DCT-S251B
DCT-S261B
DCT-S2C1B
DCT-S271B</td><td>External Dimension:
115*57*158
Size of Opening:50*80
  </td><td> 
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