



Automation for a Changing World

Delta Power Meter DPM Series



www.deltaww.com

 **DELTA**
Smarter. Greener. Together.

Product Introduction

Delta's Power Meter DPM Series offers precise measurement of various electrical energy values and power quality alarms and history logs functions. The DPM Series offers various communication protocols and monitoring functions.

Specifications

Model Name	DPM-C530A	DPM-C520
Product Appearance		
Accuracy Class		
Active Energy (IEC 62053-22)	Class 0.5S	Class 0.5S
Measurement Accuracy		
Current	1 A / 5 A	1 A / 5 A
Voltage	●	●
Frequency	●	●
Active, Reactive, and Apparent Power	●	●
Power Factor	●	●
Active, Reactive, and Apparent Energy	●	●
Interval Energy	●	
Demand Values		
Current	●	
Power	●	
Calculation Mode	Block	
Multiple Rate		
Interval Numbers	8 groups	
Power Quality Measurement		
Current / Voltage Unbalance	●	●
Total Voltage Harmonic Distortion	●	●
Total Current Harmonic Distortion	●	●
Individual Current / Voltage Harmonic Distortion	2~31	Total Harmonic
Data Recording		
Max. / Min. Instantaneous Values with Timestamp	●	●
Data Logs Type	17 measurement values selectable	
Data Logs Recording Duration	Up to 2 months	
Alarms History	500	
Alarms / Control		
Alarm Types	29	10
Digital Input / Digital Output 4DI / 2DO		
Communication		
RS-485 Interface	●	●
Wireless Interface (802.11 b/g/n)		
Parameter Grouping	●	●
MODBUS	MODBUS RTU/ASCII	MODBUS RTU
Certifications		
Type	CE/CMA	UL/CE/CMA

* Min. / max. instantaneous : Phase voltage, line voltage, current, frequency, total 3 - phase active power, total 3 - phase reactive power, total 3 - phase apparent power, total power factor, total voltage harmonic distortion, total current harmonic distortion

* Alarm types: Over-current, under-current, over natural current, over line voltage, under line voltage, over phase voltage, under phase voltage, over voltage unbalance, over current unbalance, over active power, over reactive power, over frequency, over total voltage harmonic distortion, over total current harmonic distortion, phase lose, restore factory setting, phase sequence reversal, over DLI, over EU

* Data log: Phase voltage, line voltage, current, natural current, power factor, displacement power factor, total active power, total reactive power, total apparent power, positive active energy, reversed active energy, positive reactive energy, reversed reactive energy

ity parameters, including power factor, harmonics, and current / voltage unbalance, as well as provides off-limit
ons that are especially suitable for sectors where power quality is critical.

DPM-C520W	DPM-C501	DPM-D520I
		
Class 0.5S	Class 0.5S	Class 0.5S
1 A / 5 A	1 A / 5 A	63 A
•	•	•
•	•	•
•	•	•
•	•	•
•	•	•
		•
		•
		•
		Block
		8 groups
•	•	•
•	•	•
•	•	•
Total Harmonic	Total Harmonic	2~31
•	•	•
		17 measurement values selectable
		Up to 2 months
		500
10	10	29
	•	
•	•	•
•		
•	•	•
MODBUS RTU/TCP	MODBUS RTU	MODBUS RTU/ASCII
UL/CE/CMA	CMA	CE/CMA

al phase voltage harmonic distortion, total current harmonic distortion, phase voltage unbalance, 3 - phase voltage unbalance, 3 - phase current unbalance

e power, over apparent power, power factor (lead), power factor (lag), over current demand, over active power demand, over reactive power demand, over apparent power demand, over frequency,

reactive energy, reversed reactive energy, positive apparent energy, reversed apparent energy, total voltage harmonic distortion, total current harmonic distortion

Features of All Models

► High Precision Power Measurement

- Highly precise measurement of bidirectional electrical energy and power parameters, meeting Class 0.5S of IEC 62053 and CNS14607 standards
- Supports power quality measurement, including total and individual harmonic distortion, voltage and current unbalance, and more

► Large LCD Screen

- Delta Multifunction Power Meters are equipped with wide LCD screens. The DPM-C530A adopts dot matrix LCD display with 198 x 160 dots. It supports clear reading and display of English (capital and lowercase letters), Traditional Chinese, Simplified Chinese and other languages



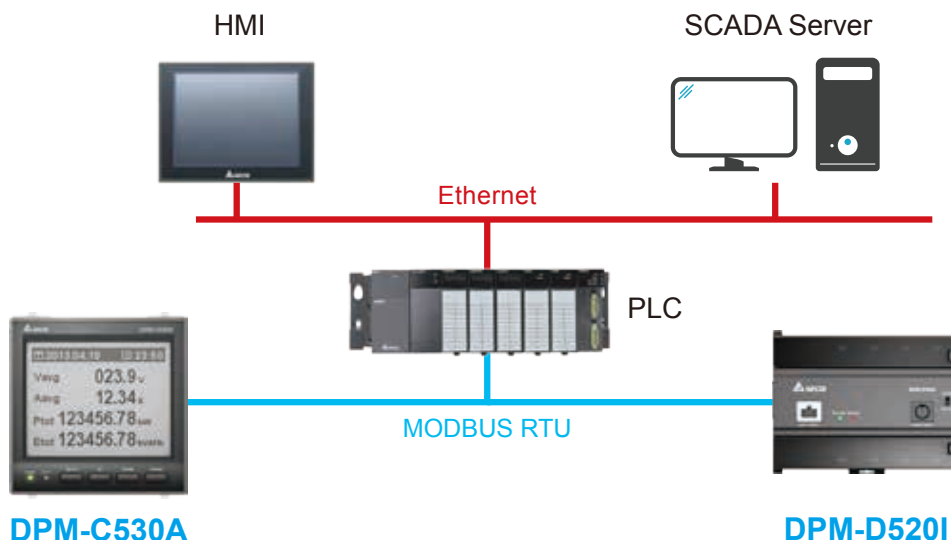
- Visibility better than segment-type LCD

Ptot 123456.78 kW
Etot 123456.78 kVAh



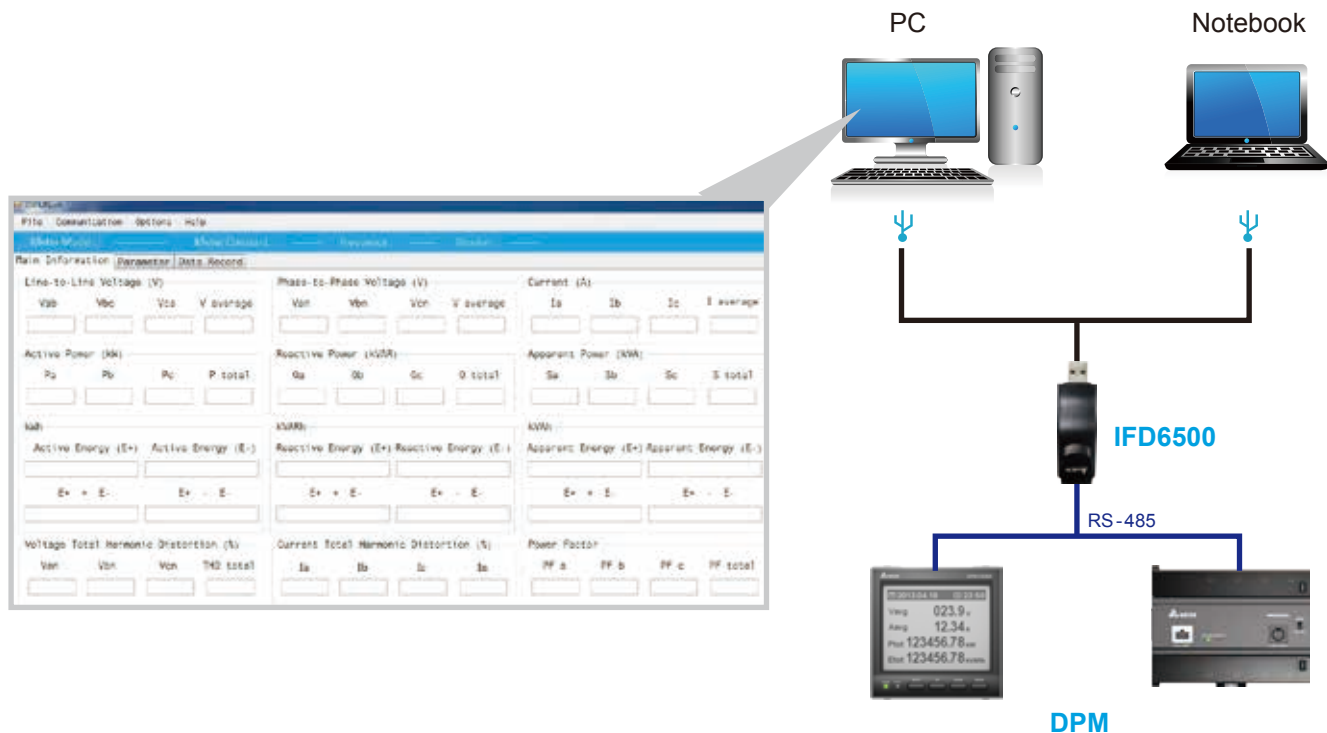
► Easy Operation and Installation

- Easy installation and disassembling with two fixing mounts, no screws or extra tools required
- Built-in RS-485 communication port supports MODBUS for transmission of all measurement values to the PLCs, PC and monitoring software



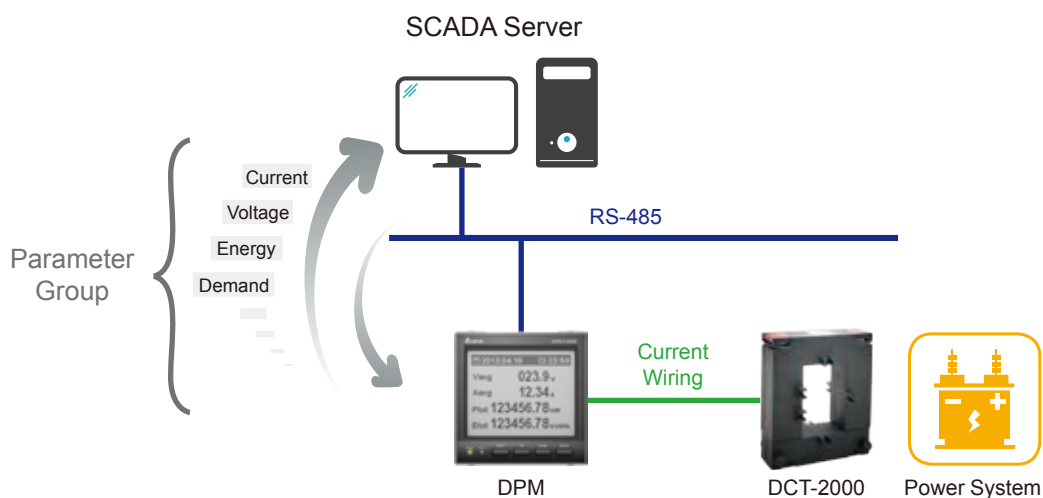
► PC-based Configuration Software

- The power meter configuration software DPMSOFT collects electricity data and set up meters via MODBUS communication, achieving easy power management and analysis



► Parameter Grouping

- All electricity data can be combined as a parameter group that allows master controllers to access. This function reduces reading time as well as enhances real-time data accessibility of the master controllers



Features of Specific Models

► Event Alarms and History Logs

(The DPM-C530A adopts data record and demand functions that make the model suitable for summation metering as well as overall circuit energy analysis. Users may select the DPM-C520 or the DPM-C501 for branch electric circuit metering.)

DPM-C530A / DPM-D520I

- Keeps max. 2 months of power and electricity energy measurement values for history analysis. Up to 17 power parameters selectable for recording different time intervals (ex. recording 17 electricity parameters every 5 minutes, for up to 2 months). 29 types of built-in event alarms for up to 500 event records
- Front LED indicators for real-time alarm:
Reads alert message and event log functions via communication protocols

DPM-C520 / DPM-C520W / DPM-C501

- 10 types of built-in event alarms
- Front LED indicators for real-time alarm:
reads alert messages and event log functions via communication protocols



► Auto Meter Reading

DPM-C530A / DPM-D520I

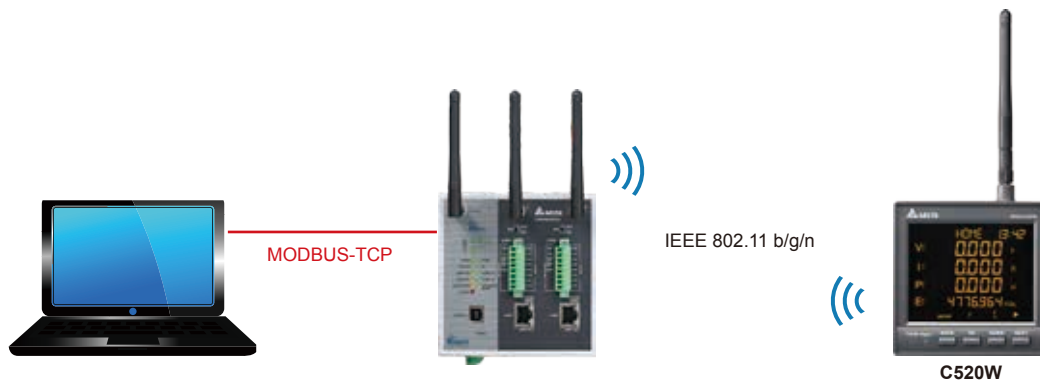
- Built-in date selected register to record active energy / reactive energy within two individual month intervals. Matched with remote communication control or energy management systems, the C530A and the D520I can analyze monthly active / reactive energy and energy usage



► Wireless Data Transmission

DPM-C520W

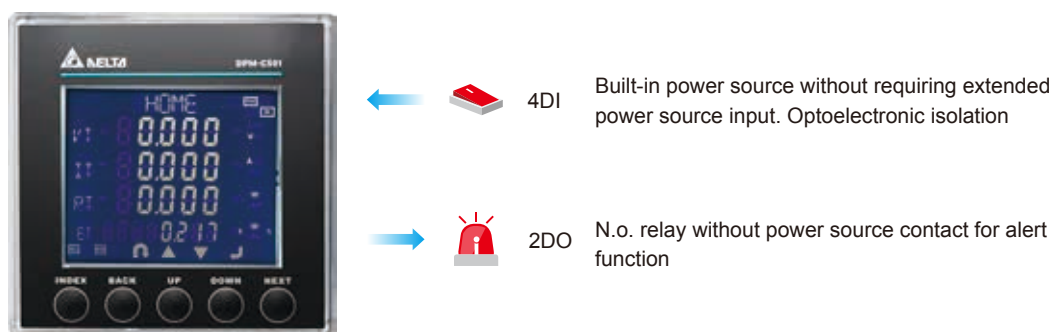
- The Wireless Multifunction Power Meter DPM-C520W adopts bidirectional wireless transmission to remotely monitor real-time electric parameters and energy consumption. This feature helps to build up a complete energy management system that replaces manual and wiring meter reading
- The DPM-C520W features:
 1. Reduced wiring cost and time
 2. High-speed data exchange and data transmission capability (speed much faster than RS-485)
 3. More secure wireless data protection
- Applications: Elevators, high-technology factories, warehouses, areas containing plenty of physical barriers, hospitals, and public offices that require data security



► DI/DO Digital Input and Output Functions

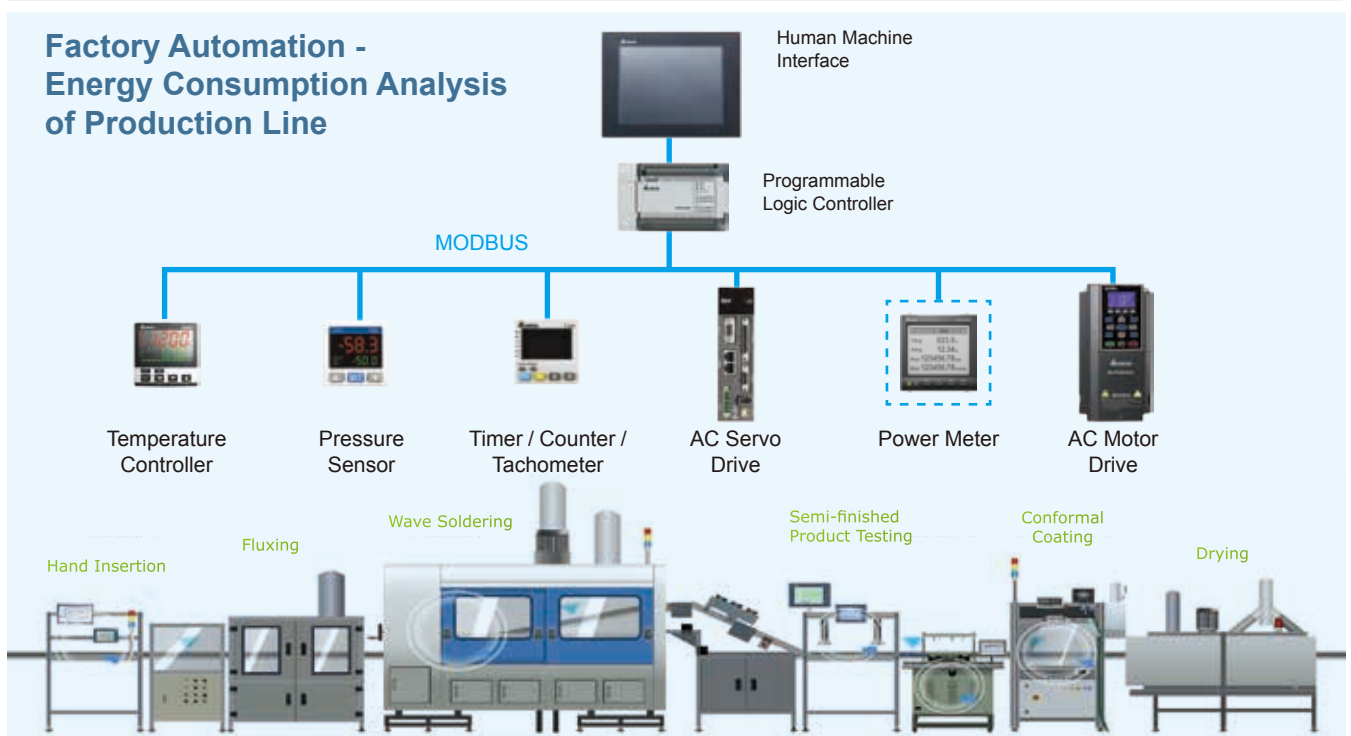
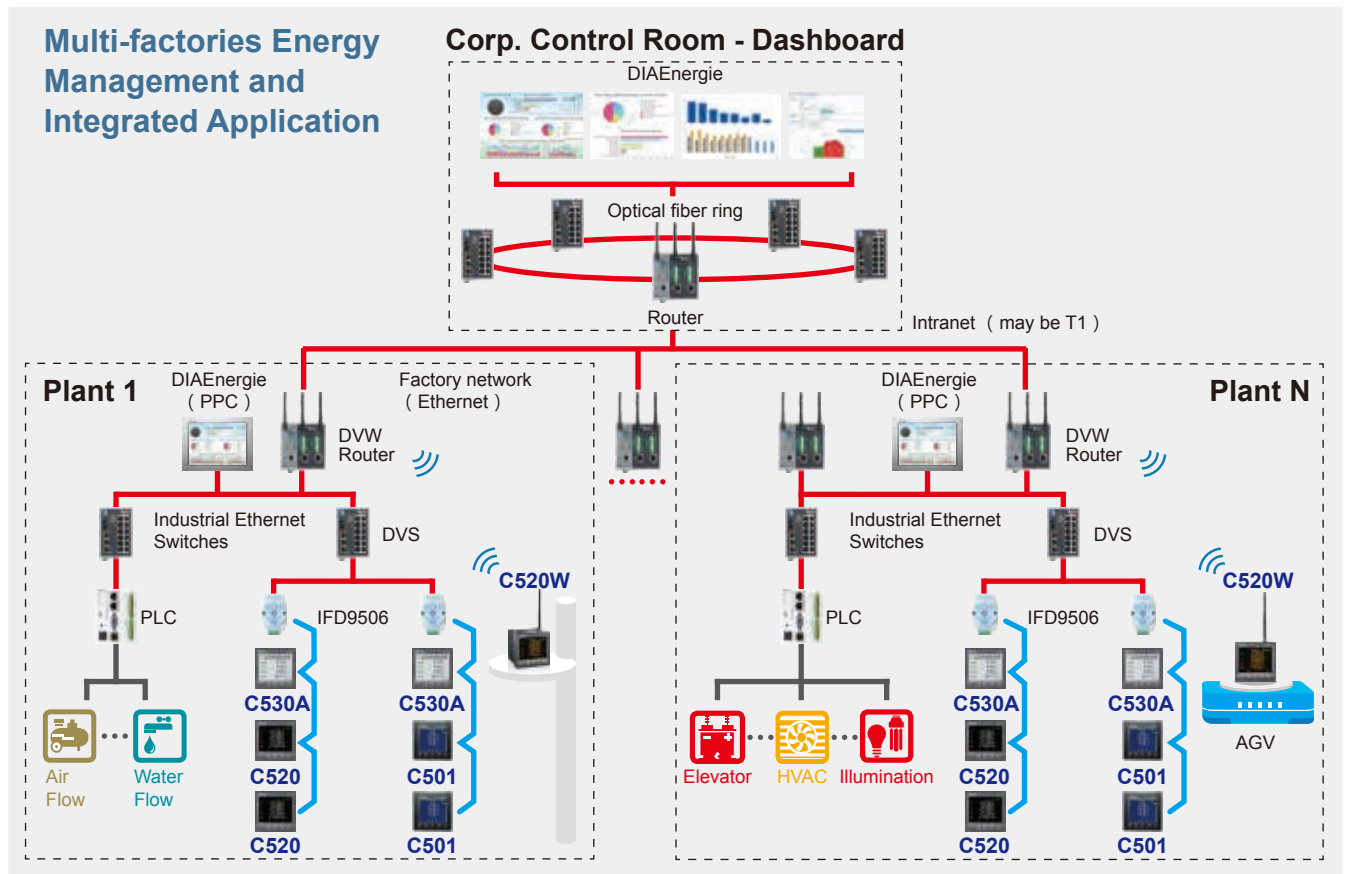
DPM-C501

- The Basic DI/DO Relay Multifunction Power Meter DPM-C501 adopts digital input / output functions that connect with control equipment or management computers to remote control and analyze energy quality. The DI/DO relay is also used as signals for displaying alerts
- Adopts built-in power source to input alert signals without requiring extended power source for saving wiring cost. The optoelectronic isolation functions ensure cable safety
- For output, the DPM-C501 offers normally open relay and access point (2A/30V_{DC} or 2A/250V_{AC}) without requiring extended power source, broadly applied in alert control output



Applications

- DPM-C530A/C520/C501 are suitable for: energy management, medium or low voltage distribution system, smart switch, railway energy management system, electric heating system, wind power system, energy storage system, electric grid management system, etc.
- DPM-C520W is suitable for: elevators, warehouses, semiconductor plants, high-ceiling plants, hospitals, and equipment management, etc.
- DPM-D520I is suitable for: industrial machines, communication base station, IIoT equipment, and areas where CT is difficult to install, etc.



cult to be installed with current lower than 63A

ent Energy Consumption
ing with the Din-rail
ction Power Meter
uded)

The diagram illustrates a network configuration for three Din-rail Multifunction Meters (DPM-D520I). At the top, an 'Industrial Ethernet Switches' unit is connected to a laptop. A red line labeled 'Ethernet' connects the switch to three HMI units. Each HMI unit is connected to a 'PLC' and a 'Din-rail Multifunction Meter (CT included) DPM-D520I' via an 'RS-485' connection. The meters are shown monitoring a CNC machine.

The diagram illustrates a Power Meter Integrated Application. At the top, a central **Energy Management System** (represented by a computer monitor and tower) is connected via **Ethernet** to three separate circuits: **Circuit #1**, **Circuit #2**, and **Circuit #3**. Each circuit is equipped with a **DPM-C530A** power meter. **Circuit #1** is connected to a **Wi-Fi AP** and **Wi-Fi** network. **Circuit #2** is connected to an **RS-485** network. **Circuit #3** is also connected to an **RS-485** network. The system is divided into three main sections: **Manufacturing Equipment** (containing **DPM-C520W** meters), **Lighting System** (containing **DPM-D520I** meters), and **Air Conditioning System** (containing **DPM-C520** meters). The **Production Line** section contains **DPM-C501** meters. The diagram also shows a **400V I 段** and **400V II 段** connection point.

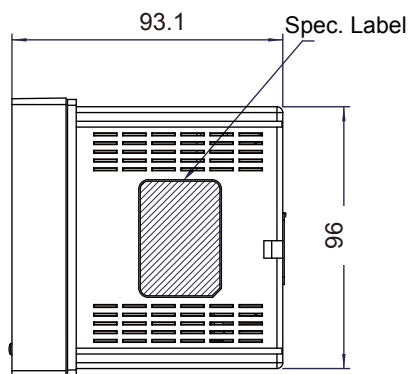
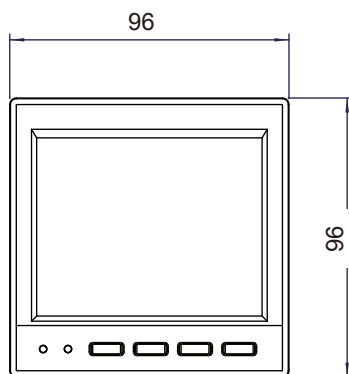
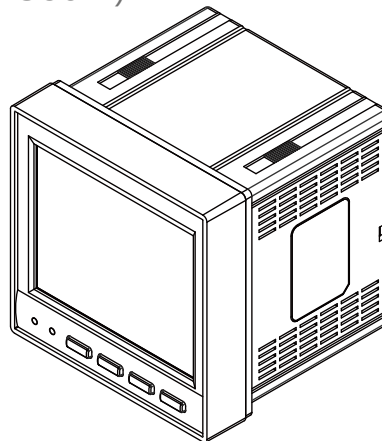
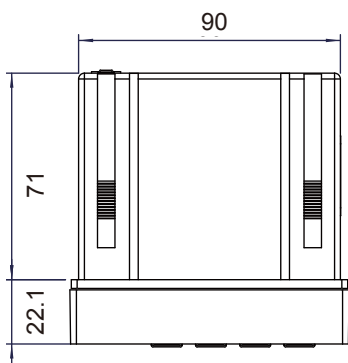
Technical Specifications

Model Name		DPM-C530A	DPM-C520
Electrical Characteristics			
Measurement Accuracy	Current	± 0.5%	± 0.5%
	Voltage	± 0.5%	± 0.5%
	Power	±0.5%	±0.5%
	Active Energy	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S
	Reactive Energy	±0.5%	±0.5%
	Power Factor	±0.5%	±0.5%
	Frequency	±0.5%	±0.5%
Input	Wiring Method	1P2W, 1P3W, 3P3W, 3P4W	
	Voltage	Wire voltage : 35~690 V _{AC} (L-L) Phase voltage : 20~400 V _{AC} (L-N)	Wire voltage : 35~690 V _{AC} (L-L) Phase voltage : 20~400 V _{AC} (L-N)
	Current	1A/5A	
	Frequency Range	45~70 Hz	45~70 Hz
	Power Supply	80~265 V _{AC} (Max. power consumption 4.6 W) 100~300 V _{DC}	80~265 V _{AC} (Max. power consumption 4.6 W) 100~300 V _{DC}
Communication			
Protocol (Interface)		Modbus RTU / ASCII (RS - 485)	Modbus RTU (RS - 485)
Mechanical Characteristics			
IP Protection	Front Display	IP54	
	Meter Body	IP20	
Dimensions (W x H x D)		96x96x95.4 mm	
Environmental Conditions			
Operating Temperature		-20℃ ~ +70℃	-20℃ ~ +60℃
Storage Temperature		-30℃ ~ +80℃	-30℃ ~ +70℃
Relative Humidity		~95% RH	~95% RH
Altitude		Below 2000 meters	Below 2000 meters
Electromagnetic Compatibility			
Electrostatic Discharge		IEC 61000-4-2	IEC 61000-4-2
Immunity to Radiated Fields		IEC 61000-4-3	IEC 61000-4-3
Immunity to Fast Transients		IEC 61000-4-4	IEC 61000-4-4
Immunity to Impulse Waves		IEC 61000-4-5	IEC 61000-4-5
Conducted Immunity		IEC 61000-4-6	IEC 61000-4-6
Immunity to Magnetic Fields		IEC 61000-4-8	IEC 61000-4-8
Immunity to Voltage Dips		IEC 61000-4-11	IEC 61000-4-11
Radiated Emissions		FCC part 15 EN 55011 Class A	FCC part 15 EN 55011 Class A
Conducted Emissions		FCC part 15 EN 55011 Class A	FCC part 15 EN 55011 Class A
Harmonics Emissions		IEC 61000-3-2	IEC 61000-3-2
Flicker Emissions		IEC 61000-3-3	IEC 61000-3-3
Safety			
America			UL/cUL
Europe		CE, IEC 61010	CE, IEC 61010
China		CMA	CMA

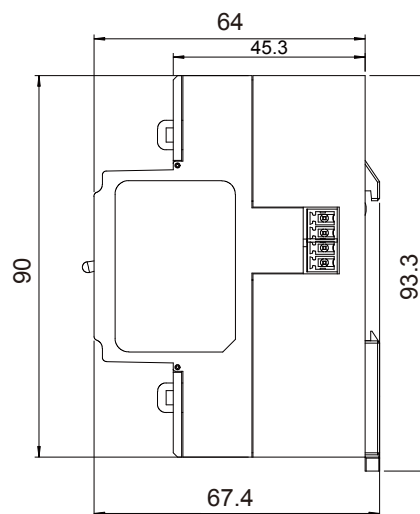
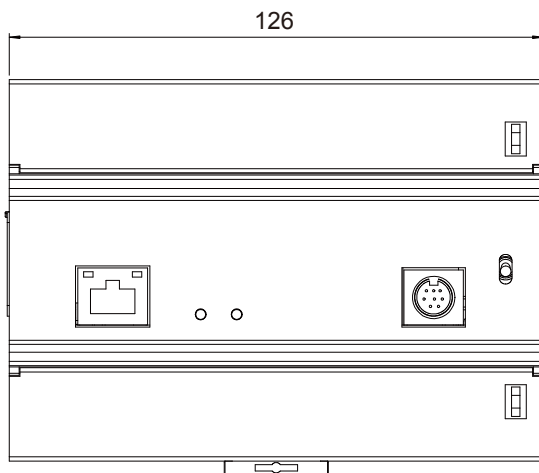
DPM-D520I	DPM-C520W	DPM-C501
± 0.5%	± 0.5%	± 0.5%
± 0.5%	± 0.5%	± 0.5%
± 0.5%	± 0.5%	± 0.5%
IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S
± 0.5%	± 0.5%	± 0.5%
± 0.5%	± 0.5%	± 0.5%
± 0.5%	± 0.5%	± 0.5%
3P3W, 3P4W	1P2W, 1P3W, 3P3W, 3P4W	
Wire voltage : 35~690 V _{AC} (L-L) Phase voltage : 20~400 V _{AC} (L-N)	Wire voltage : 35~690 V _{AC} (L-L) Phase voltage : 20~400 V _{AC} (L-N)	Wire voltage : 35~690 V _{AC} (L-L) Phase voltage : 20~400 V _{AC} (L-N)
63A	1A/5A	
45~70 Hz	45~70 Hz	45~70 Hz
80~265 V _{AC} (Max. power consumption 4.6 W) 100~300 V _{DC}	80~265 V _{AC} (Max. power consumption 4.6 W) 100~300 V _{DC}	80~265 V _{AC} (Max. power consumption 4.6 W) 100~300 V _{DC}
Modbus RTU / ASCII (RS - 485)	Modbus RTU (RS-485) / TCP (WiFi, IEEE802.11 b/g/n)	Modbus RTU (RS - 485)
-	IP52	
IP20	IP20	
126x90x67.4 mm	96 x 96 x 95.4 mm	
-20 °C ~ +60 °C	-20 °C ~ +60 °C	-20 °C ~ +50 °C
-30 °C ~ +70 °C	-30 °C ~ +70 °C	-30 °C ~ +60 °C
~95% RH	~95% RH	~95% RH
Below 2000 meters	Below 2000 meters	Below 2000 meters
IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2
IEC 61000-4-3	IEC 61000-4-3	IEC 61000-4-3
IEC 61000-4-4	IEC 61000-4-4	IEC 61000-4-4
IEC 61000-4-5	IEC 61000-4-5	IEC 61000-4-5
IEC 61000-4-6	IEC 61000-4-6	IEC 61000-4-6
IEC 61000-4-8	IEC 61000-4-8	IEC 61000-4-8
IEC 61000-4-11	IEC 61000-4-11	IEC 61000-4-11
FCC part 15 EN 55011 Class A	FCC part 15 EN 55011 Class A	FCC part 15 EN 55011 Class A
FCC part 15 EN 55011 Class A	FCC part 15 EN 55011 Class A	FCC part 15 EN 55011 Class A
IEC 61000-3-2	IEC 61000-3-2	IEC 61000-3-2
IEC 61000-3-3	IEC 61000-3-3	IEC 61000-3-3
UL/cUL	UL/cUL	UL/cUL
CE, IEC 61010	CE, IEC 61010	CE, IEC 61010
CMA	CMA	CMA

Dimensions (Units: mm)

Panel Type (DPM-C530A/C520/C520W/C501)



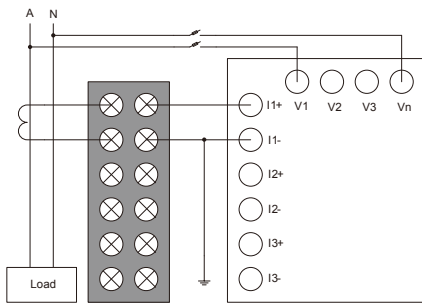
DIN Rail Type (DPM-D520I)



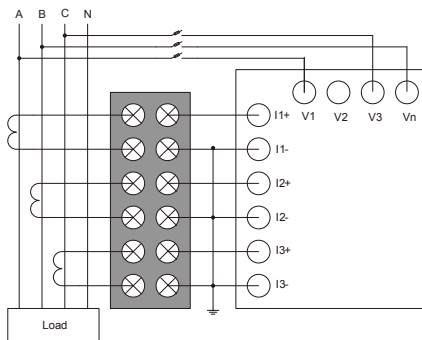
Wiring Diagrams

Panel Type

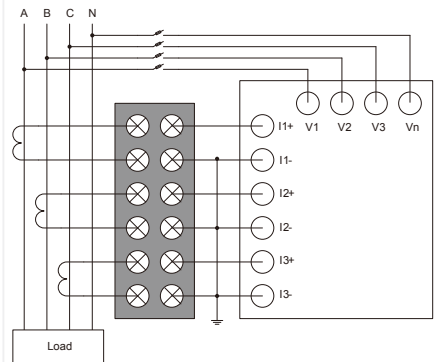
• 1-Phase 2-Wire (1CT)



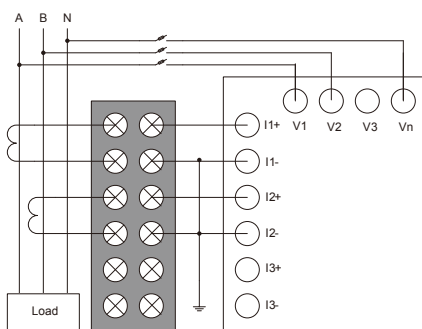
• 3-Phase 3-Wire, Δ -Connection (3CT, no PT)



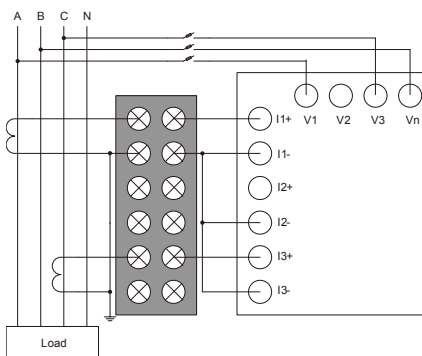
• 3-Phase 4-Wire, Y-Connection (3CT, no PT)



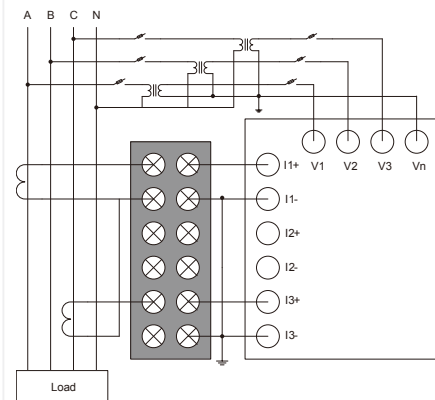
• 1-Phase 3-Wire (2CT)



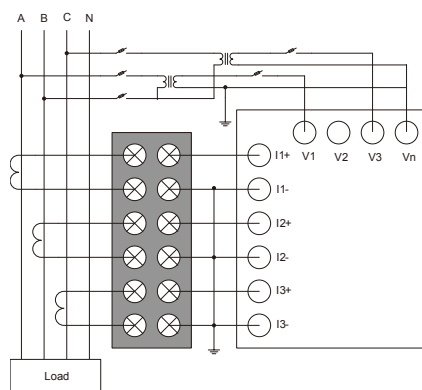
• 3-Phase 3-Wire, Δ -Connection (2CT, no PT)



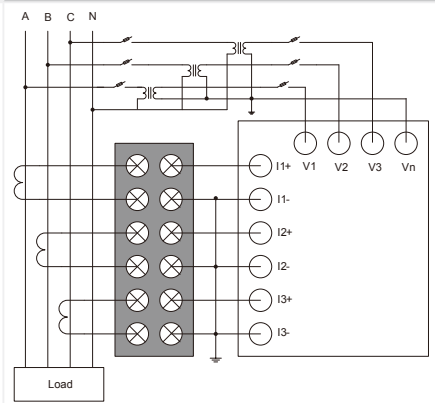
• 3-Phase 4-Wire, Y-Connection (2CT, 3 PT)



• 3-Phase 3-Wire, Δ -Connection (3CT, 2PT)

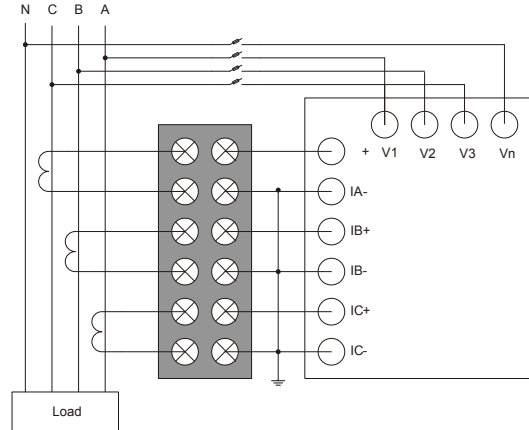


• 3-Phase 4-Wire, Y-Connection (3CT, 3 PT)

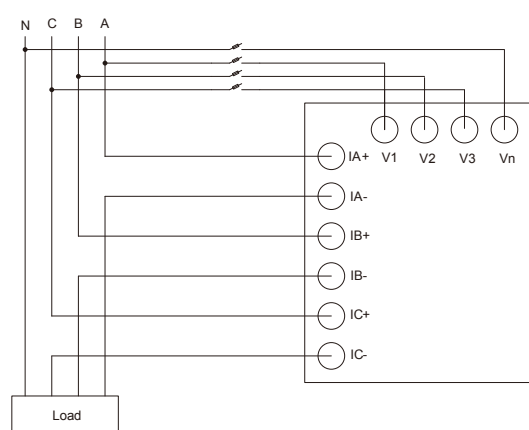


DIN Rail Type

- **3-Phase 4-Wire, CT Connection**



- **3-Phase 4-Wire, Direct Connection**

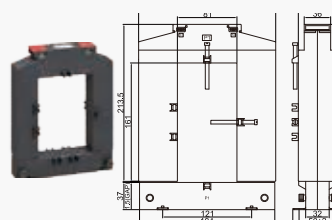
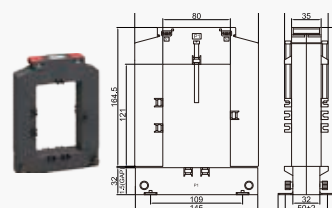
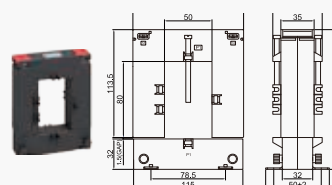
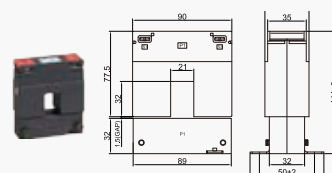


PIN	Definition
4	D+
5	D-



Optional Accessories

Model	Certifications	Primary Current	Secondary Current	Max. Load	Measurement Accuracy	Sizes (Units: mm)	
DCT - S301C	CE	100A	5A	1.5VA	1.0%	Outer Frame	115 x 89 x 51
DCT - S201B	UL		5A			Inner Frame	32 x 21 x 32
DCT - S211C	CE	200A	5A	1.0VA	0.5%	Outer Frame	115 x 89 x 51
DCT - S211B	UL		5A			Inner Frame	32 x 21 x 32
DCT - S221C	CE	300A	5A	1.5VA	0.5%	Outer Frame	115 x 89 x 51
DCT - S221B	UL		5A			Inner Frame	32 x 21 x 32
DCT - S231C	CE	400A	5A	2.5VA	0.5%	Outer Frame	115 x 89 x 51
DCT - S231B	UL		5A			Inner Frame	32 x 21 x 32
DCT - S241C	CE	500A	5A	2.5VA	0.5%	Outer Frame	145 x 116 x 51
DCT - S241B	UL		5A			Inner Frame	80 x 50 x 32
DCT - S251C	CE	600A	5A	2.5VA	0.5%	Outer Frame	145 x 116 x 51
DCT - S251B	UL		5A			Inner Frame	80 x 50 x 32
DCT - S261C	CE	750A	5A	3VA	0.5%	Outer Frame	145 x 116 x 51
DCT - S261B	UL		5A			Inner Frame	80 x 50 x 32
DCT - S2C1B	UL	800A	5A	3VA	0.5%	Outer Frame	145 x 116 x 51
DCT - S271C	CE	1000A	5A	5VA	0.5%	Outer Frame	145 x 116 x 51
DCT - S271B	UL		5A			Inner Frame	80 x 50 x 32
DCT - S281C	CE	1500A	5A	7.5VA	0.5%	Outer Frame	196 x 146 x 51
						Inner Frame	122 x 80 x 32
DCT - S291C	CE	2000A	5A	10VA	0.5%	Outer Frame	250 x 186 x 51.4
						Inner Frame	160.5 x 81 x 32
DCT - S2A1C	CE	2500A	5A	15VA	0.5%	Outer Frame	250 x 186 x 51.4
						Inner Frame	160.5 x 81 x 32
DCT - S2B1C	CE	3000A	5A	20VA	0.5%	Outer Frame	250 x 186 x 51.4
						Inner Frame	160.5 x 81 x 32





Smarter. Greener. Together.

Industrial Automation Headquarters

Delta Electronics, Inc.

Taoyuan Technology Center
18 Xinglong Road, Taoyuan District,
Taoyuan City 33068, Taiwan (R.O.C.)
TEL: 886-3-362-6301 / FAX: 886-3-371-6301

Asia

Delta Electronics (Shanghai) Co., Ltd

No.182 Minyu Road, Pudong Shanghai,
People's Republic of China
Post code : 201209
TEL: 86-21-68723988 / FAX: 86-21-6872-3996
Customer Service: 400-820-9595

Delta Electronics (Japan), Inc.

Tokyo Office
2-1-14 Minato-ku Shibadaimon,
Tokyo 105-0012, Japan
TEL: 81-3-5733-1111 / FAX: 81-3-5733-1211

Delta Electronics (Korea), Inc.

1511, Byucksan Digital Valley 6-cha, Gasan-dong,
Geumcheon-gu, Seoul, Korea, 153-704
TEL: 82-2-515-5303 / FAX: 82-2-515-5302

Delta Electronics Int'l (S) Pte Ltd.

4 Kaki Bukit Ave 1, #05-05, Singapore 417939
TEL: 65-6747-5155 / FAX: 65-6744-9228

Delta Electronics (India) Pvt. Ltd.

Plot No 43 Sector 35, HSIIDC
Gurgaon, PIN 122001, Haryana, India
TEL: 91-124-4874900 / FAX : 91-124-4874945

Delta Electronics (Thailand) Public Company Limited

909 Soi 9, Moo 4, Bangpoo Industrial
Estate(Epz) Pattana 1rd., Tambol Phraksa
Amphur Muang, Samutprakarn 10280 Thailand
TEL: 66(0)2-709-2800

Delta Energy Systems Austral Pty Ltd.

Unit 20-21, 45 Normanby rd, Notting Hill Vic 3168, Australia
TEL: 61-3-9543-3720

Americas

Delta Products Corporation (USA)

Raleigh Office
P.O. Box 12173, 5101 Davis Drive,
Research Triangle Park, NC 27709, U.S.A.
TEL: 1-919-767-3800 / FAX: 1-919-767-3969

Delta Greentech (Brasil) S.A.

Sao Paulo Office
Rua Itapeva, 26 - 3° andar Edificio Itapeva One-Bela Vista
01332-000-São Paulo-SP-Brazil
TEL: 55-11-3568-3855 / FAX: 55-11-3568-3865

Delta Electronics Int. Mexico

Mexico Office
Via Dr. Gustavo Baz 2160, La Loma
C.P. 54060, Estado de México
TEL: 55-2628-3015

EMEA

Delta Electronics (Netherlands) B.V.

Eindhoven Office
De Witbogt 20, 5652 AG Eindhoven, The Netherlands
TEL: 31 (0) 40-8003800 / FAX: 31 (0) 40-8003898
MAIL: Sales.IA.EMEA@deltaww.com
MAIL: Sales.IA.Benelux@deltaww.com

Delta Energy Systems (France) S.A

ZI du bois Chaland 2 15 rue des Pyrénées,
Lisses 91056 Evry Cedex
MAIL: Sales.IA.France@deltaww.com

Delta Energy Systems (Spain) S.L.

Ctra. De Villaverde a Vallecas, 265 1º Dcha Ed.
Hormigueras – P.I. de Vallecas 28031 Madrid
C/Llul, 321-329 (Edif. CINC) | 22@Barcelona | 08019 Barcelona
MAIL: Sales.IA.Iberia@deltaww.com

Delta Energy Systems Srl (Italy)

Via Senigallia 18/2 – 20161 Milano (MI)
Piazza Grazioli 18 – 00186 ROMA
MAIL: Sales.IA.Italy@deltaww.com

Delta Energy Systems (Germany) GmbH

Coesterweg 45, D-59494 Soest
MAIL: Sales.IA.DACH@deltaww.com

Delta Energy Systems LLC (CIS)

Vereyskaya Plaza II, office 112 Vereyskaya str.
17 121357 Moscow
MAIL: Sales.IA.RU@deltaww.com

Delta Greentech Ltd. (Turkiye)

Şerifali Mevkii Barbaros Bulvarı Söyleşi Sokak
No:19 K:1 Yukari Dudullu 34775 Ümraniye
İstanbul Sarigazi V.D 2740624765
MAIL: Sales.IA.Turkey@delta-emea.com

Delta Energy Systems (AG Dubai BR)

P.O. Box 185668, Gate 7, 3rd Floor, Hamarain Centre,
Dubai, United Arab Emirates
MAIL: Sales.IA.MEA@deltaww.com

*We reserve the right to change the information in this catalogue without prior notice.