



Automation for a Changing World

Delta Power Meter DPM Series



www.deltaww.com





DELTA
Smarter. Greener. Together.

Product Introduction




Delta's Multifunction Power Meter DPM Series precisely measures various electrical energy and power quality parameters, including power factors, harmonics, and current/voltage unbalance, as well as provides off-limit alarms and history logs functions. The DPM Series offers a variety of communication protocols and monitoring functions that are especially suitable for sectors where power quality is critical.

Specifications

Model Name	DPM-C530	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
BACnet MS/TP	●	
Certifications		
Type	UL/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 phase voltage harmonic distortion, total current harmonic distortion, phase voltage unbalance, 3 - phase voltage unbalance, 3 - phase current unbalance

* 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 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, under frequency, over total voltage harmonic distortion, over total current harmonic distortion, phase lose, restore factory setting, phase sequence reversal, over DUL, over EU

Model Name	DPM-C520W	DPM-C501L	DPM-D520I
Product Appearance			
Accuracy Class			
Active Energy (IEC 62053-22)	Class 0.5S	Class 0.5S	Class 0.5S
Measurement Accuracy			
Current	1 A / 5 A	1 A / 5 A	63 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	Total Harmonic	Total Harmonic	2~31
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	10	10	29
Digital Input / Digital Output 4DI / 2DO		●	
Communication			
RS-485 Interface	●	●	●
Wireless Interface (802.11 b/g/n)	●		
Parameter Grouping	●	●	●
MODBUS	MODBUS RTU/TCP	MODBUS RTU	MODBUS RTU/ASCII
BACnet MS/TP			
Certifications			
Type	UL/CE/CMA/FCC/ JRF/KCC/IC/NCC	CMA	CE/CMA

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

Features of All Models

► High Precision Power Measurement

- Precise measurement of bidirectional electrical energy and power parameters, Class 0.5S meeting IEC62053 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-C530 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



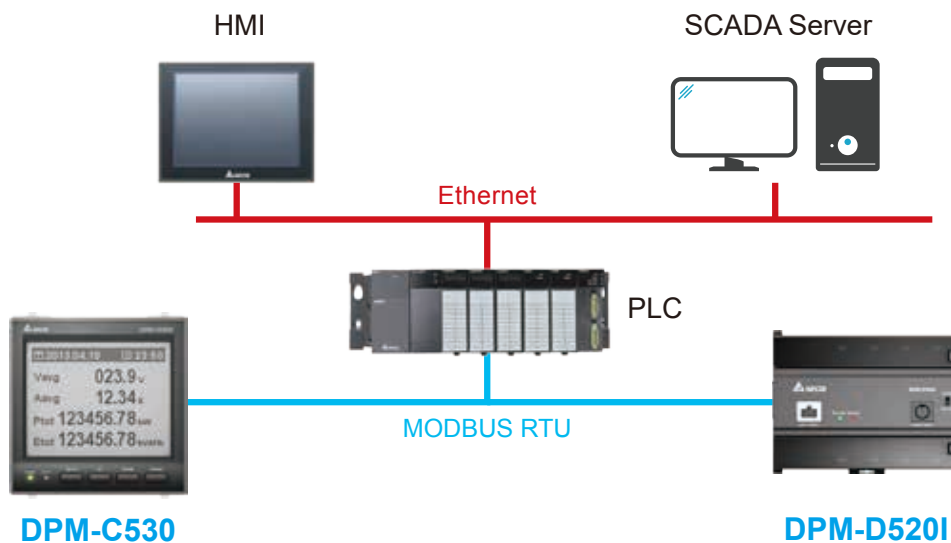
- DPM-C530: higher visibility with dot matrix LCD display than segment LCD display

Ptot 123456.78 kW
Etot 123456.78 kVAh



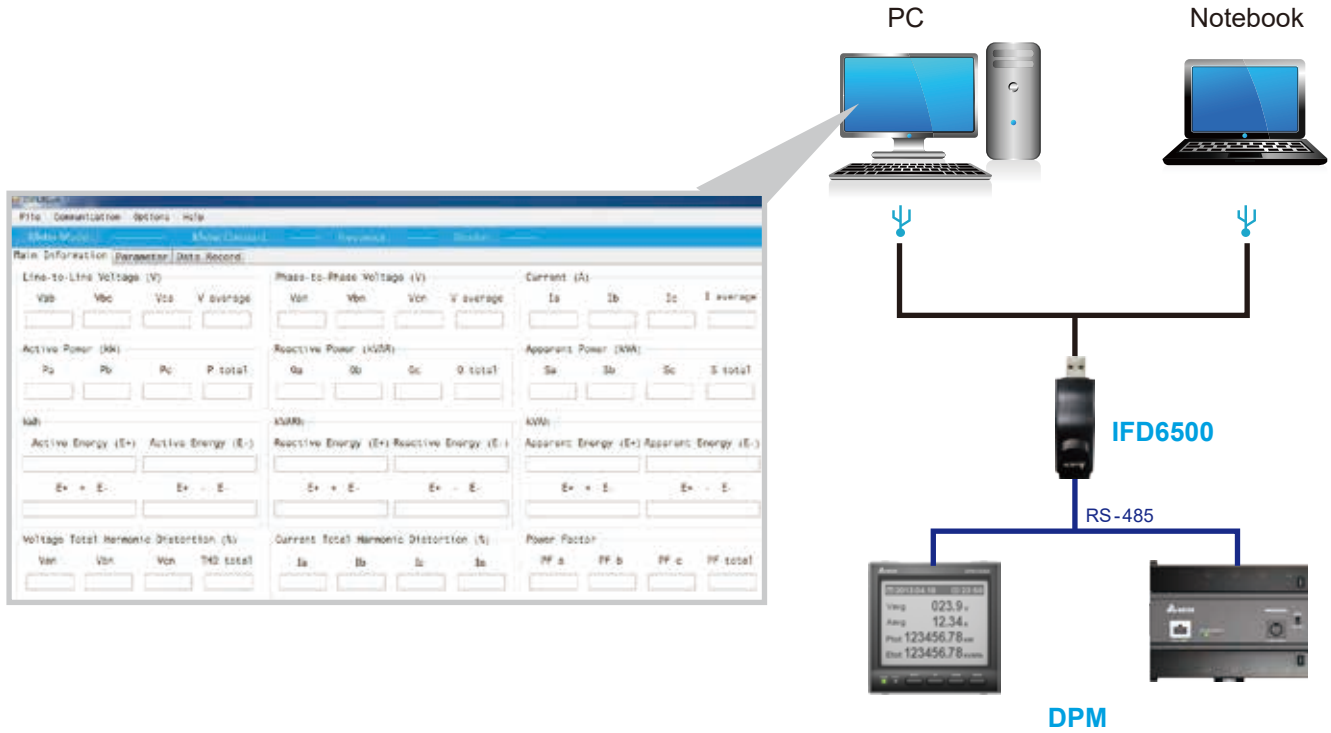
► Easy Operation and Installation

- 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



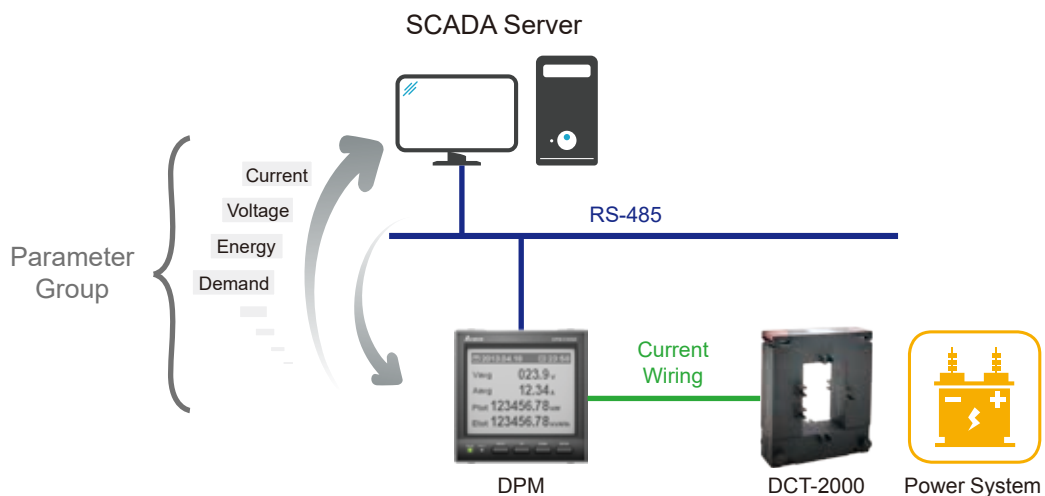
► PC-based Configuration Software

- The power meter configuration software DPMSOFT collects electricity data and sets 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-C530 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-C501L for branch electric circuit metering.

DPM-C530 / 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 (e.g. 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-C501L

- 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-C530 / DPM-D520I

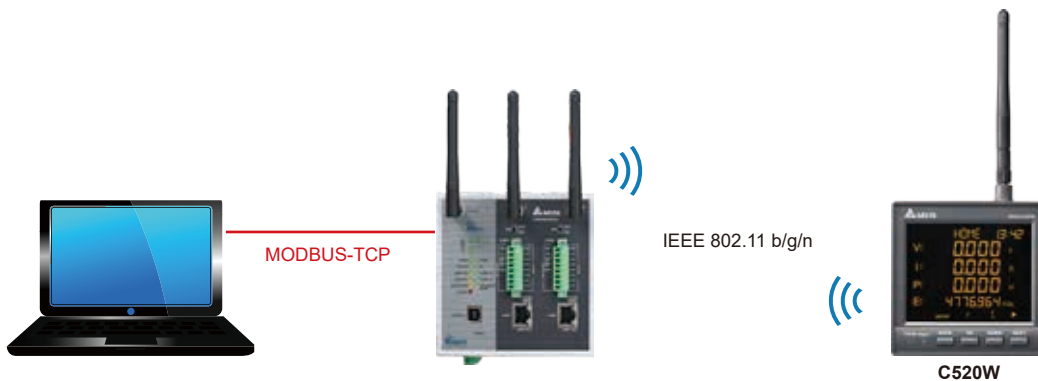
- Built-in date selected register to record active energy / reactive energy within two individual month intervals. Matched with remote communication control or energy management systems, the DPM-C530 and the D520I can analyze monthly active / reactive energy and energy usage



▶ Wireless Data Transmission

DPM-C520W

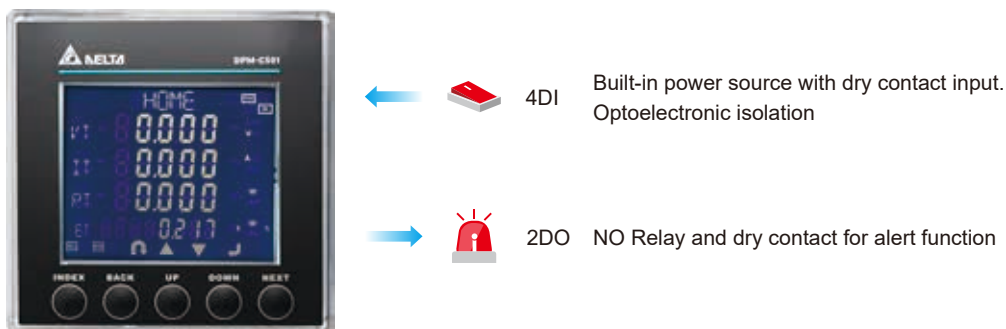
- The Wireless Multifunction Power Meter DPM-C520W adopts bidirectional wireless transmission to remotely monitor real-time electric parameters and energy consumption. This feature helps to build up a complete energy management system that replaces manual and wiring meter reading
- The DPM-C520W features:
 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

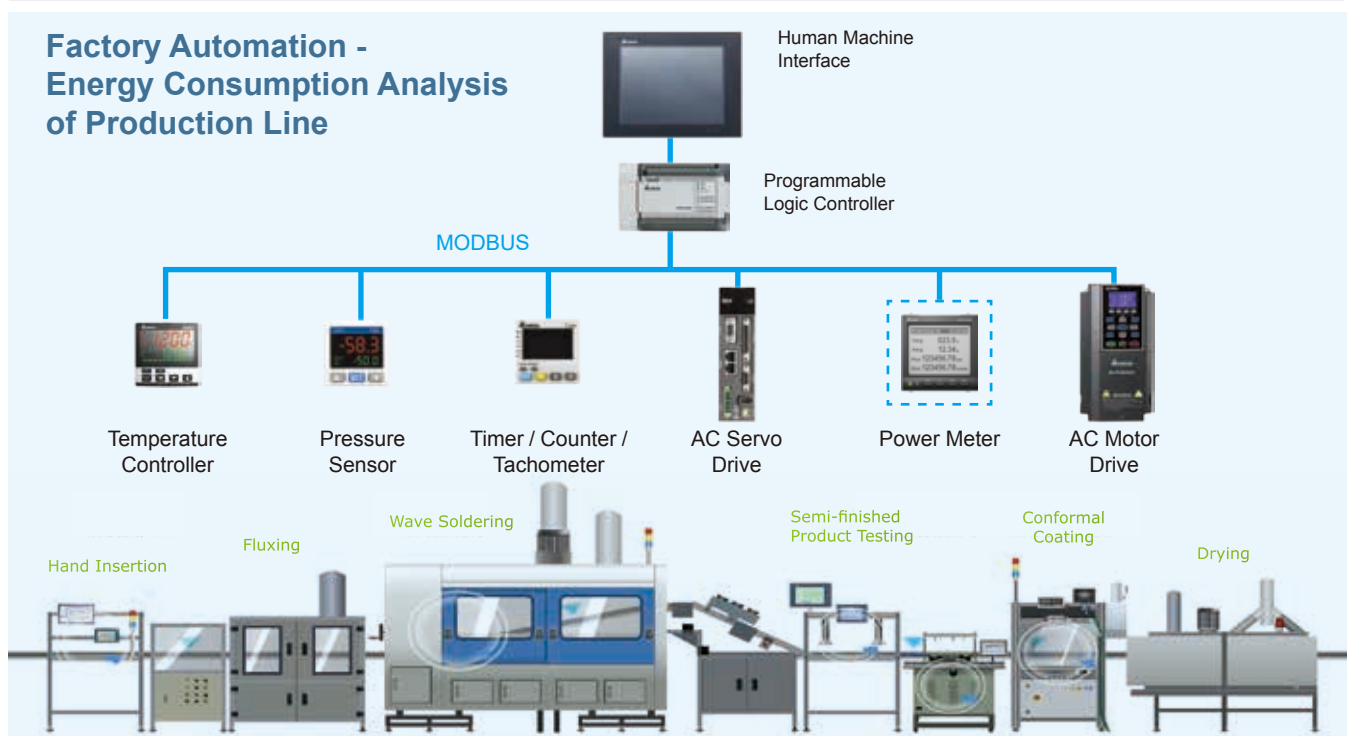
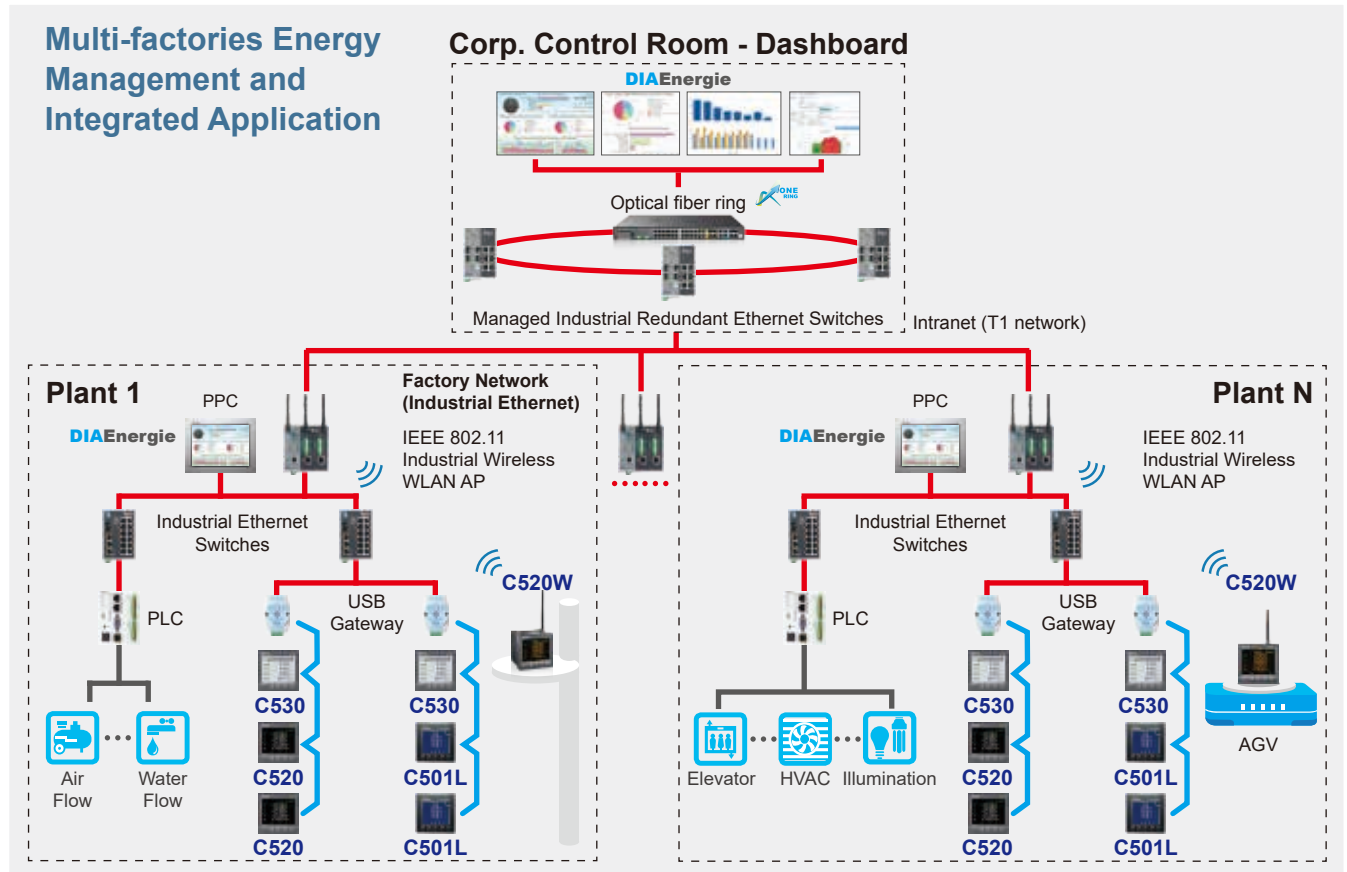
DPM-C501L

- The Basic DI/DO Relay Multifunction Power Meter DPM-C501L adopts digital input / output functions that connect with control equipment or management computers to remotely 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 with dry contact for saving wiring cost. The optoelectronic isolation functions ensure cable safety
- For output, the DPM-C501L offers normally open (NO) relay and dry contact (2A/30V_{DC} or 2A/250V_{AC}), broadly applied in alert control output



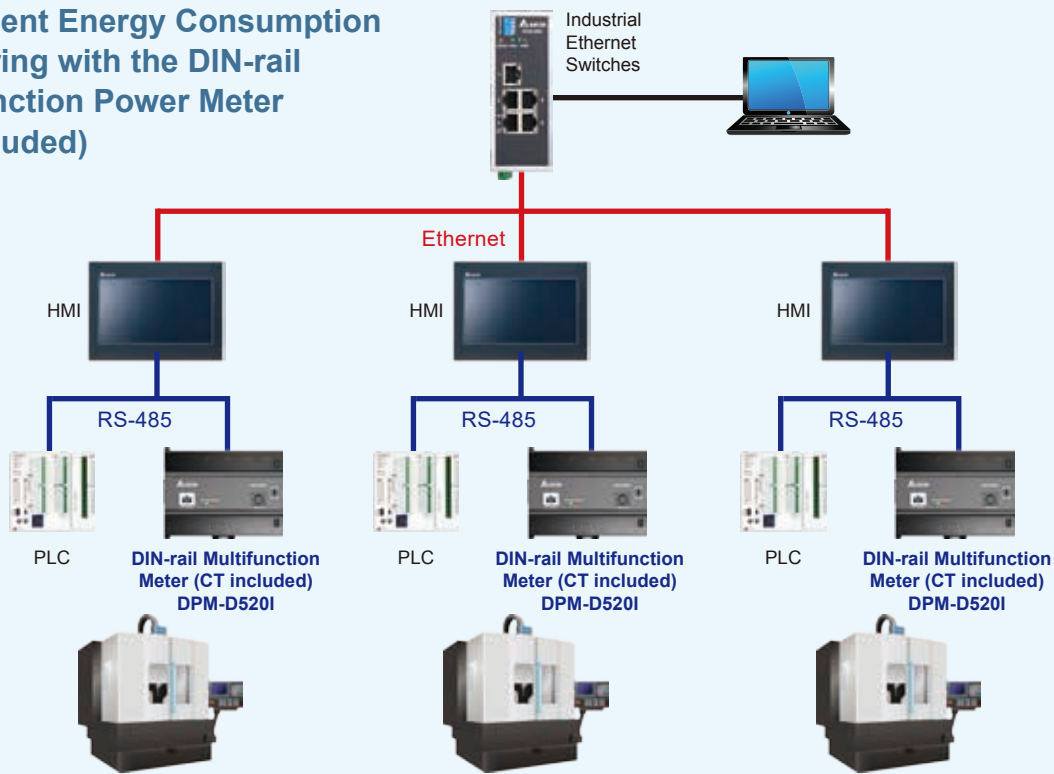
Applications

- The DPM-C530 / C520 / C501L are suitable for: energy management, medium or low voltage distribution system, smart switch cabinet, energy management system, factory automation system, building automation system, railway energy management system, electric heating system, wind power system, energy storage system, electric grid measurement, and energy quality analysis

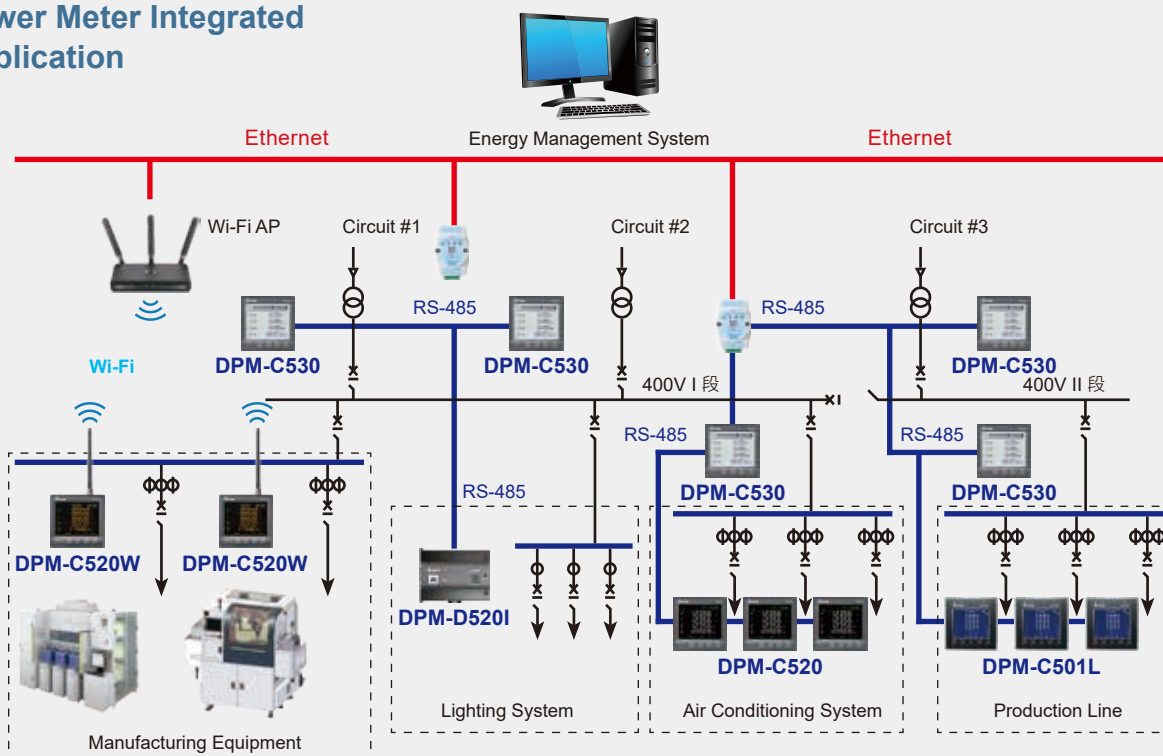


- The DPM-C520W is suitable for: elevators, warehouses, semiconductor plants, high-ceiling plants, hospitals, and equipment with mobility
- The DPM-D520I is suitable for: industrial machines, communication base station, IIoT equipment, and areas where CT is difficult to install with current lower than 63A

Equipment Energy Consumption Monitoring with the DIN-rail Multifunction Power Meter (CT included)



Power Meter Integrated Application



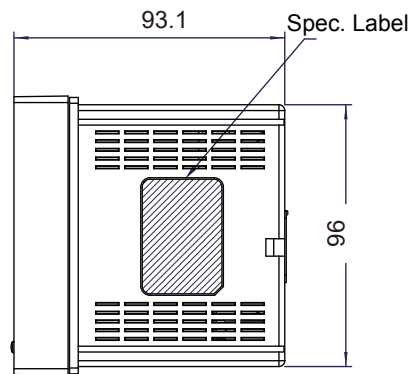
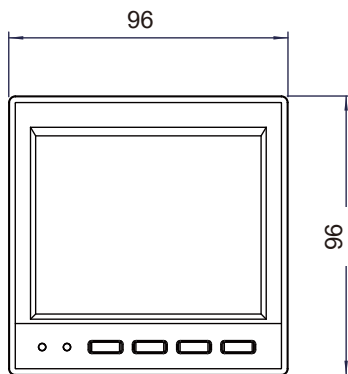
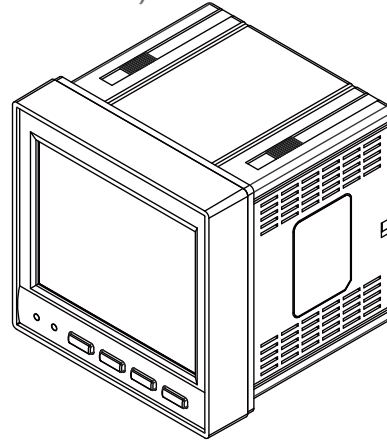
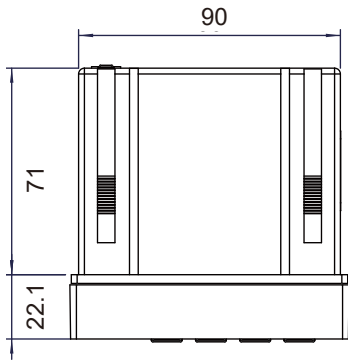
Technical Specifications

Model Name		DPM-C530	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	45~70Hz	45~70Hz
	Power Supply	80~265 V _{AC} (Max. power consumption 4.6W) 100~300 V _{DC}	80~265 V _{AC} (Max. power consumption 4.6W) 100~300 V _{DC}
Communication			
Protocol (Interface)		Modbus RTU/ASCII (RS-485) BACnet MS/TP (RS-485)	Modbus RTU (RS - 485)
Mechanical Characteristics			
IP Protection	Front Display	IP54	
	Meter Body	IP20	
Dimensions (W x H x D)		96 x 96 x 95.4 mm	
Environmental Conditions			
Operating Temperature		-20 °C ~ +70 °C	-20 °C ~ +60 °C
Storage Temperature		-30 °C ~ +80 °C	-30 °C ~ +70 °C
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	UL/cUL
Europe		CE, IEC 61010	CE, IEC 61010
Asia		CMA	CMA

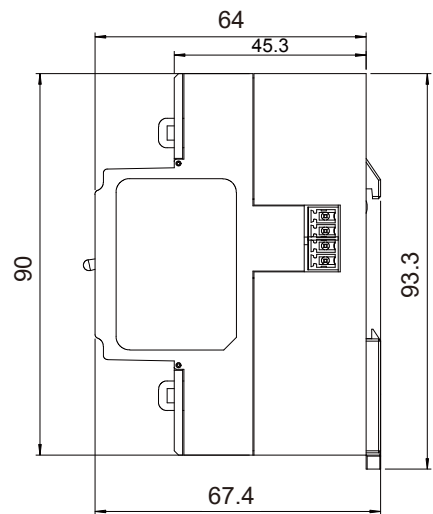
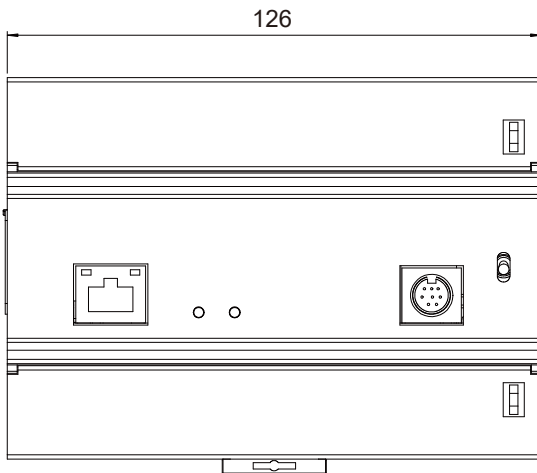
Model Name		DPM-D520I	DPM-C520W	DPM-C501L
Electrical Characteristics				
Measurement Accuracy	Current	± 0.5%	± 0.5%	± 0.5%
	Voltage	± 0.5%	± 0.5%	± 0.5%
	Power	± 0.5%	± 0.5%	± 0.5%
	Active Energy	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S
	Reactive Energy	± 0.5%	± 0.5%	± 0.5%
	Power Factor	± 0.5%	± 0.5%	± 0.5%
	Frequency	± 0.5%	± 0.5%	± 0.5%
Input	Wiring Method	3P3W, 3P4W	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)	Wire voltage : 35~690 V _{AC} (L-L) Phase voltage : 20~400 V _{AC} (L-N)
	Current	63A	1A/5A	
	Frequency Range	45~70Hz	45~70Hz	45~70Hz
	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}	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) / Modbus TCP (WiFi, IEEE802.11 b/g/n)	Modbus RTU (RS - 485)
Mechanical Characteristics				
IP Protection	Front Display	-	IP52	
	Meter Body	IP20	IP20	
Dimensions (W x H x D)		126x90x67.4 mm	96 x 96 x 95.4 mm	
Environmental Conditions				
Operating Temperature		-20 °C ~ +60 °C	-20 °C ~ +60 °C	-20 °C ~ +50 °C
Storage Temperature		-30 °C ~ +70 °C	-30 °C ~ +70 °C	-30 °C ~ +60 °C
Relative Humidity		~95% RH	~95% RH	~95% RH
Altitude		Below 2000 meters	Below 2000 meters	Below 2000 meters
Electromagnetic Compatibility				
Electrostatic Discharge		IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2
Immunity to Radiated Fields		IEC 61000-4-3	IEC 61000-4-3	IEC 61000-4-3
Immunity to Fast Transients		IEC 61000-4-4	IEC 61000-4-4	IEC 61000-4-4
Immunity to Impulse Waves		IEC 61000-4-5	IEC 61000-4-5	IEC 61000-4-5
Conducted Immunity		IEC 61000-4-6	IEC 61000-4-6	IEC 61000-4-6
Immunity to Magnetic Fields		IEC 61000-4-8	IEC 61000-4-8	IEC 61000-4-8
Immunity to Voltage Dips		IEC 61000-4-11	IEC 61000-4-11	IEC 61000-4-11
Radiated Emissions		FCC part 15 EN 55011 Class A	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	FCC part 15 EN 55011 Class A
Harmonics Emissions		IEC 61000-3-2	IEC 61000-3-2	IEC 61000-3-2
Flicker Emissions		IEC 61000-3-3	IEC 61000-3-3	IEC 61000-3-3
Safety				
America			UL/cUL, FCC, IC	
Europe		CE, IEC 61010	CE, IEC 61010	
Asia		CMA	CMA, NCC, JRF, KCC	CMA

Dimensions (Units: mm)

Panel Type (DPM-C530 / C520 / C520W / C501L)



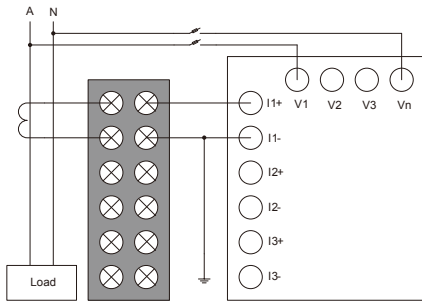
DIN Rail Type (DPM-D520I)



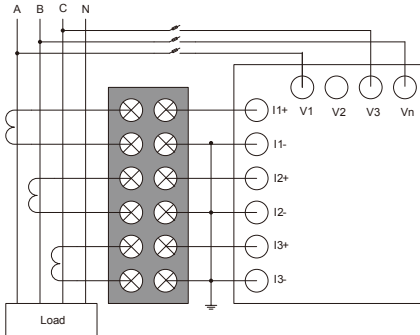
Wiring Diagrams

Panel Type

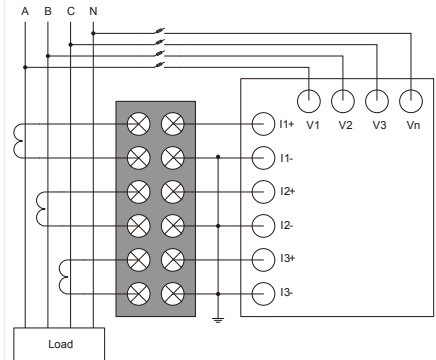
• **1-Phase 2-Wire (1CT)**



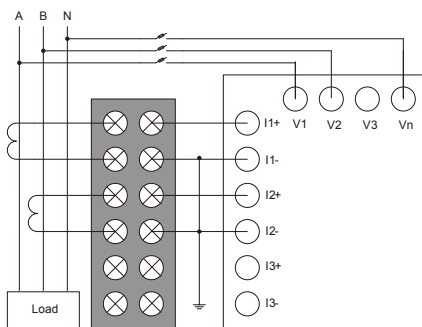
• **3-Phase 3-Wire, Δ-Connection (3CT, no PT)**



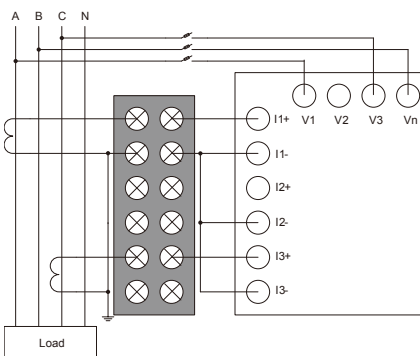
• **3-Phase 4-Wire, Y-Connection (3CT, no PT)**



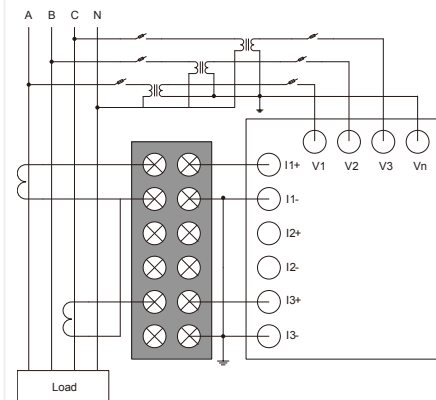
• **1-Phase 3-Wire (2CT)**



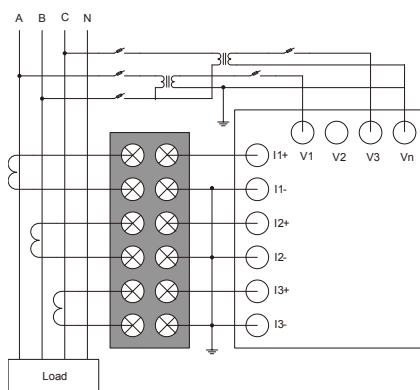
• **3-Phase 3-Wire, Δ-Connection (2CT, no PT)**



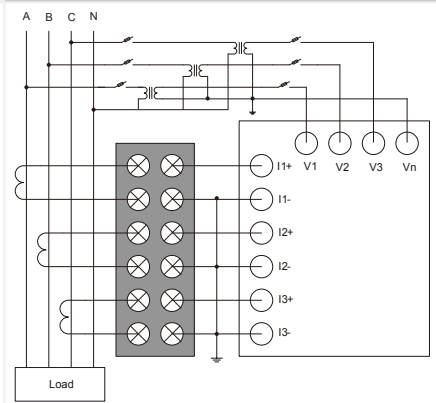
• **3-Phase 4-Wire, Y-Connection (2CT, 3 PT)**



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

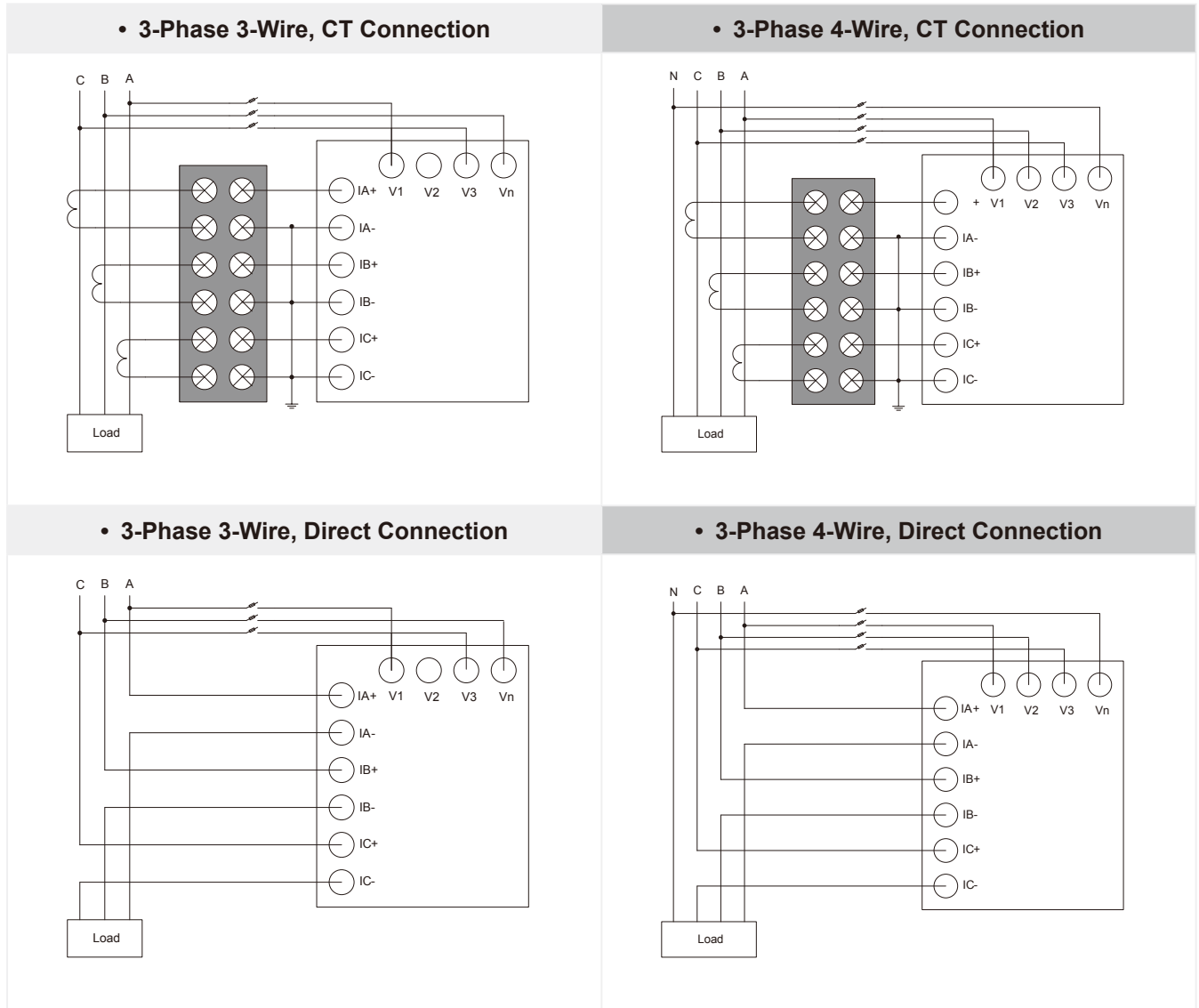


• **3-Phase 4-Wire, Y-Connection (3CT, 3 PT)**



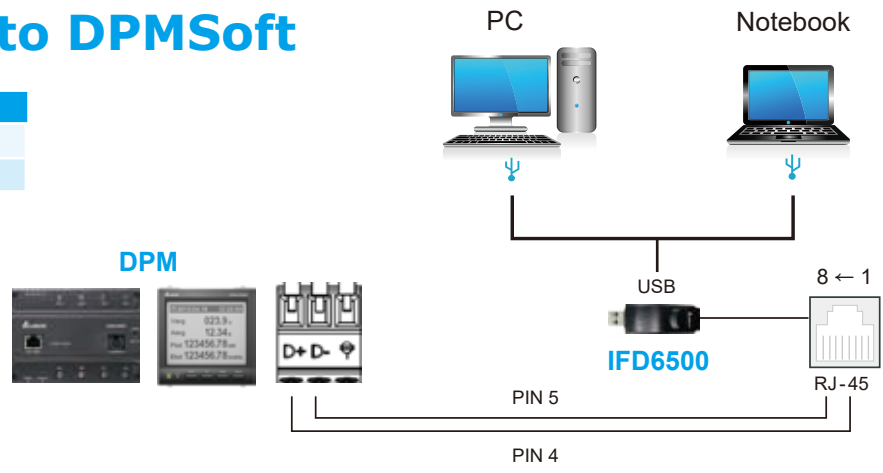
Wiring Diagrams

DIN Rail Type



Connection to DPMSoft

PIN	Definition
4	D+
5	D-



Optional Accessories

Model	Certifications	Primary Current	Secondary Current	Max. Load	Measurement Accuracy	Dimensions (Unit: mm)	
DCT - S201B	UL	100A	5A	1.0VA	1.0%	Outer: 90 x 40 x 110 Inner: 30 x 20	
DCT - S211B	UL	200A	5A	1.0VA	0.5%		
DCT - S221B	UL	300A	5A	1.5VA	0.5%		
DCT - S231B	UL	400A	5A	1.5VA	0.5%	Outer: 115 x 37 x 159 Inner: 80 x 50	
DCT - S241B	UL	500A	5A	2.5VA	0.5%		
DCT - S251B	UL	600A	5A	2.5VA	0.5%		
DCT - S261B	UL	750A	5A	2.5VA	0.5%		
DCT - S2C1B	UL	800A	5A	3.75VA	0.5%		
DCT - S271B	UL	1000A	5A	5VA	0.5%		

Model	Certifications	Primary Current	Secondary Current	Max. Load	Measurement Accuracy	Dimensions (Unit: mm)	
DCT - S301C	CE	100A	5A	1.5VA	1.0%	Outer: 89 x 40 x 115 Inner: 32 x 21	
DCT - S211C	CE	200A	5A	1.0VA	0.5%		
DCT - S221C	CE	300A	5A	1.5VA	0.5%		
DCT - S231C	CE	400A	5A	2.5VA	0.5%	Outer: 116 x 51 x 145 Inner: 80 x 50	
DCT - S241C	CE	500A	5A	2.5VA	0.5%		
DCT - S251C	CE	600A	5A	2.5VA	0.5%		
DCT - S261C	CE	750A	5A	2.5VA	0.5%		
DCT - S271C	CE	1000A	5A	5VA	0.5%	Outer: 146 x 51.6 x 196 Inner: 80 x 122	
DCT - S281C	CE	1500A	5A	7.5VA	0.5%		
DCT - S291C	CE	2000A	5A	10VA	0.5%		
DCT - S2A1C	CE	2500A	5A	15VA	0.5%	Outer: 186 x 67 x 250 Inner: 81 x 160.5	
DCT - S2B1C	CE	3000A	5A	20VA	0.5%		



Smarter. Greener. Together.

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Asia

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