Digitized Automation for a Changing World

Delta Power Meter
DPM Series

www.deltaww.com

DELTA
Smarter. Greener. Together.

Delta Power Meter
DPM Series

The DPM Series precisely measures various electrical energy and power quality parameters, including power factors, harmonics, and current/voltage unbalance. This series also features a variety of communication protocols for easy integration with critical power systems and monitoring functions to provide power data, off-limit alarms, and history logs.

Panel Mount Type DPM-C Series

- Real-time data display and easy integration with remote monitoring systems, suitable for general applications in machine rooms

Applications

Distribution board | Electrical room | Factory / Building energy management system

DIN Rail Mount Type DPM-D Series

- Easy installation and integration for equipment energy management

Applications

High power consuming equipment | Electrical equipment cabinet | Enclosure

Multi-Loop Type DPM-M Series

- Multiple and selective large-scale circuit monitoring with lots of power circuits to save cost

Applications

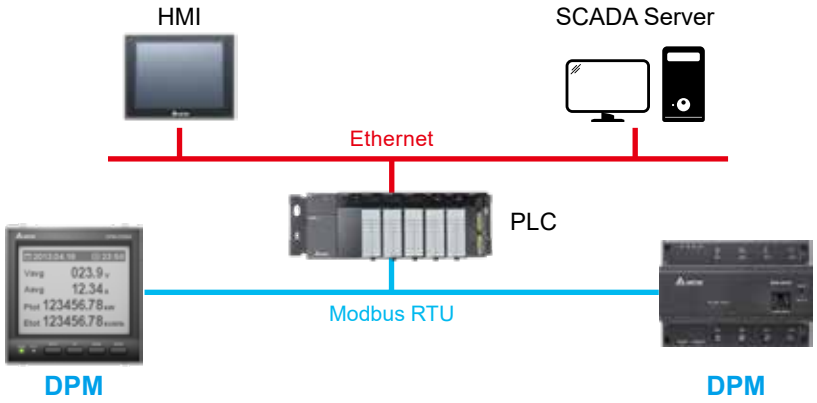
Shopping mall | Dormitory | Telecommunication System

High Precision Power Measurement

- Precise measurement of bidirectional electrical energy and power parameters, meeting IEC 62053-22 standards

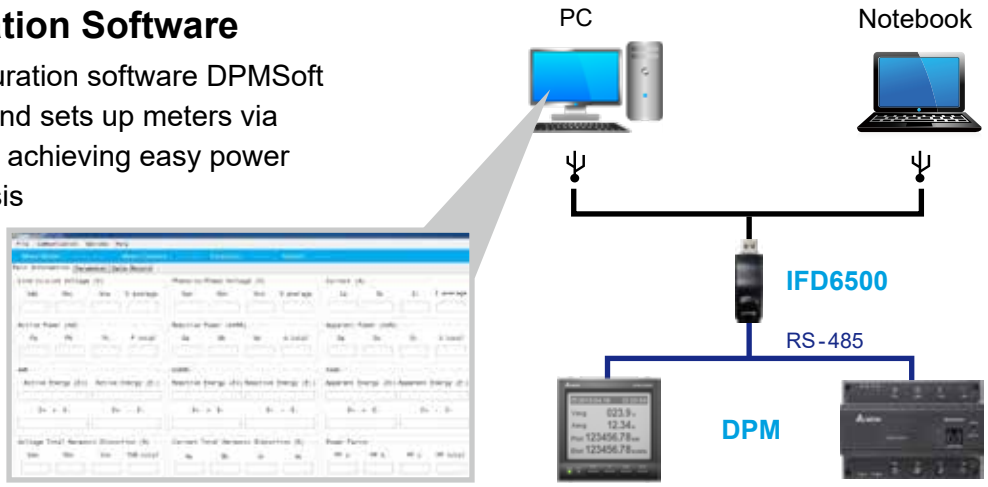
Built-in Protocols for Easy Integration

- Built-in RS-485 communication port supports Modbus for transmission of all measurement values to the PLCs, PCs and monitoring software



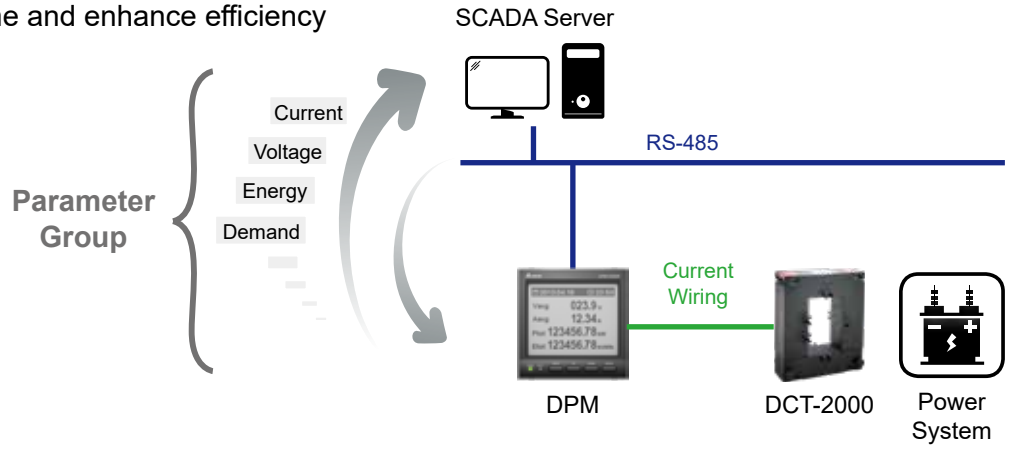
PC-based Configuration Software

- The power meter configuration software DPMSoft collects electricity data and sets up meters via Modbus communication, achieving easy power management and analysis



User-defined Parameter Groups

- Allows user-defined Modbus addresses to multiple corresponding parameters for the host computer to acquire data at one time and enhance efficiency



Panel Mount Type
DPM-C Series

- Suitable for applications in general power systems
- Large LCD displays power data in real time
- A variety of communication protocols for easy integration
- Various power monitoring functions for different applications

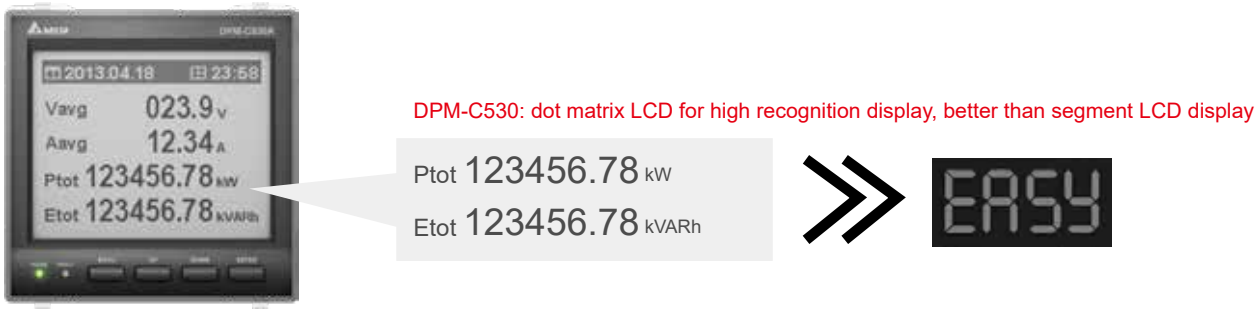
Applications

Distribution board | Electrical room |
Factory/ Building energy management system

Features

Multi-Language Display

- Large dot matrix LCD (198 x 168 dots), high font recognition
- Multi-language display: English (capital and lowercase letters), Chinese, Japanese and other languages



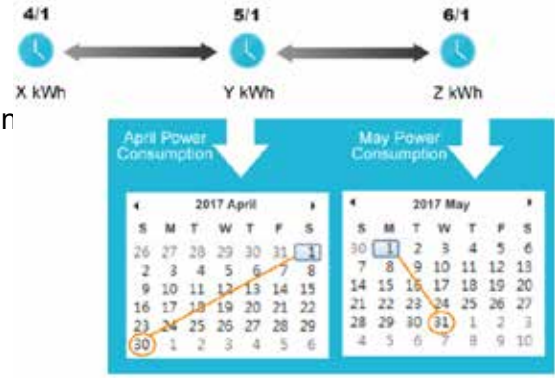
Event Alarms and History Logs

- Keeps max. 2 months of electricity measurement values for analysis;
  up to 17 power parameters selectable for recordings of different time intervals (e.g. recording 17 electricity parameters every 5 minutes for up to 2 months);
  29 types of built-in alarms and up to 500 alarms recording

Interval / Capacity	0 ~ 59 secs.	1 ~ 5 mins.	5 ~ 60 mins.
Max. Data Types	6	17	17
Max. Storage Time (Days)	7	31	62

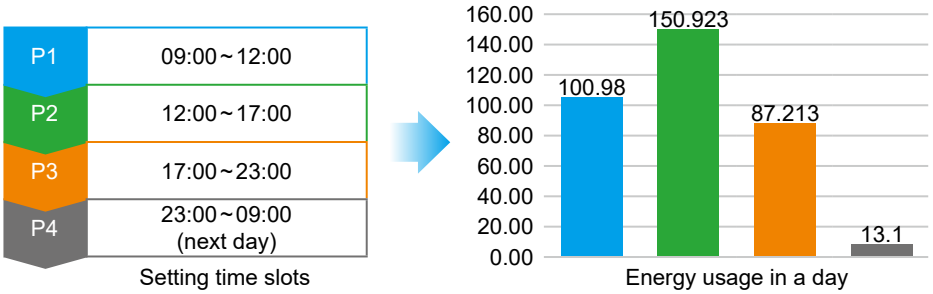
Auto-Recording

- Automatic calculation of monthly energy consumption
- Allows users to setup specific dates for monthly calculation



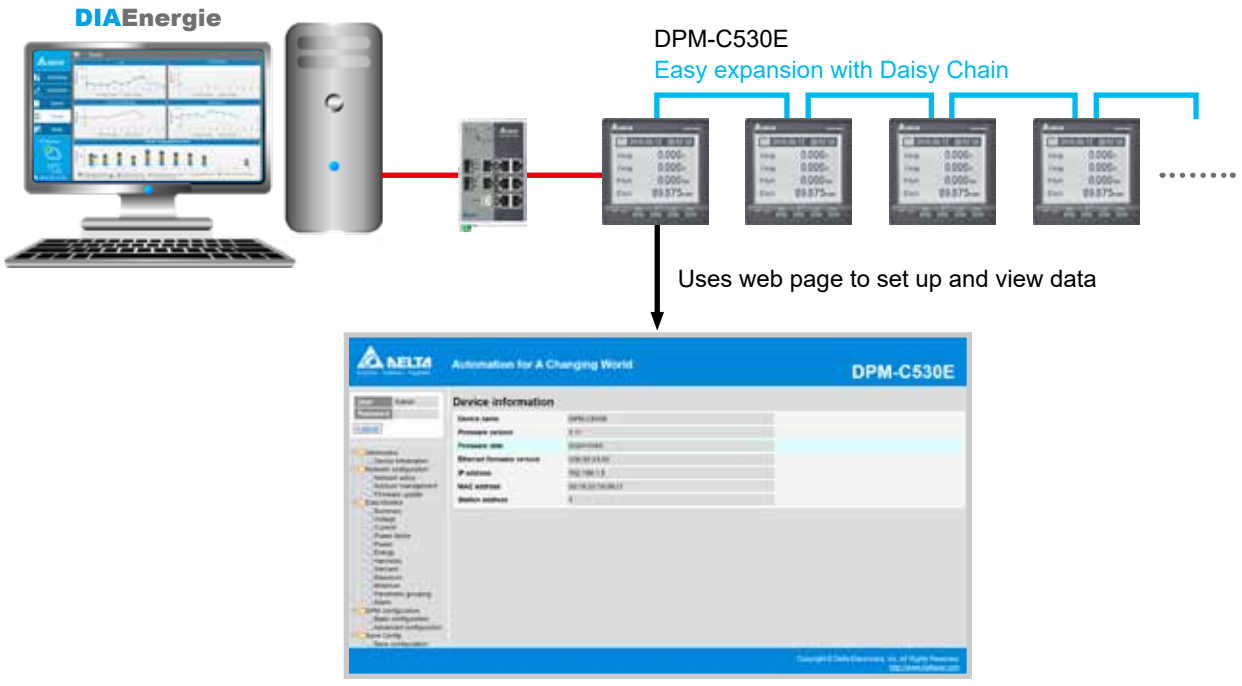
Multi-Tariff

- Automatic measurement & calculation of power consumption during a specific time period
- Multiple interval groups setting to measure power consumption at different periods of time



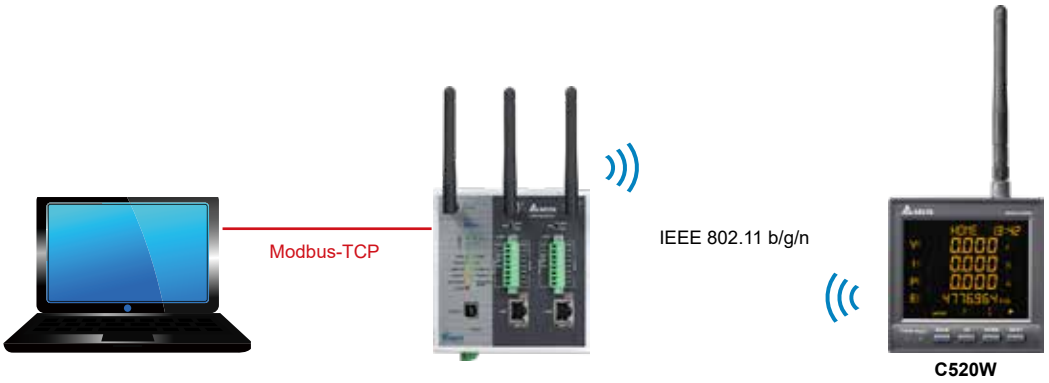
Ethernet Communication

- Dual Ethernet protocols support Modbus TCP
- Easy serial connection without gateway, no need to occupy communication ports
- Basic settings and data viewing on web page



WiFi

- WiFi transmission
  - Reduced wiring cost and time
  - High-speed data exchange and data transmission capability (faster than RS-485)
  - Highly secure wireless data exchange
- No wiring limit, reduces cost and manpower for wiring



Input / Output / Relay

Achieves easier system integration with functions such as anomaly alarms, and connected devices' monitoring & control.

Digital input
External condition monitoring / input metering / setting adjustment

Digital output
Alarms / pulse (kWH only) calculation

Relay
Alarms / external devices activation

DPM-C Series Information

Model	DPM-C530	DPM-C530E	DPM-C532	DPM-C520	DPM-C520W
Product Appearance					
Front Panel Dimensions	96 x 96 mm	96 x 96 mm	96 x 96 mm	96 x 96 mm	96 x 96 mm
Accuracy Class					
Active Energy (IEC 62053-22)	Class 0.5S	Class 0.5S	Class 0.5S	Class 0.5S	Class 0.5S
Instantaneous Measurement					
Current	●	●	●	●	●
Voltage	●	●	●	●	●
Frequency	●	●	●	●	●
Active, Reactive and Apparent Power	●	●	●	●	●
Power Factor	●	●	●	●	●
Active, Reactive and Apparent Energy	●	●	●	●	●
Demand Value					
Current	●	●	●		
Power	●	●	●		
Calculation Mode	Fixed Block	Sliding Block / Fixed Block	Sliding Block / Fixed Block		
Power Quality Analysis					
Current / Voltage Unbalance	●	●	●	●	●
Total Harmonic Distortion (Current / Voltage)	●	●	●	●	●
Individual Current / Voltage Harmonics	31st	31st	31st		
Advanced Function					
Max. / Min. Instantaneous Values with Timestamp	●	●	●	●	●
Alarm Function	●	●	●	●	●
Alarm Condition	29	29	29	10	10
Alarm Logs	●	●	●		
Data Logs	●	●	●		
User-defined Modbus Address	35	35	35	5	5
Monthly Energy Usage	●	●	●		
Multi-Tariff (Section number)	8	8	8		
Multi-Language UI	Chinese / English / Japanese	Chinese / English / Japanese	Chinese / English / Japanese		
I/O					
Digital Input			4		
Digital Output			2		
Relay					
Communication					
RS-485	●		●	●	●
Ethernet		● (2 ports)			
Modbus	RTU / ASCII	TCP	RTU / ASCII	RTU	RTU / TCP
BACnet MS/TP	●		●		
WiFi (802.11 b/g/n)					●

Model	DPM-C320	DPM-C510	DPM-C501L	DPM-C502
Product Appearance				
Front Panel Dimensions	72 x 72 mm	96 x 96 mm	96 x 96 mm	96 x 96 mm
Accuracy Class				
Active Energy (IEC 62053-22)	Class 0.5S	Class 0.5	0.5%	0.5%
Instantaneous Measurement				
Current	●	●	●	●
Voltage	●	●	●	●
Frequency	●	●	●	●
Active, Reactive and Apparent Power	●	●	●	●
Power Factor	●	●	●	●
Active, Reactive and Apparent Energy	●	●	●	●
Demand Value				
Current				
Power				●
Calculation Mode				Sliding Block
Power Quality Analysis				
Current / Voltage Unbalance	●		●	●
Total Harmonic Distortion (Current / Voltage)	●		●	●
Individual Current / Voltage Harmonics				31st
Advanced Function				
Max. / Min. Instantaneous Values with Timestamp	●		●	●
Alarm Function	●		●	●
Alarm Condition	10		10	10
Alarm Logs				
Data Logs				●
User-defined Modbus Address	5		5	5
Monthly Energy Usage				
Multi-Tariff (Section number)				4
Multi-Language UI				
I/O				
Digital Input			4	4
Digital Output				
Relay			2	2
Communication				
RS-485	●	●	●	●
Modbus	RTU	RTU	RTU	RTU

Technical Specifications

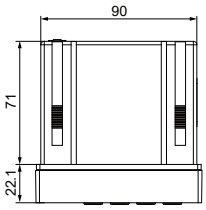
Model	DPM-C530	DPM-C530E	DPM-C532
Measurement Accuracy			
Current	± 0.5%		
Voltage	± 0.5%		
Active Energy	IEC 62053-22 Class 0.5S		
Reactive Energy	± 1%		
Apparent Energy	± 2%		
Active Power	± 0.5%		
Reactive Power	± 1%		
Apparent Power	± 2%		
Power Factor	± 0.5%		
Frequency	± 0.5%		
Input			
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W		
Voltage	35 V_{AC} ~ 690 V_{AC} (L-L); 20 V_{AC} ~ 400 V_{AC} (L-N)		
Current	1A/5A		
Frequency	45 ~ 70 Hz		
Control Power	AC: 100 ~ 240 V (max. power consumption 4.6 W); DC: 100 ~ 300 V		
Digital Input			
On Voltage			11 ~ 40 V_{DC}
Off Voltage			0 ~ 4 V_{DC}
Input current			≦ 8 mA
Input Resistance			3k Ω
Maximum Frequency			200 Hz
Isolation			5 kV rms
Digital Output			
Max load voltage			40 V_{DC}
Max load current			20 mA
On Resistance			50 Ω max
Frequency for Digital Output			100 Hz max
Pulse width for Digital Output			50% duty cycle
Isolation			5 kV rms
Data Record			
Max./Min. Value	●	●	●
Alarm Status & Timestamp	●	●	●
Alarm Counting	●	●	●
Alarm Logs	500	500	500
Data Logs	Up to 17 parameters with configurable interval & duration (e.g. 17 parameters for 30 days at 1 minute intervals)		
Customizable Data Logs	●	●	●
Communication			
Protocol (Interface)	Modbus RTU/ASCII (RS-485) BACnet MS/TP (RS-485)	Modbus TCP (Ethernet)	Modbus RTU/ASCII (RS-485) BACnet MS/TP (RS-485)
Mechanical Design			
IP Rating - Front Panel	IP52		
IP Rating - Case	IP20		
Dimensions (W x H x D, mm)	96 x 96 x 95.4	96 x 96 x 127.5	96 x 96 x 127.5
Weight (g)	400	450	450
Operating Environment			
Operating Temperature	-20 ˚C ~ +60 ˚C		
Storage Temperature	-30 ˚C ~ +70 ˚C		
Relative Humidty	~ 95% RH		
Altitude	Below 2,000 meters		
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, EN 55011 Class A		
Conducted Emissions	FCC Part 15, EN 55011 Class A		
Harmonics Emissions	IEC 61000-3-2		
Flicker Emissions	IEC 61000-3-3		
Certification			
Safety	UL/CE/RCM	UL/CE	
Accuracy	IEC 62053-22/CMA		

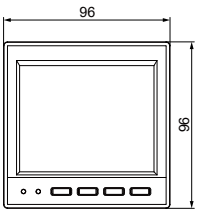
Model	DPM-C520	DPM-C520W	DPM-C320
Measurement Accuracy			
Current	± 0.5%		
Voltage	± 0.5%		
Active Energy	IEC 62053-22 Class 0.5S		
Reactive Energy	± 1%		
Apparent Energy	± 2%		
Active Power	± 0.5%		
Reactive Power	± 1%		
Apparent Power	± 2%		
Power Factor	± 0.5%		
Frequency	± 0.5%		
Input			
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W		
Voltage	35 V_{AC} ~ 690 V_{AC} (L-L) 20 V_{AC} ~ 400 V_{AC} (L-N)		
Current	1A/5A		
Frequency	45 ~ 70 Hz		
Control Power	AC: 100 ~ 240 V (max. power consumption 4.6 W) DC: 100 ~ 300 V		
Data Record			
Max./Min. Value	●	●	●
Alarm Status & Timestamp	●	●	●
Alarm Counting	●	●	●
Communication			
Protocol (Interface)	Modbus RTU (RS-485)	Modbus RTU (RS-485) / Modbus TCP (WiFi, IEEE802.11 b/g/n)	Modbus RTU (RS-485)
Mechanical Design			
Dimensions (W x H x D, mm)	96 x 96 x 95.4	96 x 96 x 95.4	72 x 72 x 107.7
Weight (g)	400	400	250
Operating Environment			
Operating Temperature	-20 ˚C ~ +60 ˚C		
Storage Temperature	-30 ˚C ~ +70 ˚C		
Relative Humidty	~ 95% RH		
Altitude	Below 2,000 meters		
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, EN 55011 Class A		
Conducted Emissions	FCC Part 15, EN 55011 Class A		
Harmonics Emissions	IEC 61000-3-2		
Flicker Emissions	IEC 61000-3-3		
Certification			
Safety	UL/CE		
Accuracy	IEC 62053-22/CMA		
WiFi		CE/FCC/JRF/ KCC/NCC/NBTC	

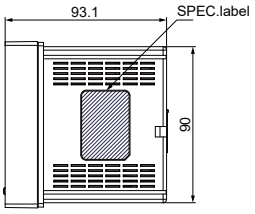
Model	DPM-C510	DPM-C501L	DPM-C502
Measurement Accuracy			
Current	± 0.5%	± 0.5%	± 0.5%
Voltage	± 0.5%	± 0.5%	± 0.5%
Active Energy	IEC 62053-22 Class 0.5	± 0.5%	± 0.5%
Reactive Energy	± 2%	± 1%	± 1%
Apparent Energy	± 2%	± 2%	± 2%
Active Power	± 0.5%	± 0.5%	± 0.5%
Reactive Power	± 2%	± 1%	± 1%
Apparent Power	± 2%	± 2%	± 2%
Power Factor	± 0.5%	± 0.5%	± 0.5%
Frequency	± 1%	± 0.5%	± 0.5%
Input			
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W	1P2W, 1P3W, 3P3W, 3P4W	
Voltage	80 V_{AC} ~ 690 V_{AC} (L-L) 50 V_{AC} ~ 400 V_{AC} (L-N)	35 V_{AC} ~ 690 V_{AC} (L-L) 20 V_{AC} ~ 400 V_{AC} (L-N)	
Current	1A/5A	1A/5A	
Frequency	50/60 Hz	45 ~ 70 Hz	
Control Power	AC: 100 ~ 240 V (max. power consumption 4.6 W) DC: 100 ~ 300 V	AC: 100 ~ 240 V (max. power consumption 4.6 W) DC: 100 ~ 300 V	
Digital Input			
On Voltage		With build-in power	
Off Voltage			
Input current		≦ 5 mA	
Input Resistance		3k Ω	
Maximum Frequency		20 Hz	
Isolation		2.5 kV rms	
Relay			
Max output frequency		20 Hz	
Switching current		240 V_{AC} at 2Amps, resistive 24 V_{DC} at 2Amps, resistive	
Isolation		2.5 kV rms	
Data Record			
Max./Min. Value		●	●
Alarm Status & Timestamp		●	●
Alarm Counting		●	●
Alarm Logs			
Data Logs			Fixed 4 parameters with configurable interval & duration (e.g. 4 parameters for 7 days at 1 minute intervals)
Communication			
Protocol (Interface)	Modbus RTU (RS-485)	Modbus RTU (RS-485)	
Mechanical Design			
IP Rating - Front Panel	IP52	IP52	
IP Rating - Case	IP20	IP20	
Dimensions (W x H x D, mm)	96 x 96 x 98.1	96 x 96 x 95.4	
Weight (g)	350	400	400
Operating Environment			
Operating Temperature	-20 °C ~ +60 °C	-20 °C ~ +50 °C	
Storage Temperature	-30 °C ~ +70 °C	-30 °C ~ +60 °C	
Relative Humidty	~ 95% RH	~ 95% RH	
Altitude	Below 2,000 meters	Below 2,000 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	
Certification			
Safety	UL/CE		
Accuracy	IEC 62053-22/CMA	CMA	

Dimensions

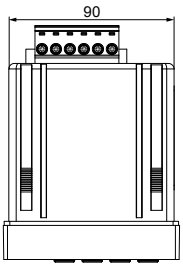
DPM-C530
DPM-C520
DPM-C520W

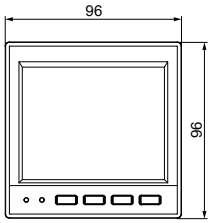


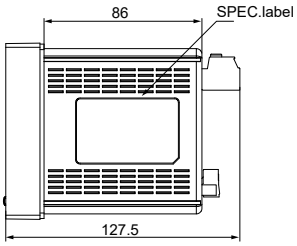




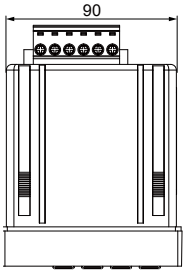
DPM-C530E

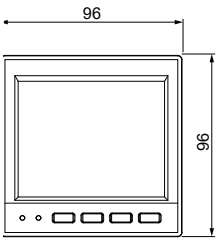


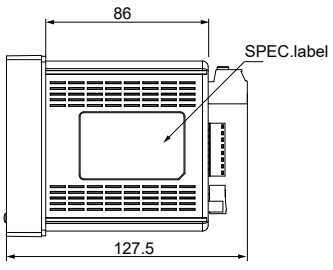




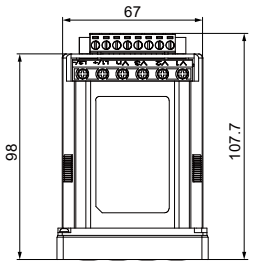
DPM-C532

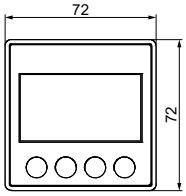


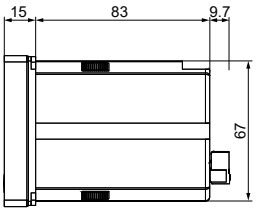




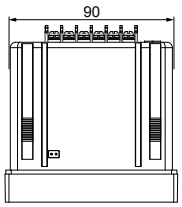
DPM-C320

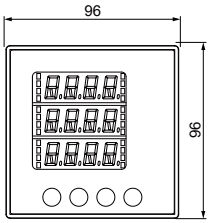


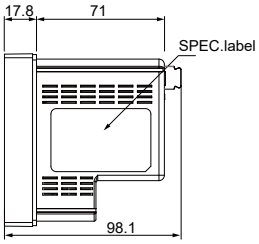




DPM-C510







DPM-C501L
DPM-C502