Digitized Automation for a Changing World

Delta Power Meter
DPM Series

www.deltaww.com

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

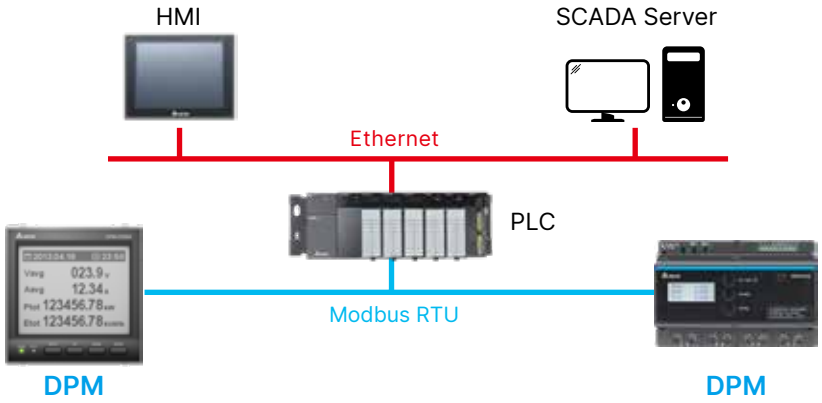
Shopping mall | Dormitory | Telecommunication System

High Precision Power Measurement

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

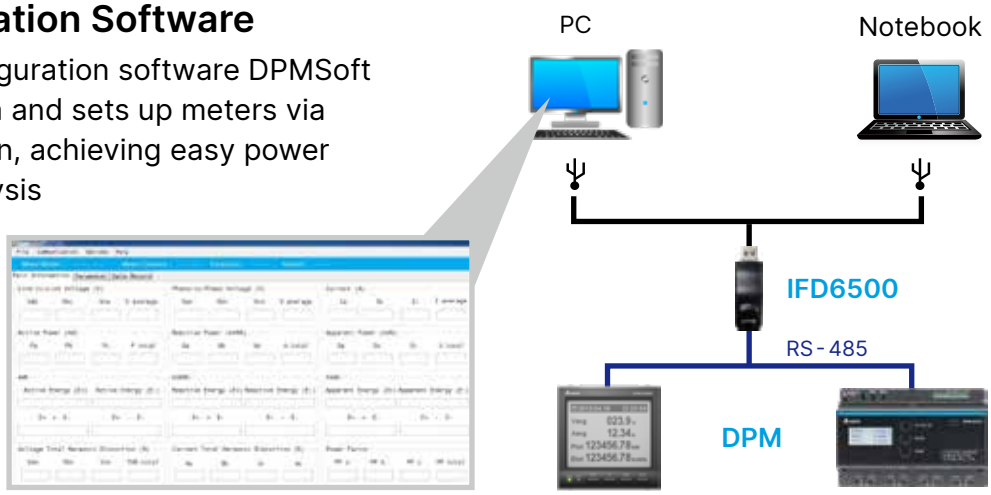
Built-in Protocols for Easy Integration

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



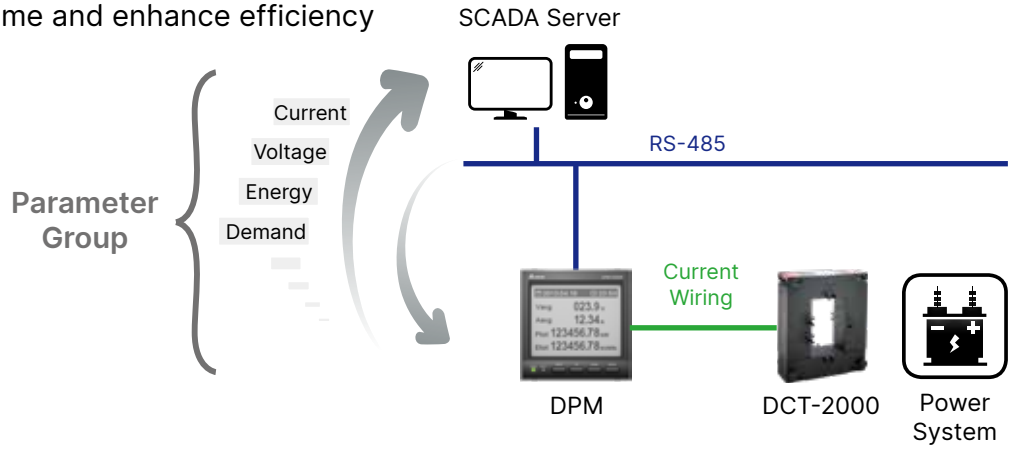
PC-based Configuration Software

- 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 applicatio

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

DPM-C530: dot matrix LCD for high recognition display, better than segment LCD display

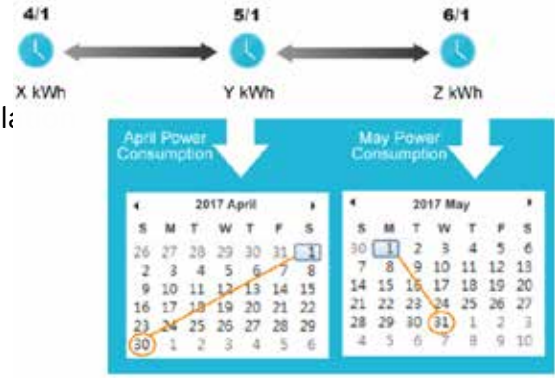
Event Alarms and History Logs

- 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

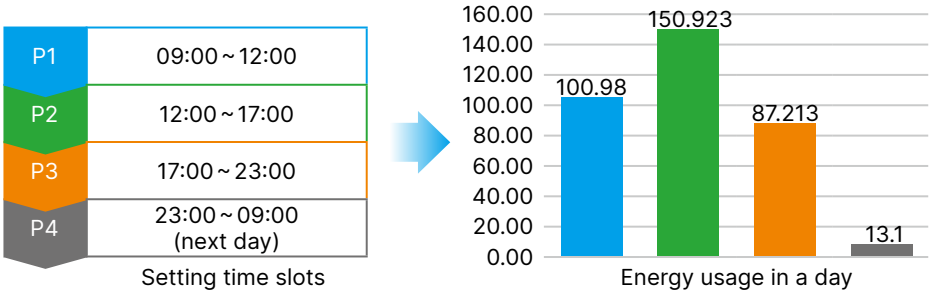
Auto-Recording

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



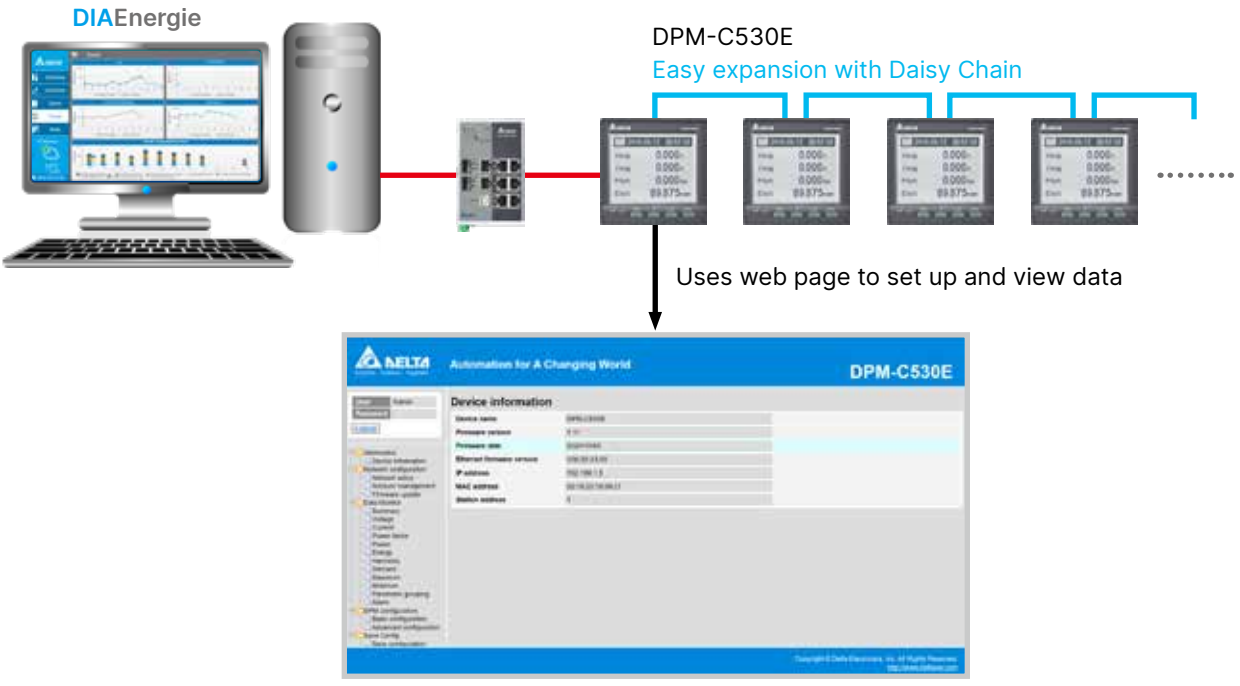
Multi-Tariff

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



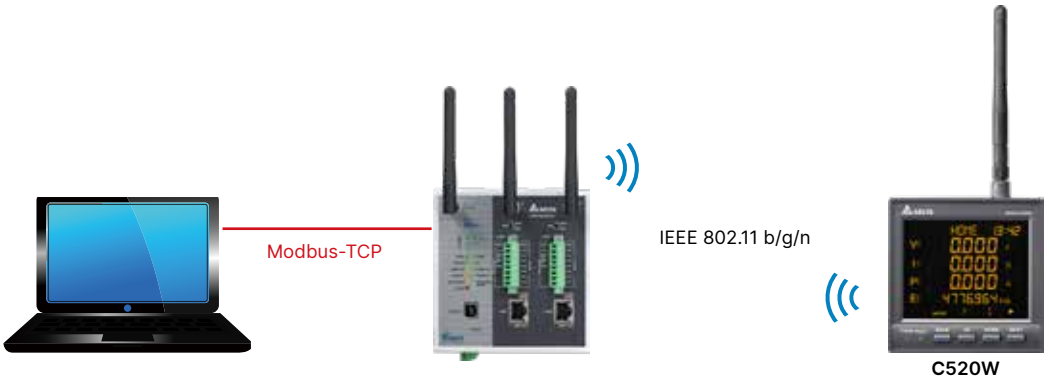
Ethernet Communication

- 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 Capability

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	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S	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	Fixed Block	Sliding / Fixed Block	Sliding / 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 History	●	●	●		
Data Logs	●	●	●		
User-Define Modbus Address	35	35	35	5	5
Monthly Energy Usage	●	●	●		
Multi-Tariff (Section number)	8	8	8		
Multi-Language UI	Chinese / English / Japanese				
I/O					
Digital Input			4		
Digital Output			2		
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-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	96 x 96 mm
Accuracy Class					
Active Energy	0.5%	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S	0.5%	0.5%
Instantaneous Measurement					
Current	●	●	●	●	●
Voltage	●	●	●	●	●
Frequency	●	●	●	●	●
Active, Reactive and Apparent Power	●	●	●	●	●
Power Factor	●	●	●	●	●
Active, Reactive and Apparent Energy	●	●	●	●	●
Demand Value					
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
Data Logs					●
User-Define Modbus Address	5			5	5
Multi-Tariff (Section number)					4
I/O					
Digital Input				4	4
Relay				2	2
Communication					
RS-485	●	●		●	●
Ethernet			●		
Modbus	RTU	RTU	TCP	RTU	RTU

Technical Specifications

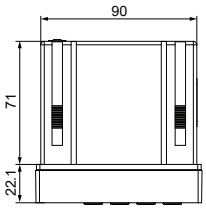
Model	DPM-C530	DPM-C530E	DPM-C532
Measurement Accuracy			
Current	± 0.5%		
Voltage	± 0.5%		
Active Energy	IEC 62053-22 Class 0.5S		
Reactive Energy	± 1%		
Apparent Energy	± 2%		
Active Power	± 0.5%		
Reactive Power	± 1%		
Apparent Power	± 2%		
Power Factor	± 0.5%		
Frequency	± 0.5%		
Input Characteristics			
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W		
Voltage	35 ~ 690 V_{AC} (L-L) 20 ~ 400 V_{AC} (L-N)		
Current	1 A / 5 A		
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. Log	●	●	●
Alarm Status & Timestamp	●	●	●
Alarm Counting	●	●	●
Alarm History Record	500	500	500
Data Logging	Up to 17 parameters with configurable interval & duration (e.g. 17 parameters for 30 days at 1 minute interval)		
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 Characteristics			
IP Protection - Front Display	IP52		
IP Protection - Meter Body	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
Environmental Characteristics			
Operating Temperature	-20 ~ +60˚C		
Storage Temperature	-30 ~ +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		

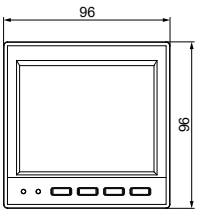
Model	DPM-C520	DPM-C520W	DPM-C320
Measurement Accuracy			
Current	± 0.5%		
Voltage	± 0.5%		
Active Energy	± 0.5%		
Reactive Energy	± 1%		
Apparent Energy	± 2%		
Active Power	± 0.5%		
Reactive Power	± 1%		
Apparent Power	± 2%		
Power Factor	± 0.5%		
Frequency	± 0.5%		
Input Characteristics			
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W		
Voltage	35 ~ 690 V_{AC} (L-L) 20 ~ 400 V_{AC} (L-N)		
Current	1 A / 5 A		
Frequency	45 ~ 70 Hz		
Control Power	AC: 100 ~ 240 V (Max. Power Consumption 4.6 W) DC: 100 ~ 300 V		
Data Record			
Max. / Min. Log	●	●	●
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 Characteristics			
IP Protection - Front Display	IP52		
IP Protection - Meter Body	IP20		
Dimensions (W x H x D, mm)	96 x 96 x 95.4		72 x 72 x 107.7
Weight (g)	400	400	250
Environmental Characteristics			
Operating Temperature	-20 ~ +60 ˚C		
Storage Temperature	-30 ~ +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	CMA		
WiFi		CE / FCC / JRF / KCC / NCC / NBTC	

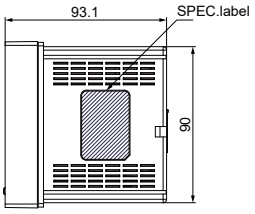
Model	DPM-C510	DPM-C510E	DPM-C501L	DPM-C502
Measurement Accuracy				
Current	± 0.5%		± 0.5%	
Voltage	± 0.5%		± 0.5%	
Active Energy	IEC 62053-22 Class 0.5S		± 0.5%	
Reactive Energy	± 2%		± 1%	
Apparent Energy	± 2%		± 2%	
Active Power	± 0.5%		± 0.5%	
Reactive Power	± 2%		± 1%	
Apparent Power	± 2%		± 2%	
Power Factor	± 0.5%		± 0.5%	
Frequency	± 1%		± 0.5%	
Input Characteristics				
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	1 A / 5 A		1 A / 5 A	
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 2 Amps, resistive 24 V_{DC} at 2 Amps, resistive	
Isolation			2.5 kV rms	
Data Record				
Max./Min. Value			●	●
Alarm Status & Timestamp			●	●
Alarm Counting			●	●
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 TCP (Ethernet)	Modbus RTU (RS-485)	
Mechanical Characteristics				
IP Rating - Front Panel	IP52		IP52	
IP Rating - Meter Body	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
Environmental Characteristics				
Operating Temperature	-20 ~ +60°C		-20 ~ +50°C	
Storage Temperature	-30 ~ +70°C		-30 ~ +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	

Dimensions

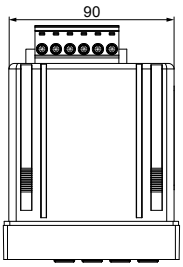
DPM-C530
DPM-C520
DPM-C520W

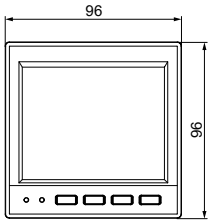


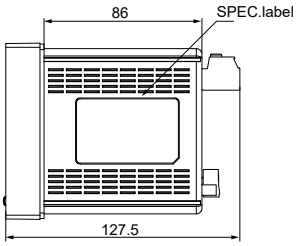




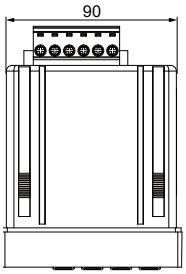
DPM-C530E

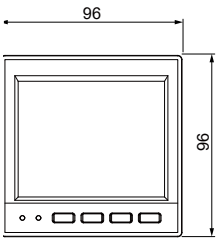


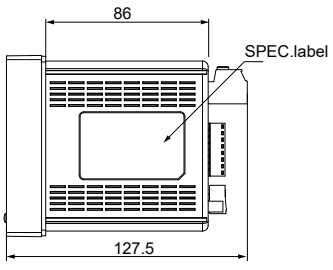




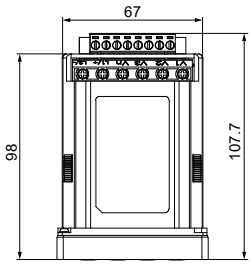
DPM-C532

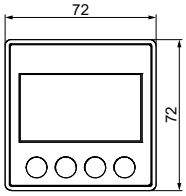


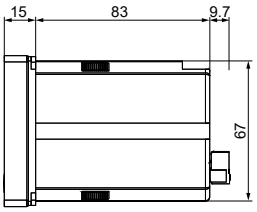




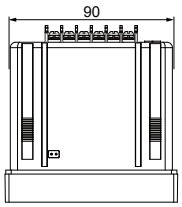
DPM-C320

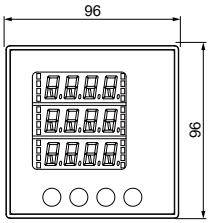


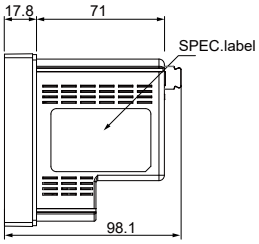




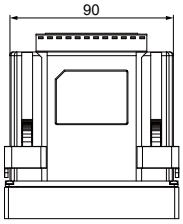
DPM-C510
DPM-C510E

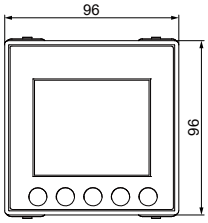


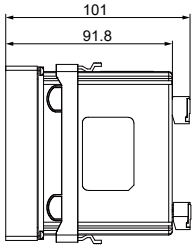




DPM-C501L
DPM-C502







DIN Rail Mount Type
DPM-D Series

- Easy installation and integration for various equipment
- Applicable to general energy management systems
- Multiple energy measurement functions for different applications

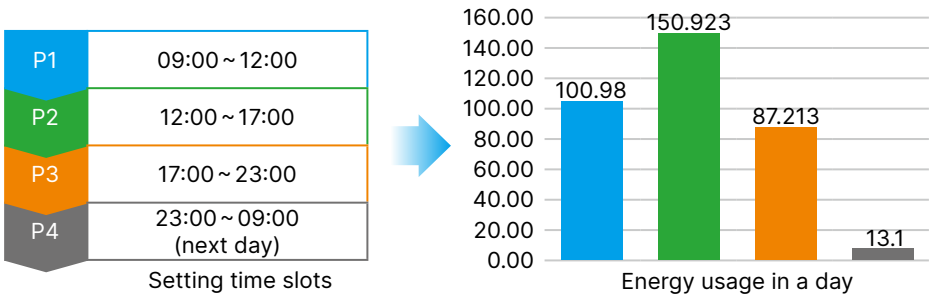
Applications

High power consuming equipment | Electrical equipment cabinet | Enclosure

Features

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



Input / Output Capability

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

Data Recording (Recording conditions depend on models)

- User-defined time intervals for recording (Units: day / hour / min. / sec.)
- Max. 50 parameters recording
- Max. 16 alarm conditions and max. 16 alarms recording

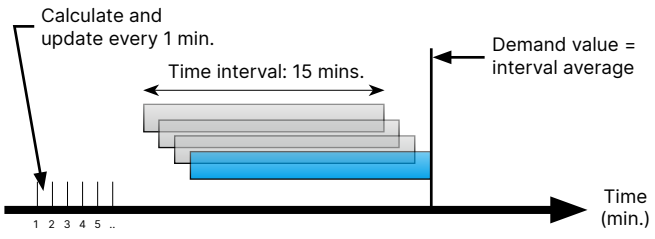
Recorded items vs. Record duration
(at 1 minute intervals)

Parameter(s)	Recording Days
1	90
7	30
20	12

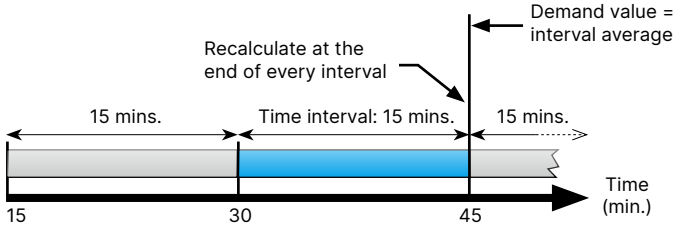
Demand Calculation

- Defines time intervals (default: 15 mins.)
- Demand calculation methods: Sliding block / fixed block
- Calculates the max. demand value / time in each tariff period

Sliding Block



Fixed Block

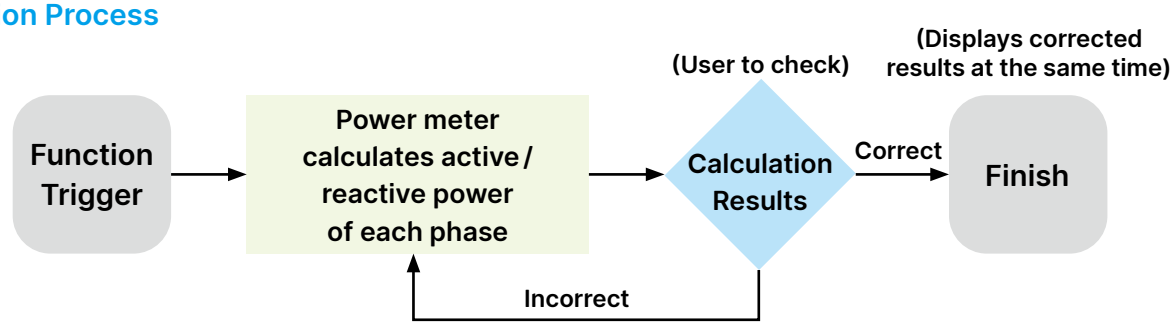


Automatic Wiring Correction (DPM-DA530)

- Automatic wiring correction via algorithm to save manpower for on-site re-wiring
- Fixes phase wiring errors and adjusts power flow direction

* Refer to product manual for function restrictions

Operation Process



DPM-D Series Information

Model	DPM-D532I	DPM-D533I	DPM-D520I
Product Appearance			
Accuracy Class			
Active Energy	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.5S	0.5%
Instantaneous Measurement			
Current	●	●	●
Voltage	●	●	●
Frequency	●	●	●
Active, Reactive and Apparent Power	●	●	●
Power Factor	●	●	●
Active, Reactive and Apparent Energy	●	●	●
Current Measurement			
Direct Measurement (Current Range)	63 A	63 A	63 A
Demand Value			
Current	●	●	●
Power	●	●	●
Calculation Mode	Sliding / Fixed Block	Sliding / Fixed 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
Alarm History	●	●	●
Data Logs	●	●	●
User-Defined Modbus Address	35	35	35
Monthly Energy Usage	●	●	●
Multi-Tariff (Section Number)	8	8	8
I/O			
Digital Input	2	2	
Digital Output	2	2	
Communication			
RS-485	●	●	●
Modbus	RTU / ASCII	RTU / ASCII	RTU / ASCII

Model	DPM-DA530	DPM-DA510	DPM-D510
Product Appearance			
Accuracy Class			
Active Energy	0.5%	0.5%	IEC 62053-22 Class 0.5S
Instantaneous Measurement			
Current	●	●	●
Voltage	●	●	●
Frequency	●	●	●
Active, Reactive and Apparent Power	●	●	●
Power Factor	●	●	●
Active, Reactive and Apparent Energy	●	●	●
Current Measurement			
Via External CT (Current Range)	1A/5A	1A/5A	1A/5A
Demand Value			
Current	●		
Power	●		
Calculation Mode	Sliding/Fixed Block		
Power Quality Analysis			
Current/Voltage Unbalance	●		
Total Harmonic Distortion (Current/Voltage)	●		
Advanced Function			
Max./Min. Instantaneous Values with Timestamp	●		
Alarm Function	●		
Alarm Condition	16		
Alarm Logs	●		
Data Logs	●		
User-Defined Modbus Address	20		
Multi-Tariff (Section number)	8		
Auto Wiring Correction	●		
CO_2 Emission	●		
I/O			
Digital Output	1 (kWH only)	1 (kWH only)	
Communication			
RS-485	●	●	●
Modbus	RTU	RTU	RTU

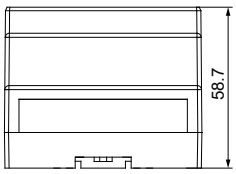
Technical Specifications

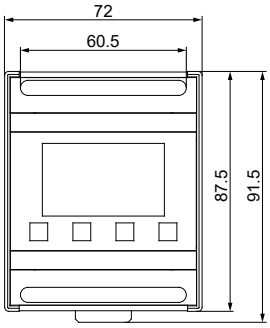
Model	DPM-D532I	DPM-D533I	DPM-D520I
Measurement Accuracy			
Current	± 0.5%		± 0.5%
Voltage	± 0.5%		± 0.5%
Active Energy	IEC 62053-22 Class 0.5S		± 0.5%
Reactive Energy	± 1%		± 1%
Apparent Energy	± 2%		± 2%
Active Power	± 0.5%		± 0.5%
Reactive Power	± 1%		± 1%
Apparent Power	± 2%		± 2%
Power Factor	± 0.5%		± 0.5%
Frequency	± 0.5%		± 0.5%
Input Characteristics			
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W		1P2W, 1P3W, 3P3W, 3P4W
Voltage	138 ~ 480 V (L-L) 80 ~ 277 V (L-N)	35 ~ 690 V_{AC} (L-L) 20 ~ 400 V_{AC} (L-N)	35 ~ 690 V_{AC} (L-L) 20 ~ 400 V_{AC} (L-N)
Current	63 A		63 A
Frequency	45 ~ 70 Hz		45 ~ 70 Hz
Control Power	N/A (Integrated in voltage input, Max.Power Consumption 4.6 W)	DC: 12 ~ 60 V (Max.Power Consumption 4.6 W)	AC: 80 ~ 265 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 Log	●		●
Alarm Status & Timestamp	●		●
Alarm Counting	●		●
Alarm History Record	500		500
Data Logging	Up to 17 parameters with configurable interval & duration (e.g. 17 parameters for 30 days at 1 minute interval)		Up to 17 parameters with configurable interval & duration (e.g. 17 parameters for 30 days at 1 minute interval)
Customizable Data Logs	●		●
Communication			
Protocol (Interface)	Modbus RTU / ASCII (RS-485)		Modbus RTU / ASCII (RS-485)
Mechanical Characteristics			
IP Rating - Meter Body	IP20		IP20
Dimensions (W x H x D, mm)	130 x 90 x 65.8		126 x 90 x 67.4
Weight (g)	600		600
Environmental Characteristics			
Operating Temperature	-30 ~ +70°C		-20 ~ +60°C
Storage Temperature	-40 ~ +80°C		-30 ~ +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		CE / RCM
Accuracy	IEC 62053-22		CMA

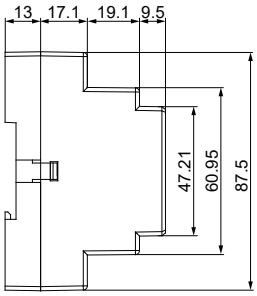
Model	DPM-DA530	DPM-DA510	DPM-D510
Measurement Accuracy			
Current	± 0.5%		± 0.5%
Voltage	± 0.5%		± 0.5%
Active Energy	± 0.5%		IEC 62053-22 Class 0.5S
Reactive Energy	± 2%		± 2%
Apparent Energy	± 2%		± 2%
Active Power	± 0.5%		± 0.5%
Reactive Power	± 2%		± 2%
Apparent Power	± 2%		± 2%
Power Factor	± 0.5%		± 0.5%
Frequency	± 0.5%		± 1%
Input Characteristics			
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W		1P2W, 1P3W, 3P3W, 3P4W
Voltage	35 ~ 600 V_{AC} (L-L) 20 ~ 350 V_{AC} (L-N)		35 ~ 690 V_{AC} (L-L) 20 ~ 400 V_{AC} (L-N)
Current	1 A / 5 A		1 A / 5 A
Frequency	45 ~ 65 Hz		50 / 60 Hz
Control Power	AC: 100 ~ 240 V (Max.Power Consumption 3 W); DC: 100 ~ 250 V		AC: 100 ~ 240 V (Max.Power Consumption 4.6 W)
Digital Output			
Max Load Voltage	40 V_{DC}		
Max Load Current	50 mA		
Frequency for Digital Output	1 kHz max		
Pulse Width for Digital Output	50% duty cycle		
Isolation	2.5 kV rms		
Data Record			
Max. / Min Log	●		
Alarm Status & Timestamp	●		
Alarm Counting	●		
Alarm History Record	16		
Data Logging	Up to 50 parameters with configurable interval & duration (e.g. 7 parameters for 30 days at 1 minute interval)		
Customizable Data Logs	●		
Communication			
Protocol (Interface)	Modbus RTU (RS-485)		Modbus RTU (RS-485)
Mechanical Characteristics			
IP Rating - Meter Body	IP20		IP20
Dimensions (W x H x D, mm)	72 x 87.5 x 58.7		90 x 90 x 66.7
Weight (g)	195		350
Environmental Characteristics			
Operating Temperature	0 ~ +60°C		-20 ~ +60°C
Storage Temperature	-10 ~ +70°C		-30 ~ +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	CE		UL / CE
Accuracy			IEC 62053-22

Dimensions

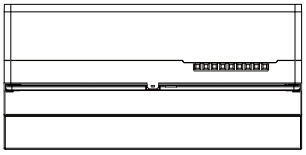
DPM-DA530
DPM-DA510

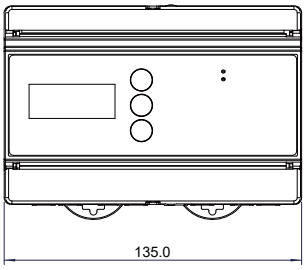


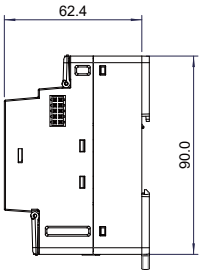




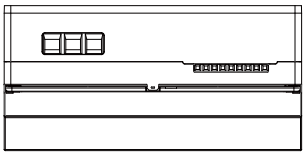
DPM-D532I

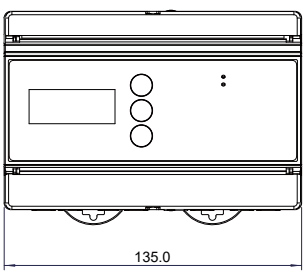


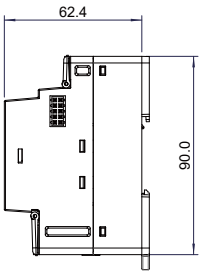




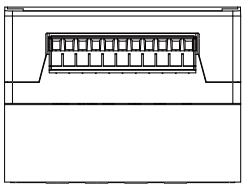
DPM-D533I

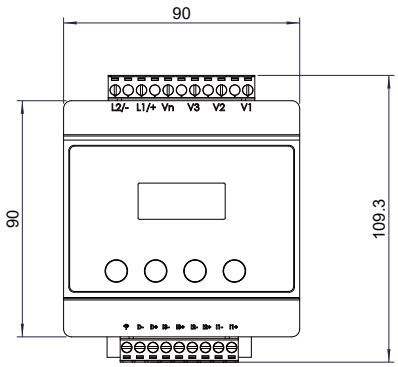


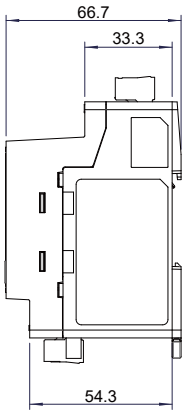




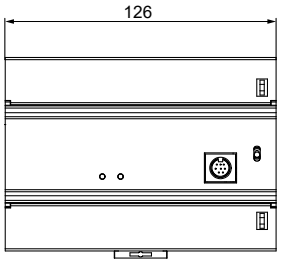
DPM-D510

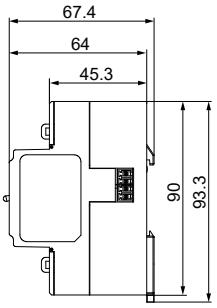






DPM-D520I





Multi-loop Type
DPM-M Series

- Multiple and selective circuit monitoring reduces the use of power meters in large-scale areas
- Suitable for applications with lots of power circuits to save cost
- AC / DC measurement

Applications

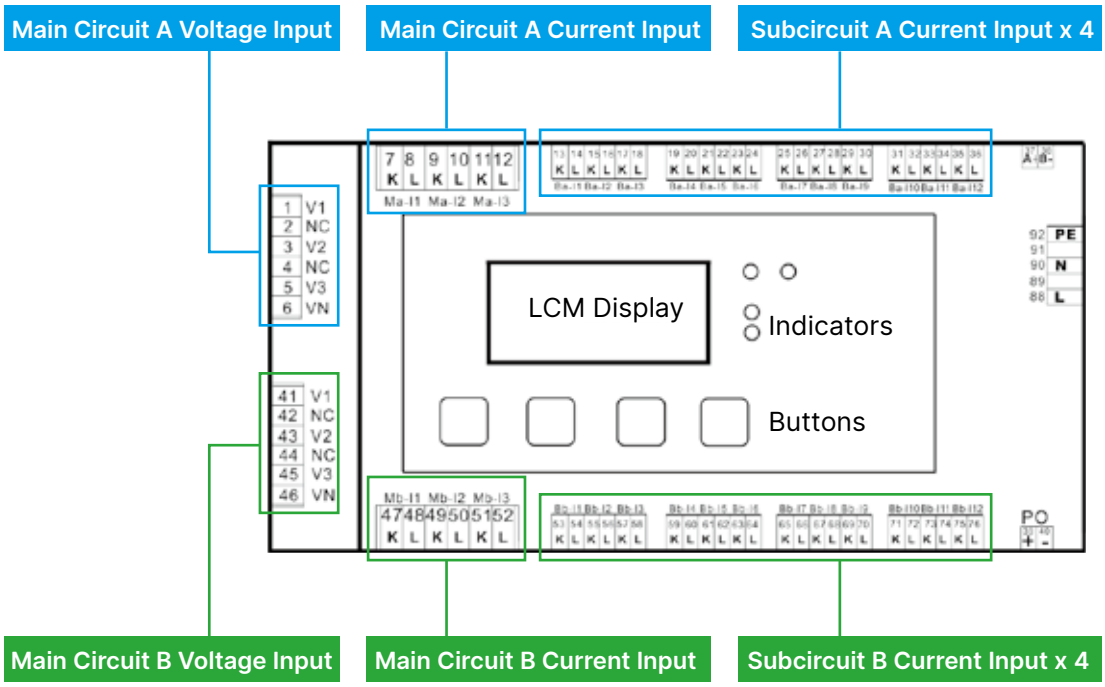
Shopping mall | Dormitory | Telecommunication System

Features

Scalable Multi-Loop Configuration (DPM-MA3222)

- Dual main circuits with isolation for connection to different power systems
- Each main circuit connects 4 subcircuits; configures a total of 8 circuits (three-phase) or 24 circuits (single-phase)
- Subcircuit can be set to three-phase, single-phase, or three-phase & single-phase modes

Multi-loop
AC Power Meter
DPM-MA3222



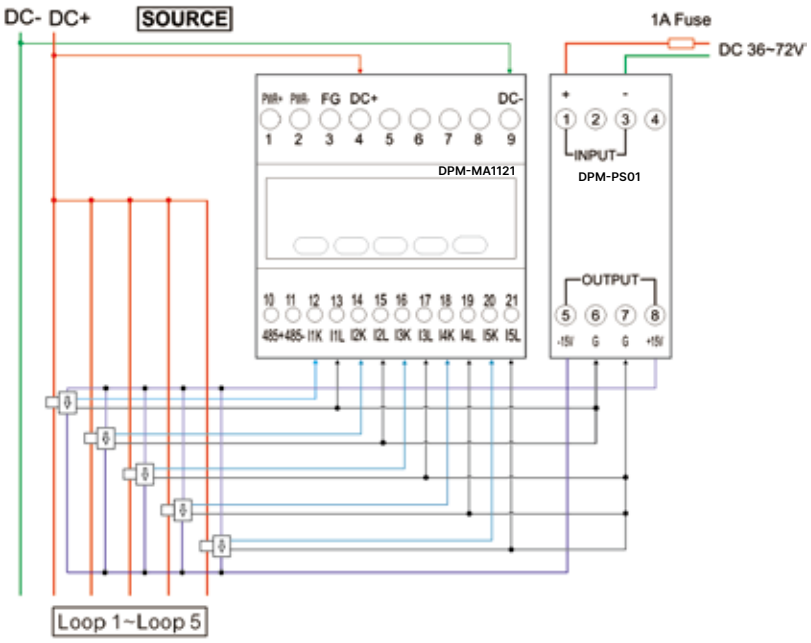
I/O Configuration (DPM-MA3222)

- Various I/O types for control and integration with peripheral devices

I/O Type	Qty.	Functions
Relay Output (RO)	**4**	• 5 A / 250 VAC, 5 A / 30 VDC • Alarm linkage: Hi / Lo / Hi hold / Lo hold
Digital Input (DI)	**2**	• Demand calculation trigger / stop • Record clearing: demand, max. demand, energy, max. / min. value • Relay homing
Pulse Output (PO)	**1**	• 30 VDC, 30 mA • Active / Reactive power output of any circuit

Multi-Loop DC Measurement (DPM-MA1121)

- Supports max. 5 DC circuits
- Suitable for telecommunication, green energy, energy storage applications
- Dedicated power supply for Hall sensor (optional)



Multi-loop DC Power Meter
DPM-MA1121

Hall Current Transformer (CT) Power Supply
DPM-PS01

- Input voltage: 36 ~ 72 VDC
- Output voltage: ± 15VDC
- Output current: ± 100 mA

DPM-M Series Information

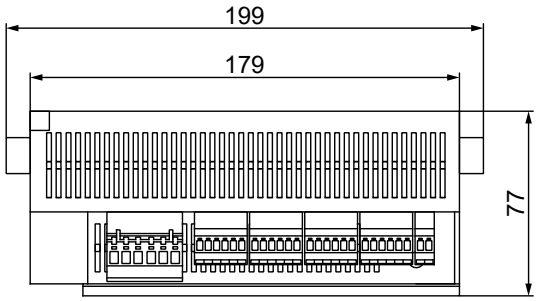
Model	DPM-MA3222	DPM-MA1121
Product Appearance		
Accuracy Class		
Active Energy	0.5%	0.5%
Loop Number		
3-Phase Measurement	8	
Single-Phase Measurement	24	5
Instantaneous Measurement		
Current	●	●
Voltage	●	●
Frequency	●	
Active Power	●	●
Reactive and Apparent Power	●	
Power Factor	●	
Active Energy	●	●
Reactive and Apparent Energy	●	
Demand Value		
Current	●	
Power	●	
Calculation Mode	Sliding / Fixed 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	48	
Data Logs	●	●
User-Defined Modbus Address	80	20
I/O		
Digital Input	2	
Relay	4	
Pulse Output	1	
Communication		
RS-485	●	●
Modbus	RTU	RTU

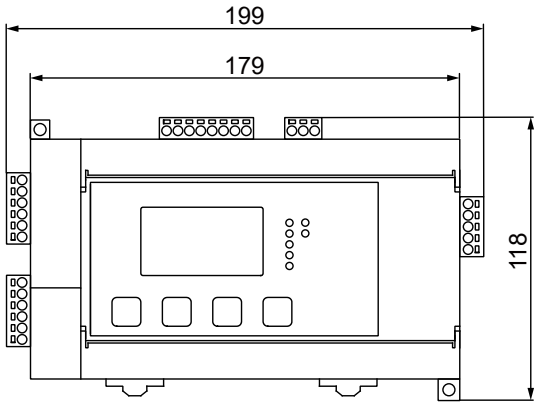
Technical Specifications

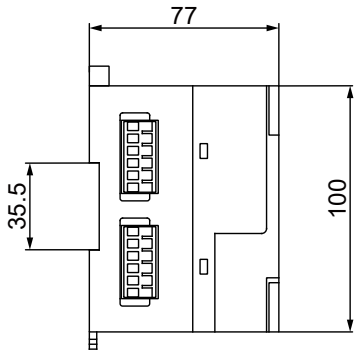
Model	DPM-MA3222	DPM-MA1121
Measurement Accuracy		
Current	± 0.5%	± 0.5%
Voltage	± 0.5%	± 0.5%
Active Energy	± 0.5%	± 0.5%
Reactive Energy	± 2%	N/A
Apparent Energy	± 2%	N/A
Active Power	± 0.5%	± 0.5%
Reactive Power	± 2%	N/A
Apparent Power	± 2%	N/A
Power Factor	± 0.5%	N/A
Frequency	± 0.5%	N/A
Input Characteristics		
Measuring System Type	1P2W, 1P3W, 3P3W, 3P4W	1P2W
Voltage	35 ~ 600 V_{AC} (L-L) 20 ~ 400 V_{AC} (L-N)	≤ 100 V_{DC}
Current	Main: 5 A Subcircuit: 333 mV	± 4 V_{DC} (Hall CT)
Frequency	45 ~ 65 Hz	
Control Power	AC: 100 ~ 240 V (Max. Power Consumption 15 W) DC: 100 ~ 250 V	DC: 20 ~ 56 V (Max. Power Consumption 4 W)
Digital Input		
On Voltage	0 ~ 1 V_{DC}	
Off Voltage	10 ~ 12 V_{DC}	
Input Current	≤ 3.5 mA	
Input Resistance	1M Ω	
Maximum Frequency	50 Hz	
Isolation	3.5 kV rms	
Relay		
Max Output Frequency	10 Hz	
Switching Current	250 V_{AC} at 5.0 Amps, resistive 30 V_{DC} at 5.0 Amps, resistive	
Isolation	2.5 kV rms	
Pulse Output		
Max Load Voltage	30 V_{DC}	
Max Load Current	30 mA	
Frequency for Digital Output	40 Hz max	
Pulse width for Digital Output	50% duty cycle	
Isolation	2.5 kV rms	
Data Record		
Max./Min. Log	●	
Data Logging	Up to 86 parameters with configurable interval & duration (e.g. 40 parameters for 7 days at 1 minute interval)	Up to 21 parameters with configurable interval & duration (e.g. 20 parameters for 6 days at 1 minute interval)
Customizable Data Logs	●	●
Communication		
Protocol (Interface)	Modbus RTU (RS-485)	Modbus RTU (RS-485)
Mechanical Characteristics		
IP Rating - Meter Body	IP20	
Dimensions (W x H x D, mm)	199 x 118 x 77	54 x 81 x 65.5
Weight (g)	750	185
Environmental Characteristics		
Operating Temperature	0 ~ +60˚C	
Storage Temperature	-10 ~ +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	CE	

Dimensions

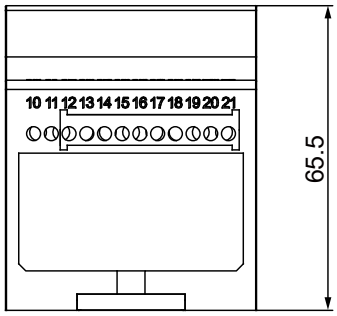
DPM-MA3222

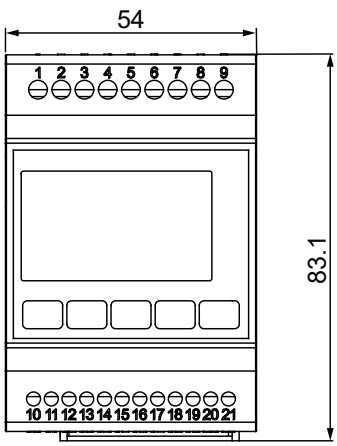


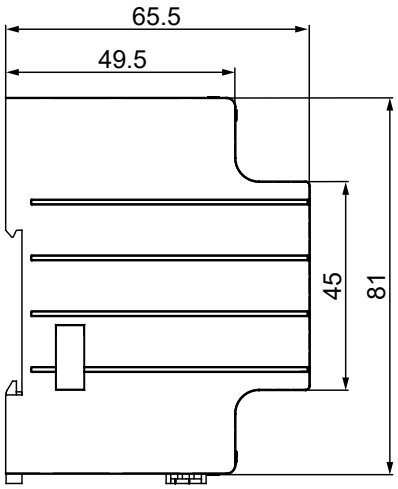




DPM-MA1121







Current Transformer (CT)

- Accessories for current measurement, suitable for all types of power meters
- Proportionally transforms high circuit current into low current (or low voltage) signals for current measurement

Applications

Matches with all types of power meters to transform high current into measurable low current (voltage)

Product Information (Refer to Ordering Information for more details)

Type	Model	Features
Solid Core CT 	**DCT-MC**	• Installation through the CT core • Applicable to new system configuration
Compact Split Core CT 	**DCT-CS**	• Compact size, easy to install/dismantle by opening the split top • Suitable for various applications
	DCT-MV	
Split Core CT 	**DCT-S**	• Easy to install/dismantle by opening the split top • Complies with safety certifications

Ordering Information

Panel Mount Type Power Meter

Model		Functions (Refer to Technical Specs. for details)	Front Panel Dimensions (mm)	Current Measurement	I/O	Communication	Certifications
Advanced Type	DPM-C530	• Electrical parameters measurement (Active energy accuracy Class 0.5S) • Multi-tariff energymeasurement • Demand calculation • Data recording • Harmonics measurement • Multi-laguage display	96 x 96	Through external CT (secondary side): 1 A / 5 A		RS-485 (Modbus / BACNet MS / TP)	CE / UL / RCM
	DPM-C530E					Ethernet x 2 (Modbus)	CE / UL
	DPM-C532				4DI / 2DO	RS-485 (Modbus / BACNet MS / TP)	
Standard Type	DPM-C520	• Electrical parameters measurement (Active energy accuracy 0.5%) • Harmonics measurement	96 x 96			RS-485 (Modbus)	
	DPM-C520W					Wifi (802.11 b/g/n)	
	DPM-C320		72 x 72			RS-485 (Modbus)	
	DPM-C501L	• Electrical parameters measurement (Active energy accuracy 0.5%) • Harmonics measurement • Data recording (C502 only)	96 x 96		4DI / 2RO		
	DPM-C502						
Basic Type	DPM-C510	• Electrical parameters measurement (Active energy accuracy 0.5%)	96 x 96				CE / UL
	DPM-C510E					Ethernet (Modbus)	

DIN Rail Mount Type Power Meter

Model		Functions (Refer to Technical Specs. for details)	Current Measurement	I/O	Communication	Certifications
Advanced Type	DPM-D532I	• Electrical parameters measurement (Active energy accuracy 0.5%) • Multi-tariff power measurement • Demand value calculation • Data recording • Harmonics measurement • Control power: 12 ~ 60 V_{DC} (D533I only)	Direct measurement: 63A	2DI / 2DO	RS-485 (Modbus)	CE / UL
	DPM-D533I					
	DPM-D520I	• Electrical parameters measurement (Active energy accuracy 0.5%) • Demand value calculation • Data recording • Harmonics measurement				CE
	DPM-DA530	• Electrical parameters measurement (Active energy accuracy 0.5%) • Multi-tariff power measurement • Demand value calculation • Data recording • Harmonics measurement	Through external CT (secondary side): 1 A / 5 A	1DO		
Basic Type	DPM-DA510	• Electrical parameters measurement (Active energy accuracy 0.5%)				
	DPM-D510	• Electrical parameters measurement (Active energy accuracy Class 0.5S)				CE / UL

Multi-Loop Type Power Meter

Model		Functions (Refer to Technical Specs. for details)	Current Measurement	I/O	Communication	Certifications
AC Meas.	DPM-MA3222	• Electrical parameters measurement (Active energy accuracy 0.5%) • Circuit qty.: 8 (three-phase) / 24 (single-phase) • Data recording • Harmonics measurement	Through external CT • Main circuit: 5 A (secondary side) • Subcircuit: 333 mV (secondary side)	2DI 4RO 1PO	RS-485 (Modbus)	CE
DC Meas.	DPM-MA1121	• Electrical parameters measurement (Active energy accuracy 0.5%) • Circuit qty.: 5 • Data recording	Through Hall Sensor			

Solid Core CT

Model	Certification	Primary Current	Secondary Current	Max. Load	Measurement Accuracy (PF=1)	Dimensions (Unit: mm)
DCT-MC010-5	-	100 A	5 A	1.5 VA	1%	Outer: 80 x 60 x 38 Inner: 20 x 30.5
DCT-MC020-5	-	200 A	5 A	3.75 VA	0.5%	
DCT-MC030-5	-	300 A	5 A	5 VA	0.5%	Outer: 98 x 74.5 x 43 Inner: 42 x 42
DCT-MC040-5	-	400 A	5 A	7.5 VA	0.5%	
DCT-MC050-5	-	500 A	5 A	5 VA	0.5%	Outer: 127 x 103 x 45 Inner: 51 x 61
DCT-MC060-5	-	600 A	5 A	10 VA	0.5%	

Compact Split Core CT

Model	Certification	Primary Current	Secondary Current	Wiring Length	Measurement Accuracy (PF=1)	Dimensions (Unit: mm)
DCT-CS010-5	-	100 A	5 A	1,000 mm	1%	Outer: 66.8 x 49.8 x 34.2 Inner: 23.8 x 25.2
DCT-CS020-5	-	200 A	5 A	1,000 mm	1%	
DCT-CS030-5	-	300 A	5 A	1,000 mm	1%	
DCT-CS040-5	-	400 A	5 A	1,000 mm	1%	Outer: 85 x 69 x 42.5 Inner: 36.5 x 36.5
DCT-CS050-5	-	500 A	5 A	1,000 mm	1%	
DCT-CS060-5	-	600 A	5 A	1,000 mm	1%	
DCT-MV005-3	CE	5 A	333 mV	1,200 mm	1%	Outer: 30.8 x 28.8 x 42.8 Inner: Φ10.2
DCT-MV060-3	CE	60 A		1,200 mm	0.5%	Outer: 30.3 x 33.9 x 49 Inner: Φ16.1
DCT-MV100-3	CE	100 A		1,200 mm	0.5%	
DCT-MV200-3	CE	200 A		1,200 mm	0.5%	Outer: 53.3 x 40.2 x 70 Inner: Φ24.1
DCT-MV300-3	CE	300 A		1,200 mm	0.5%	Outer: 67 x 42.8 x 83 Inner: Φ24.1
DCT-MV400-3	CE	400 A		1,200 mm	0.5%	

Split Core CT

Model	Certification	Primary Current	Secondary Current	Max. Load	Measurement Accuracy (PF=1)	Dimensions (Unit: mm)
DCT-S201B	UL	100 A	5 A	1.0 VA	1.0%	Outer: 90 x 40 x 110 Inner: 30 x 20
DCT-S211B	UL	200 A	5 A	1.0 VA	0.5%	
DCT-S221B	UL	300 A	5 A	1.5 VA	0.5%	
DCT-S231B	UL	400 A	5 A	1.5 VA	0.5%	Outer: 115 x 37 x 159 Inner: 80 x 50
DCT-S241B	UL	500 A	5 A	2.5 VA	0.5%	
DCT-S251B	UL	600 A	5 A	2.5 VA	0.5%	
DCT-S261B	UL	750 A	5 A	2.5 VA	0.5%	
DCT-S2C1B	UL	800 A	5 A	3.75 VA	0.5%	
DCT-S271B	UL	1,000 A	5 A	5 VA	0.5%	
DCT-S301C	CE	100 A	5A	1.5VA	1.0%	Outer: 89 x 40 x 115 Inner: 32 x 21
DCT-S211C	CE	200 A	5A	1.0VA	0.5%	
DCT-S221C	CE	300 A	5A	1.5 VA	0.5%	
DCT-S231C	CE	400 A	5A	2.5 VA	0.5%	
DCT-S241C	CE	500 A	5A	2.5 VA	0.5%	Outer: 116 x 51 x 145 Inner: 80 x 50
DCT-S251C	CE	600 A	5A	2.5 VA	0.5%	
DCT-S261C	CE	750 A	5A	2.5 VA	0.5%	
DCT-S271C	CE	1,000 A	5A	5 VA	0.5%	
DCT-S281C	CE	1,500 A	5A	7.5 VA	0.5%	Outer: 146 x 51.6 x 196 Inner: 80 x 122
DCT-S291C	CE	2,000 A	5A	10 VA	0.5%	Outer: 186 x 67 x 250 Inner: 81 x 160.5
DCT-S2A1C	CE	2,500 A	5A	15 VA	0.5%	
DCT-S2B1C	CE	3,000 A	5A	20 VA	0.5%	

Hall Sensor Power Supply

Model	Input Voltage		Output		Ripple & Noise (mVp-p, Typ./Max.)	Efficiency (%, @ Full load)	Dimensions (mm)
	Normal (V_{DC}, Range)	Max. (V_{DC})	Voltage (V_{DC})	Current (mA, Max./Min.)			
DPM-PS01	48 (36 ~ 72)	80	± 15	± 100 / ± 5	40 / 75	80	65.5 x 26 x 81

Smarter. Greener. Together.

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