ADTEK

Smart MiT, Easy Link

Power Meter Family Product Overview

Company Introduction

Established in 1990 and headquartered in New Taipei City, Taiwan, ADTEK is a leading Taiwanese meter manufacturer, owning rich experience nearly up to 30 years.

We provide wide ranges of product lines as a specialist from entry level to high level, to meet every different market requirements in the fields of Power Management and Industrial Automation. With fast-paced research & development and production ability, we offer multiple customization services.

We have rich successful cases and well-known brand awareness in many applications, such as of power facilities, continuous production, infrastructure and commercial building. As the biggest Taiwanese meter exporter, our oversea clients are all over 35 countries.

Looking to the future, ADTEK is your best partner for IIoT and sustainable energy saving solution.

Company Evolution

1990

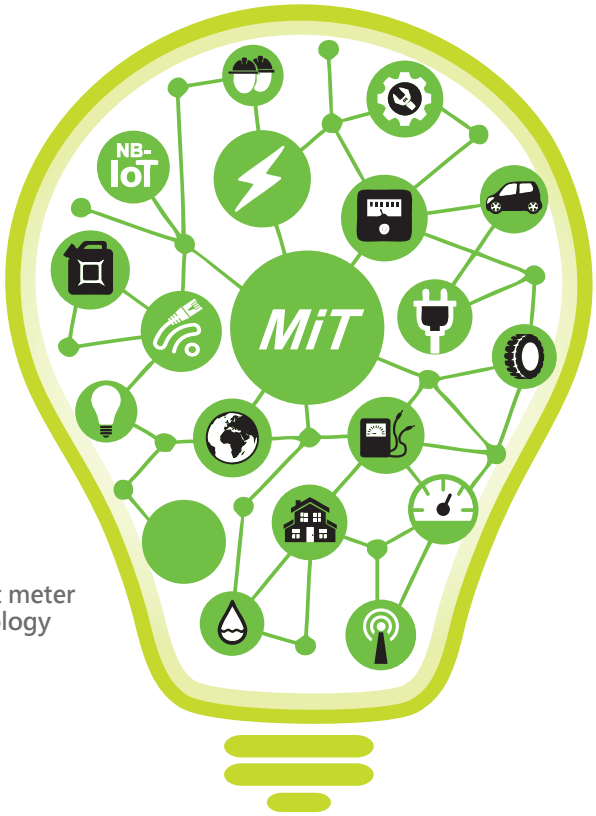
Established on July 30th.

2001

Found Chang Shuan Technology Co.,Ltd to expand market coverage in China.

2005

Formally complied with European Electrical Standards (CE).



2018

Aim to be a smart meter intelligent technology solution provider.

2013

Purchased R & D office and expanded headquarter area up to 580 square meter.

2017

Launched 1st self-developed innovative strategic product: AEM-DRA multi-circuit power meter.

Product Overview

Communication Interface

NB-IoT WiFi
Ethernet

AD-GW NEW
ADPower Series Gateway
(Modbus to Ethernet or WiFi)

AD300-Plus NEW
IoT-Gateway

AD520 NEW
IoT-Gateway

Energy management software

AD-SeeS NEW
IoT Platform
with EMS software, gateway and meters.

Signal Processing & Display

Power Meter - Panel

Advanced

CPM-80
Multifunction Power Analyzer

CPM-70
Multifunction Power Analyzer

Universal

CPM-20
Multifunction Power Meter

CPM-12
Multifunction Power Meter

CPM-10
Economic Multifunction Power Meter

Economic

CM1/ CM2/ CM3-VA
4 Digitals Voltage/Current Meter

CS1/ CS2/ CS3-VA
Digital Voltage/Current Meter

Power Meter - Panel - DC Type

5 Single-Phase Loops / 1 (Main) Circuit

AEM-DD
Multi-Loop DC power meter

VAW
Multifunction DC Power Meter

Process Meter - Panel

CM1 / CM2-PR
Process Meter

CS1/ CS2/ CS3
Industrial Process Meter
(Spin rate, Temperature, Weight.....)

Power Meter - Din Rail

8 Three-Phase Loops + 2 Main Circuits

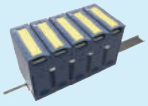
AEM-DRA
Multi-circuit Power Meter

5 Single-Phase Loops / 1 (Main) Circuit

AEM-DR
Multi-Loop Power Meter

1 Loop for Single -Phase or Three Phases

CPM-12D NEW
Multifunction Power Meter



ADP-PM-A NEW
Multi-circuit Power Meter

Signal Transduce & Convert

CPT
Multifunction Power Transducer

CA / CV
AC Current/ Voltage Transducer

CW / CQ
AC Watt / Var Transducer

AT
Converter/Isolator

MT
Industrial Signal Converter
(Frequency, AC/DC Signal…etc..)

ST
Multifunction Converter

Signal Measuring & Sensing

US-CTV
Split Type Current Transformer (Folder snap)

US-CTS
Split Core Current Transformer

UA-SHT
DC Current Shunt

WTM-100
Wireless Temperature Transmitter & Meter

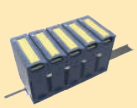
TH
Temperature Sensor

AQW
Wireless Air Quality Sensors

HTO
CO / CO2 / Temperature & Humidity Transmitter

PS
Pressure Transmitter

UC1 NEW
Universal Transmitter



ADPower NEW
Remote I/O Module

Four major application fields:

1. Continuous production Industry

Example : Machinery Production Line

Production Environment-
Air Conditioning / Air Quality Monitoring

HTO Humidity & Temperature Transmitter
AQW Wireless Air Quality Sensors

Production Management-
PID Controller

PID Control 4-Digits PID controller

TH Temperature sensor

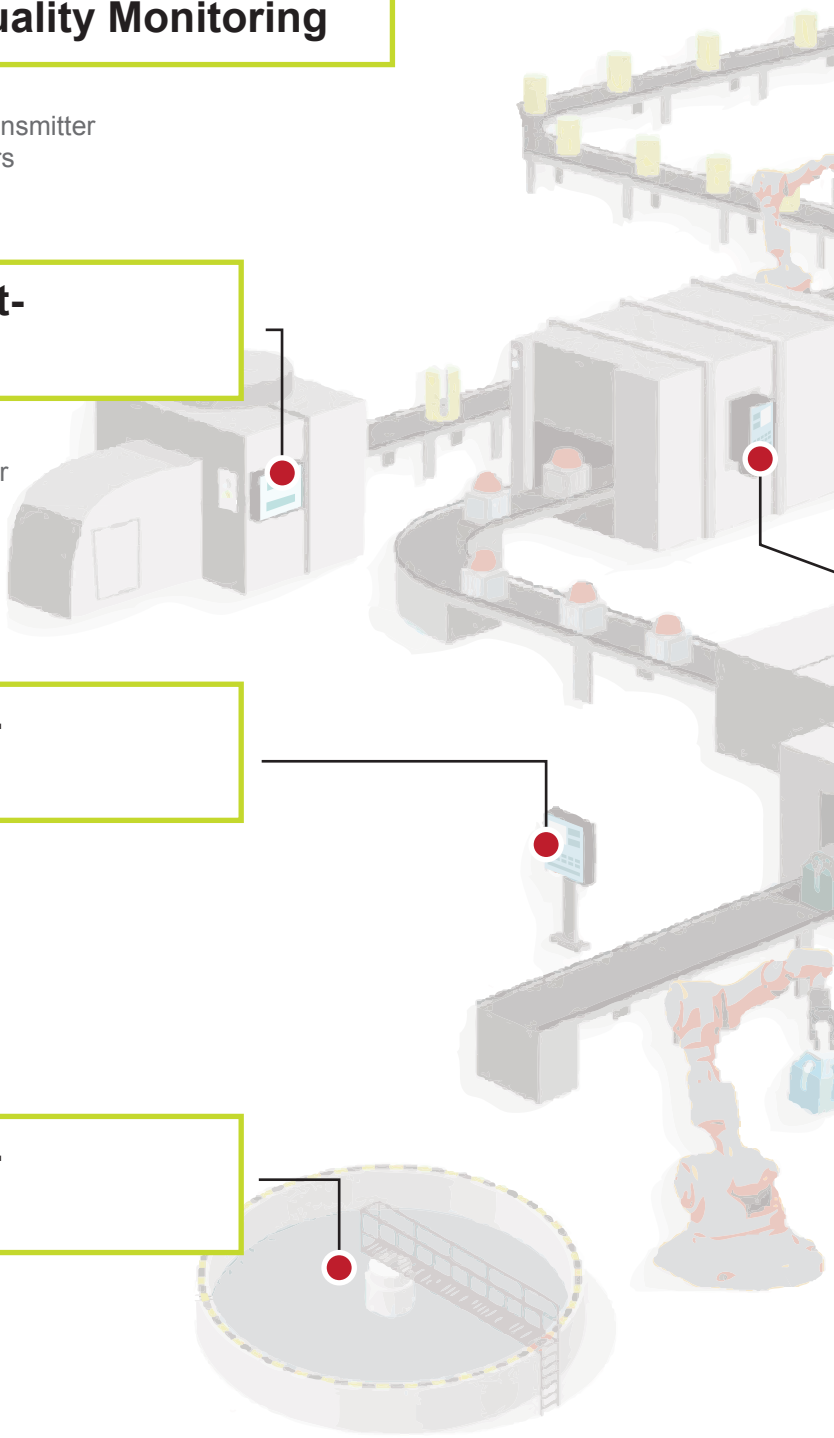
Production Management-
Weight Monitoring

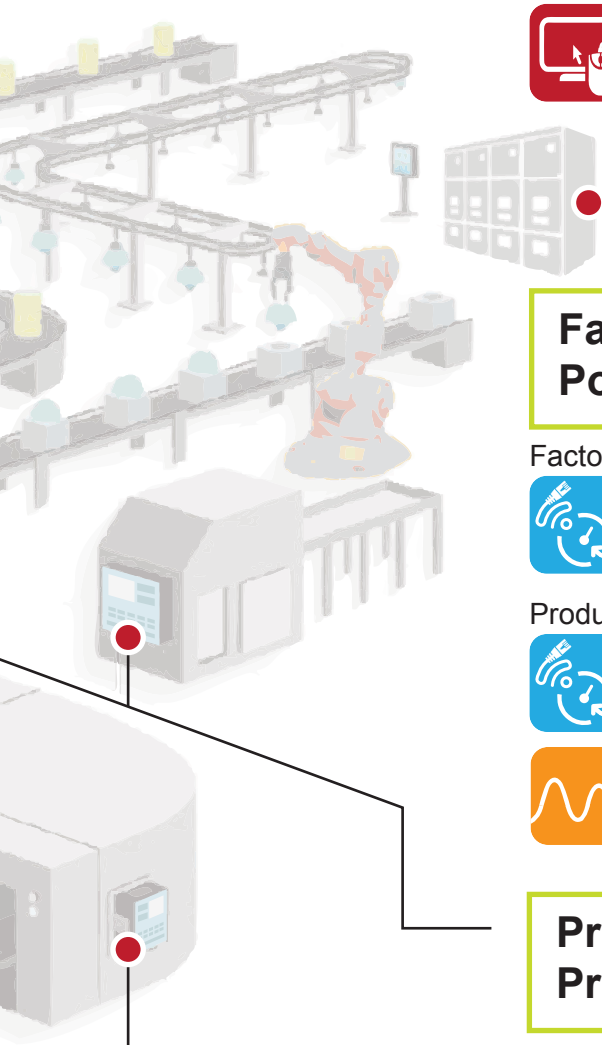
A6-SG Weight controller

LCA/CB Weight sensor

Production Management-
Water Treatment

CS2-TM Multifunction Totalizer





EMS
(Energy Management Software)

AD-SeeS
IoT Platform
with EMS software, gateway and meters.

Factory Power Quality Monitoring & Power Management

Factory Power Quality monitoring

CPM-80 Multifunction Power Analyzer
CPM-70 Multifunction Power Analyzer

Production line-Power monitoring & energy saving

AEM-DRA Multi-Circuit Power Meter

CPT Multifunction Power Transducer

Production Management-
Process Control & Monitoring

CM1 Series Process Meter
Frequency meter, counter ..etc.

Device Status-
Motor Monitoring

CPM-10 Economic Multifunction Power Meter
MWH Digital Energy Meter
CS1 Digital Voltage / Current Meter
VAW Multifunction DC Power Meter

Four major application fields:

2. Power facilities

Wind Power Generation

Power Monitoring

CPM-10 Economic Multifunction Power Meter
CPM-12D Multifunction Power Meter

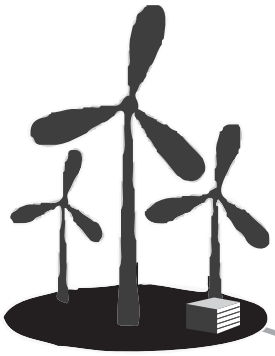
Frequency Management

CM1 Series Frequency Meter

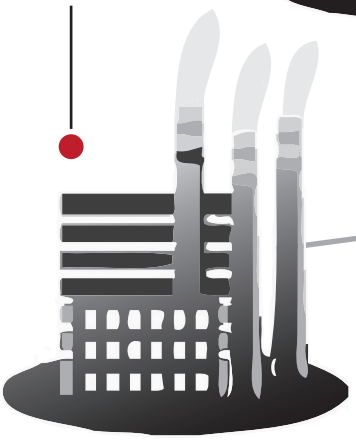
CPT Multifunction Power Transducer
CA / CV AC Current / Voltage Transducer

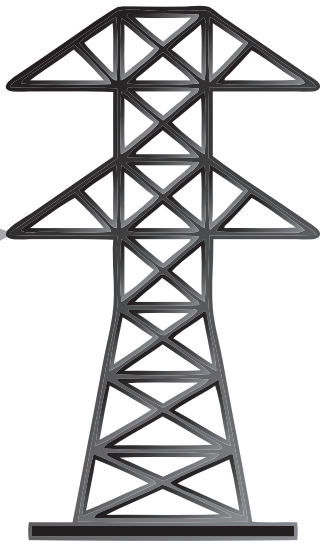
Equipment Temperature Detection

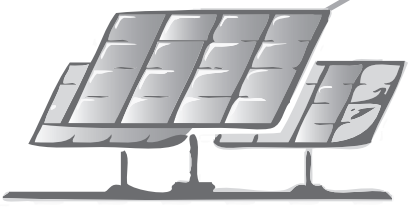
TH Temperature Sensor



Generator







Solar Power Generation

DC & AC Power Monitoring

CPM-10 Multifunction Power Meter
CPM-12D Multifunction Power Meter
VAW Multifunction DC Power Meter
AEM-DD Multi-Loop Power Meter (DC)

CPT Multifunction Power Transducer
CA / CV AC Current / Voltage Transducer

Substation

Power Quality monitoring

CPM-80 Multifunction Power Analyzer
CPM-70 Multifunction Power Analyzer

Panel Temperature Detection

WTM-100 Wireless Temperature Transmitter & Meter

CPT Multifunction Power Transducer
CA / CV AC Current / Voltage Transducer

High Voltage Switchboard

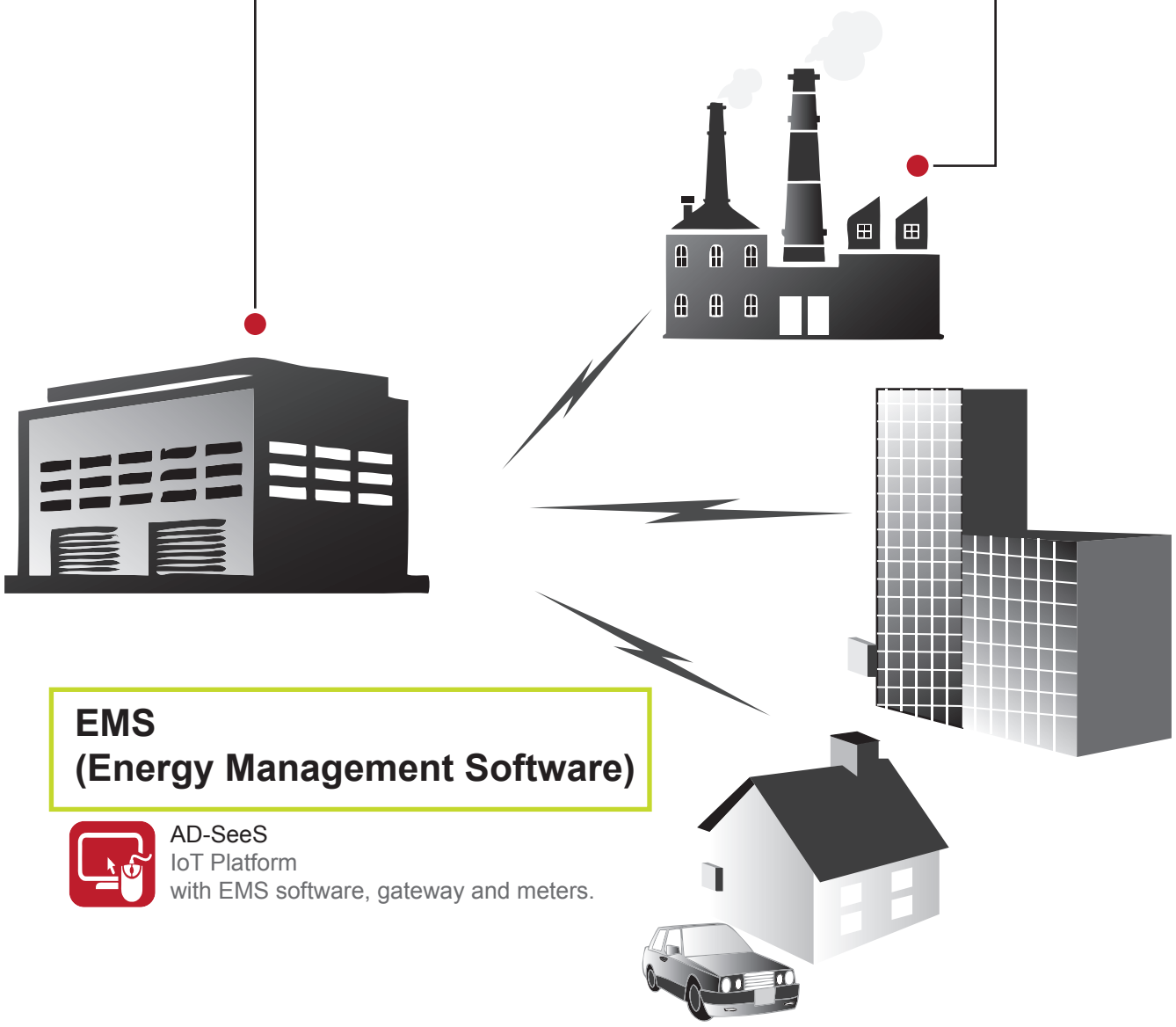
Factory Power Quality monitoring

CPM-80 Multifunction Power Analyzer
CPM-70 Multifunction Power Analyzer

Panel Temperature Detection

WTM-100 Wireless Temperature Transmitter & Meter

CPT Multifunction Power Transducer
CA / CV AC Current / Voltage Transducer



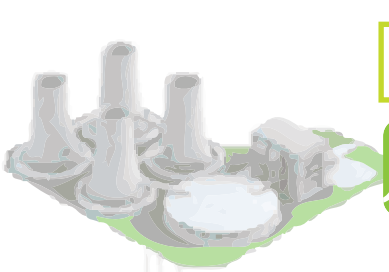
EMS (Energy Management Software)

AD-SeeS
IoT Platform
with EMS software, gateway and meters.

Four major application fields:

3. Infrastructure

Example : Airport



345KV/161KV/69KV

Air Quality Detection

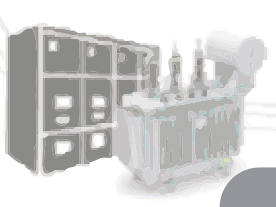
HTO Humidity & Temperature Transmitter
AQW Wireless Air Quality Sensors

Lighting Power Management

Billing of Power Consumption

AEM-DRA Multi-Circuit Power Meter (TOU)

CPM-12D Multifunction Power Meter (TOU)



22.8KV/11.4KV

Substation in Airport Area

Substation in Airport Area

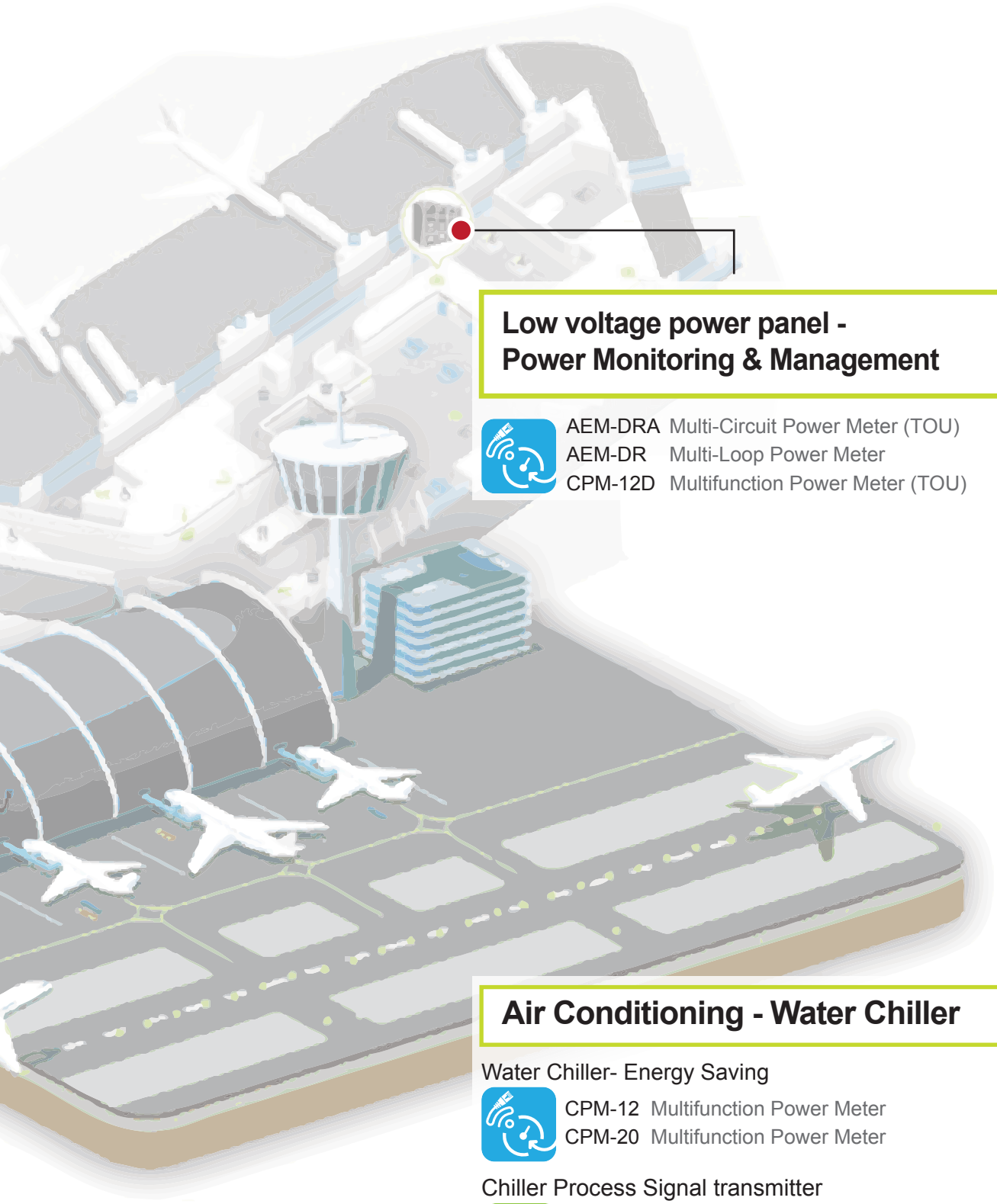
Power Quality monitoring

CPM-80 Multifunction Power Analyzer
CPM-70 Multifunction Power Analyzer

Panel Temperature Detection

WTM-100 Wireless Temperature Transmitter & Meter

CPT Multifunction Power Transducer
CA / CV AC Current / Voltage Transducer



Low voltage power panel - Power Monitoring & Management

AEM-DRA Multi-Circuit Power Meter (TOU)
AEM-DR Multi-Loop Power Meter
CPM-12D Multifunction Power Meter (TOU)

Air Conditioning - Water Chiller

Water Chiller- Energy Saving

CPM-12 Multifunction Power Meter
CPM-20 Multifunction Power Meter

Chiller Process Signal transmitter

TH Temperature Sensor
PS Pressure Transmitter

Four major application fields:

4. Commercial building

EMS
(Energy Management Software)

AD-SeeS
IoT Platform
with EMS software, gateway and meters.

Data Center- UPS/ Battery room

Data center power monitoring

CPM-80 Multifunction Power Analyzer
CPM-70 Multifunction Power Analyzer

UPS/ Battery room power monitoring

VAW Multifunction DC Power Meter

Multiple Rack power monitoring

AEM-DRA Multi-Circuit Power Meter

Data Center Environment Detection

HTO Humidity & Temperature Transmitter
AQW Wireless Air Quality Sensors

Shopping mall- Air Conditioning – Water Chiller

Water Chiller- Energy Saving

CPM-12 Multifunction Power Meter
CPM-20 Multifunction Power Meter

Chiller Process Signal transmitter

TH Temperature Sensor
PS Pressure Transmitter

Solar Power Station

DC & AC Power Monitoring

CPM-10 Multifunction Power Meter
CPM-12D Multifunction Power Meter
VAW Multifunction DC Power Meter
AEM-DD Multi-Loop Power Meter (DC)

CPT Multifunction Power Transducer
CA / CV AC Current / Voltage Transducer

Air Quality Detection

HTQ Humidity & Temperature Transmitter
AQW Wireless Air Quality Sensors

Lighting Power Management

Billing by Time-Of-Use function

AEM-DRA Multi-Circuit Power Meter (TOU)

CPM-12D Multifunction Power Meter (TOU)

Office Area

Shopping mall: Time of use (TOU) / Billing

AEM-DRA Multi-Circuit Power Meter (TOU)

CPM-12D Multifunction Power Meter (TOU)

Shopping Mall

Panel Mounting

Advanced

CPM-80 Series

Multifunction Power Analyzer

- High sampling rate: 256 points / cycle
- Energy accuracy: 0.2S (IEC62053-22:2003)
- True RMS Measurement
- Power Quality Event Record (Instantaneous Voltage Sag / Swell Event Time stamp)
- 3.5 "TFT LCD color screen and four quadrant display
- 1 Modbus Port as default
- Second communication port available (optional) : Ethernet or Modbus (Slave or Master)
- High individual harmonic measurement available (~63th)
- With phase angle, power demand, Time of Use (TOU), CO^2 emissions, electricity cost calculation
- Up to 48 kinds of alarm parameter measurement with data logging for analysis
- 4MB internal flash memory
- Up to 8 digital input, 4 relay output, 2 analog output, 2 pulse output.
- Easy to install with auto-wiring correction function
- FCC, CE, EMC, LVD certification, CMET (as UL) on-going

Application:

◎ For complex power system environment
◎ Factory automation applications
◎ Main panel, distribution panel measurement
◎ Long-hour data logging for power quality analysis

CPM-70 Series

Multifunction Power Analyzer

- Sampling rate: 128 points / cycle
- Energy Accuracy: 0.5S (IEC62053-22:2003)
- With individual harmonic measurement (2~31th)
- With power demand, TOU, CO^2 emissions
- Provide 34 kinds of alarm parameter measurement. Maximum / minimum value recording function
- Up to 4 digital input, 2 relay output, 1 digital output
- 1 Modbus Port as default
- 2MB internal flash memory
- Dielectric strength more than 2KV
- Easy to install with auto-wiring correction function
- FCC, CE, EMC, & LVD certification
- Mean time between failure (MTBF) reliability more than 60,000 hours

Application:

◎ Motor control panel / Power measurement
◎ Main panel, sub-panel, power parameter management
◎ Time of Use (TOU) function
◎ Power quality analysis

Target markets:

Infrastructure ★★★ Power facilities ★★ Commercial Buildings ★ Continuous production industry ★

Universal

CPM-20 Series

Multifunction Power Meter

- Sampling rate: 128 points / cycle
- Energy Accuracy: 0.5%
- With power demand, CO^2 emissions calculation
- Provide 33 kinds of alarm parameter measurement. Maximum / minimum value recording
- Up to 2 digital input, 2 digital output.
- 1 Modbus Port as default
- Dielectric strength more than 2KV
- FCC, CE, EMC, & LVD certification
- Mean time between failure (MTBF) reliability more than 60,000 hours

Application:

◎ Power system, sub-panel, power parameter measurement
◎ Electromechanical equipment electricity consumption monitoring
◎ Time of Use (TOU) calculation
◎ High CPI value

CPM-12 Series

Multifunction Power Meter

- Sampling rate: 128 points / cycle
- Energy Accuracy: 1%
- With total harmonic, import / export power measurement, CO^2 emissions calculation
- Provide 32 kinds of alarm parameter measurement. Maximum / minimum value recording
- Easy to install with auto-wiring correction
- Optional: 1 pulse output / 1 Modbus Port
- Dielectric strength more than 2KV
- FCC, CE, EMC, & LVD certification
- Mean time between failure (MTBF) reliability more than 60,000 hours

Application:

◎ Motor control panel / Power monitoring
◎ Power consumption monitoring and control
◎ Distribution panel system
◎ Smart Building Automation / Energy Management System

Ecomomic

CPM-10 Series

Ecomomic Multifunction Power Meter

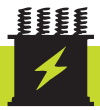
- Support balanced / unbalanced power system (3P3W, 3P4W, 1P2W, 1P3W)
- With unique dual-window display (10 digits + 4 digits)
- Energy Accuracy: 0.5%
- Provide 1 relays / 1 analog output
- Optional : 1 pulse output, 1 Modbus (RS485)
- Provide 25 alarm parameter measurement
- Compact size, comply to standard DIN size (96 * 48mm)
- CE, EMC, & LVD certification
- Mean time between failure (MTBF) reliability more than 60,000 hours

Application:

◎ Motor control panel / Power monitoring
◎ Power consumption monitoring and control
◎ Distribution panel system
◎ Smart Building Automation / Energy Management System
◎ Power test equipment

Target markets:

Infrastructure



Power Facilities

Commercial Buildings

Din Rail

AEM-DRA series

Multi - Circuit Power Meter

8 Three-Phase Loops +
2 Main Circuits

- Large display window, easy to install, suitable for standard din-rail mounting
- With power demand, CO^2 emissions calculation
- Provide individual harmonic measurement function (2nd ~ 31th)
- Provide 48 kinds of alarm parameter measurement. Maximum / minimum value recording
- Energy accuracy: 0.5%
- Support 2 individual main circuits, programmable mixture of wiring system (3P3W, 3P4W, 1P2W, 1P3W)
- Provide 8 three-phase or 24 single-phase loops measurement or mixture.
- Optional: 4 relay output, 2 digital input, 1 pulse output.
- 2MB internal flash memory
- 1 Modbus Port as default
- Second communication port available (Optional): 1 Ethernet (Modbus TCP) or 1 Modbus.
- Dielectric strength more than 2KV,
- FCC, CE, EMC, & LVD certification
- Mean Time Between Failure (MTBF) reliability more than 60,000 hours

Application:

◎ For suites, shopping malls, dorm electricity bills
◎ Hybrid power system power measurement
◎ Long-hour data logging for power quality analysis
◎ Main panel, distribution panel, power demand measurement
◎ Electromechanical equipment electricity consumption monitoring

AEM-DR series

Multi - Loop Power Meter

5 Single-Phase Loops
/ 1 (Main) Circuit

- Support 5 single-phase Loops power measurement (3P3W, 3P4W, 1P2W, 1P3W)
- Simple din-rail installation, compact size : 54 * 81mm (without Relay module)
- Provide 34 kinds of alarm parameter measurement. Maximum / minimum value recording
- Energy accuracy : 0.5%
- 1 Modbus Port as default
- Optional: 1 extensional module- 5 relay output
- By Request : 1 extensional module - WiFi or NB-IoT
- Dielectric strength more than 2KV,
- Mean Time Between Failure (MTBF) reliability more than 60,000 hours
- FCC, CE, EMC, & LVD Certification

Application:

◎ Suites, shopping malls, dorm electricity bills
◎ Main panel, distribution panel, power demand measurement
◎ Long-hour data logging for power quality analysis
◎ Electromechanical equipment electricity consumption monitoring
◎ Limited space

CPM-12D series

Multifunction Power Meter

- Sampling rate: 128 point/cycle
- Energy accuracy: 1.0%
- True RMS Measurement
- 2MB internal flash memory
- Provide 36 kinds of alarm parameter measurement
- Power demand, data logging, and Time-of-use (TOU) function, CO^2 emissions calculation.
- 1 Modbus Port as default
- Built-in 1 Pulse Output
- Dielectric strength more than 2 KV

Application:

◎ Energy management system
◎ Factory automation
◎ Intelligent power panel
◎ Industrial automation
◎ Power Grid automation
◎ Community power monitoring
◎ Intelligent green building

Target markets:

Commercial Buildings

Continuous production industry

DC Type

AEM-DD series

Multi-Loop Power Meter -DC

- Support 5 single-phase Loops DC power measurement
- Simple din-rail installation, compact size : 54 * 81mm (without relay module)
- Provide 11 kinds of parameter measurement, maximum / minimum value recording
- Energy accuracy: 0.5%
- 2 line 6-digits value display simultaneously
- 1MB internal flash memory
- 1 Modbus Port as default
- Optional: 1 extensional 5 relay output module
- Dielectric strength more than 2KV
- FCC, CE, EMC, & LVD certification
- Mean Time Between Failure (MTBF) reliability more than 60,000 hours

Application:

◎ Suitable for DC power system
◎ Multi-Loop DC power parameter measurement
◎ Electromechanical equipment electricity consumption monitoring
◎ DC power measurement system
◎ Upgrade or maintenance of old system
◎ Solar power, wind power system and energy storage / Measurement of DC parameters of the system

VAW Series

Multifuntion DC Power Meter

- Provide DC voltage, current, power parameter measurement and operation time calculation
- With a unique dual-window display (10 digits +5 digits)
- Energy Accuracy: 0.1%
- Provide bidirectional energy measurement
- Sampling rate : 15 points / second
- The reaction time is less than 100 milliseconds
- Optional : 4 relays output / 2 external control input / 1 analog output /1 Modbus (RS485 communication)
- Relay can set to multiple power parameters for alarm
- Dielectric strength more than 2KV
- EMC & LVD certification

Application:

◎ Solar & wind power system
◎ DC power measurement system
◎ Battery Energy Storage monitoring
◎ Measurement and testing equipment
◎ Portable 3c device

Target markets:

Modular

ADP-PM Series

Multi-Circiut Power Meter

- Sampling rate: 128 point/cycle
- Energy accuracy: 1.0%
- True RMS Measurement
- Modular design with Remote IO module in one rack.
- Up to 12 single phase or 4 three-phase circuit power input.
- Software programmable input. EEPROM auto-configuration.
- 2MB internal flash memory
- Provide 50 kinds of parameter measurement
- Power demand, data logging, and Time-of-use (TOU)
- 1 Modbus Port as default
- Built-in 1 Pulse Output
- Dielectric strength more than 2 KV

Application:

◎ Rental Building / House Apartment
◎ School Dormitory / Exhibition Booth
◎ Market Stalls
◎ Food Court / Movable House
◎ Distributed Electricity Measurement

Target markets:

	VAW series	CPM10	CPM series			CPM70 series			CPM80 series				
Model No.	VAW	-10	12A	-20	-21	-71	-72	-73	-81	-82	-83	-85	-87
Installation	Panel	Panel							Panel				
Present values													
Phase / Neutral current	--	■	■	■	■	■	■	■	■	■	■	■	■
Average voltage / Phase voltage /Line voltage	--	■	■	■	■	■	■	■	■	■	■	■	■
Frequency	--	■	■	■	■	■	■	■	■	■	■	■	■
Active / Reactive / Apparent power / Total power	■	■	■	■	■	■	■	■	■	■	■	■	■
Power Factor / Average Power Factor	--	■	■	■	■	■	■	■	■	■	■	■	■
Demand values													
Current demand	--	--	--	--	■	--	■	■	--	■	■	■	■
Present average	--	--	--	--	■	--	■	■	--	■	■	■	■
Active / Reactive / Apparent power demand	--	--	--	--	■	--	■	■	--	■	■	■	■
Max. Current / Power demand	--	--	--	--	■	--	■	■	--	■	■	■	■
Demand calculation methods(sliding / fixed)	--	--	--	--	■	--	■	■	--	■	■	■	■
Demand interval setting	--	--	--	--	■	--	■	■	--	■	■	■	■
Power quality measurements													
THD measurement	--	--	■	■	■	■	■	■	■	■	■	■	■
Total harmonic distortion (THD) voltage / current	--	--	■	■	■	■	■	■	■	■	■	■	■
Individual harmonic distortion (2nd ~ 31th)	--	--	--	--	--	--	■	■	--	■	■	■	■
Individual harmonic distortion (2nd ~ 63th)	--	--	--	--	--	--	--	--	--	■	■	■	■
Other measurements:													
Digital Input / Output	--	--	--	--	■	■	■	■	■	■	■	■	■
Run hours	■	--	■	--	--	■	■	■	■	■	■	■	■
Carbon emissions calculation (CO2)	--	--	■	■	■	■	■	■	■	■	■	■	■
Electricity rate (single rate)	--	--	--	■	■	■	■	■	■	■	■	■	■
Time of use (TOU) - 4 seasons, 8 tariff per day. Per year / up to 5 years	--	--	--	--	■	--	--	■	--	--	■	■	■
Measurement type(three-phase / single-phase)	--	■	■	■	■	■	■	■	■	■	■	■	■
Load type display (R / L / C)	--	--	--	■	■	■	■	■	■	■	■	■	■
Max. / Min. display and recording	■	--	--	--	■	■	■	■	■	■	■	■	■
Record													
Maximum / Minimum value (present value + definition of each phase)	■	--	--	--	■	■	■	■	■	■	■	■	■
Alarm records	■	--	--	■	■	■	■	■	■	■	■	■	■
Data storage	■	--	--	■	■	■	■	■	■	■	■	■	■
Firmware upgrade	--	--	--	--	--	■	■	■	■	■	■	■	■
alarm and event records	--	--	--	■	■	■	■	■	■	■	■	■	■
Modbus	--	--	■	■	■	■	■	■	■	■	■	■	■
Loading percentage indication	--	--	--	■	■	■	■	■	■	■	■	■	■
Simultaneous display of four kinds of data	■	--	■	■	■	■	■	■	■	■	■	■	■
Panel integration screen	■	■	■	■	■	■	■	■	■	■	■	■	■
Auto-Wiring Correction	--	--	■	--	--	■	■	■	■	■	■	■	■

	AEM series			CPM series	ADP series
Model No.	- DR	- DRA	- DD	- 12D	ADP-PM-A
Installation	Din - Rail				
Present values					
Phase / Neutral current	■	■	--	■	■
Average voltage / Phase voltage /Line voltage	■	■	--	■	■
Frequency	■	■	--	■	■
Active / Reactive / Apparent power / Total power	■	■	■	■	■
Power Factor / Average Power Factor	■	■	--	■	■
Demand values					
Current demand	--	■	--	■	■
Present average	--	■	--	■	■
Active / Reactive / Apparent power demand	--	■	--	■	■
Max. Current / Power demand	--	■	--	■	■
Demand calculation methods(sliding / fixed)	--	■	--	■	■
Demand interval setting	--	■	--	■	■
Power quality measurements					
THD measurement	--	■	--	■	■
Total harmonic distortion (THD) voltage / current	--	■	--	■	■
Individual harmonic distortion (2nd ~ 31th)	--	■	--	--	--
Individual harmonic distortion (2nd ~ 63th)	--	--	--	--	--
Other measurements:					
Digital Input / Output	--	■	--	--	■ ※
Run hours	--	■	--	■	■
Carbon emissions calculation (CO2)	--	--	--	■	--
Electricity rate (single rate)	--	■	--	■	■
Time of use (TOU) - 4 seasons, 8 tariff per day. Per year / up to 5 years	--	■	--	■	■
Measurement type(three-phase / single-phase)	■	■	--	■	■
Load type display (R / L / C)	--	--	--	--	--
Max. / Min. display and recording	--	■	--	■	■
Record					
Maximum / Minimum value (present value + definition of each phase)	--	■	--	■	■
Alarm records	■	■	■	■	■
Data storage	■	■	■	■	■
Firmware upgrade	■	■	--	■	■
alarm and event records	--	■	--	■	■
Modbus	■	■	■	■	■
Loading percentage indication	■	■	--	■	--
Simultaneous display of four kinds of data	--	■	--	■	--
Panel integration screen	■	■	■	■	--
Auto-Wiring Correction	--	--	--	■	--

*With ADPower I/O Module

	VAW series	CPM10	CPM series			CPM70series		
Model Name	VAW	-10	-12A	-20	-21	-71	-72	-73
Measure Type	DC	AC						
Specifications / measurement parameters								
Input voltage (with external PT up to 500,000Vac)								
Input measurement range (Vac: L-N / Vdc)	0~600 Vdc	50~500 Vac	40~400 Vac			40~400 Vac		
Frequency (Hz)	--	45 ~ 65						
Current (A)	from 0~200.00 μA up to 0~10A	0~5A, 0~1A		0~5A (0~1A optional)		0~5A (0~1A optional)		
Resistance to current capacity	300% Rated	300% Rated	200% Rated			200% Rated		
Power consumption (VA)	<5	<12	<10			<10		
Aux. power supply								
Operation range (Product code**)	ADH , ADL , A	ADH , ADL	ADH			ADH , ADL		
Frequency	--	45 ~ 65						
Measurement accuracy								
Measurement Loop (single phase)	1	1	1	1		1		
Measuring Loop (three phase)	--	1	1	1		1		
Active / Reactive/ Apparent power	0.1%	0.5%	1%	0.5%		0.5%		
Current / phase	0.04%	0.2%	0.5%	0.25%		0.2%		
Voltage (L-N)	0.04%	0.2%	0.5%	0.25%		0.2%		
Frequency	--	0.2%	0.2%	0.1%		0.1%		
Active energy accuracy	0.1% Energy (Import)	0.5%	1%	0.5%		Class 0.5S		
Reactive energy accuracy	0.1% Energy (Export)	0.5%	1%	0.5%		Class 2.0		
Pulse Output								
Open collector output	--	1*	1	--	up to 2	1		
Maximum external voltage	--	30Vdc	40Vdc	--	40Vdc	30Vdc		
Maximum load current	--	30mA	50mA	--	50mA	30mA		
Isolation ability	2KVac							
Communication & Display								
RS-485 Modbus RTU,Jbus	2-wire, Baud Rate: 9600/19200/38400, Data Bits: 8, Parity: Even/ Odd /None, Stop Bits: 1 or 2							
The second Modbus port (Optional)	--	--	--	--	--	--	--	--
Ethernet (Optional)	--	--	--	--	--	--	--	--
BACnet (By request)	--	--	--	--	--	*	*	*
WiFi (By request)	--	--	--	--	--	--	--	--
NB-IoT (By request)	--	--	--	--	--	--	--	--
Isolation ability	2KVac							
Back Light	Red & Green	Red & Green	White light black					
Visual range (mm)	7.1	7.1	65x61			65x61		
Language	English							

Continue

**ADH : AC 85~264V / DC 100~300V

**ADL : AC / DC 20~56V

**A : AC 115/230V

* : Optional

CPM80 series					AEM series			CPM series	ADP series
-81	-82	-83	-85	-87	-DR	-DRA	-DD	- 12D	ADP-PM-A
AC							DC	AC	
Specifications / measurement parameters									
Input voltage (with external PT up to 500,000Vac)									
40~400 Vac					40~400 Vac		10~100 Vdc	40~400 Vac	≦ 400V
45 ~ 65					45 ~ 65		--	45~65	45~65
0~5A, 0~1A, 0~1A/5A					Please refer to datasheet			0~5A, 0~1A, 333mv	depends on external CT. ***
200% Rated					120% Rated			200% Rated	120% Rated
<15					<10	<15	<10	<5	<5
Aux. power supply									
ADH,ADL					ADH		ADH,ADL	ADH,ADL	DC 10~60V
45 ~ 65					45 ~ 65		--	45 ~ 65	45 ~ 65
Measurement accuracy									
1					5	up to 24	5	1	Up to 12
1					2	up to 8	--	1	Up to 4
0.2% / 1.0% / 0.5%					0.5%		0.3% of FS+ 0.3% of Rdg	1%	1.0%
0.1%					0.2%		0.2%	0.5%	0.5%
0.1%					0.2%		0.2%	0.5%	0.5%
0.2%					0.1%		--	0.1%	0.2%
Class 0.2S					0.5%		0.5%	1%	1.0%
Class 1.0					0.5%		--	1%	1.0%
Pulse Output									
up to 2					--	1	--	1	1
30Vdc					--	40Vdc	--	40Vdc	30Vdc
30mA					--	50mA	--	50mA	30mA
2KVac					2KVac			2KVac	1.5KV
Communication & Display									
2- wire, Baud Rate: 9600/19200/38400, Data Bits: 8, Parity: Even/ Odd/ None, Stop Bits: 1 or 2									UP to 115200bps
■	■	■	■	■	--	■	--	--	--
■	■	■	■	■	--	■	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	*	--	--	--	--
--	--	--	--	--	*	--	--	--	--
2KVac									1.5KV
3.5" TFT Color					White light black				--
320x240					39x21	128x64	39x21	320x240	--
English									
Continue									

***(CT Primary up to 9999A. Secondary: 333mv

**ADH : AC 85~264V / DC 100~300V

**ADL : AC / DC 20~56V

**A : AC 115/230V

	VAW series	CPM10	CPM series			CPM70 series		
Model Name	VAW	-10	-12A	-20	-21	-71	-72	-73
Alarm and control								
Alarm parameter type	5	25	--	33		33		
Response time (ms)	<100ms	<100ms	<100ms	<300ms		<300ms		
Internal Memory (MB)	--	--	--	2MB	2MB	2MB	2MB	2MB
Number of digital input	up to 2	--	--	--	up to 2	up to 4		
Number of digital output (pulse output)	--	1*	1	--	up to 2	1		
Number of analog output	1		--	--	--	--	--	--
Number of relay contact output	up to 4	up to 2	--	--	--	up to 2		
	for the detail of I/O, please refer to datasheet.							
Electromagnetic compatibility								
IEC 61000-3-2	--	■	■	--	--	■	■	■
IEC 61000-3-3	--	■	■	--	--	■	■	■
IEC61000-4-2~6	--	--	■	--	--	■	■	■
IEC 61000-4-8	--	--	■	--	--	■	■	■
IEC 61000-4-11	--	--	■	--	--	■	■	■
EN 55022 Class B	--	--	--	--	--	■	■	■
IEC 61010-1 Ed 3	■	■	■	■	■	■	■	■
IEC 62052-11	--	--	--	--	--	■	■	■
IEC 61557-12	--	--	--	--	--	■	■	■
EN 61326-1	■	■	■	■	■	■	■	■
FCC part 15	--	--	■	■	■	■	■	■
Physical parameters								
Cover protection level (IP)	52	52	50	50		50		
Size(mm)	96x48	96x48	96x96			96x96		
Depth(mm)	120	120	70			77		
Thickness(mm)	8	8	1~18			1~18		
Operating temperature (℃)	0~60	0~60	0~60			0~60		
Header temperature (℃)	0~60	0~60	0~60			0~60		
Panel temperature (-25 ℃ will reduce the efficiency)	-10~70	-10~70	-10~70			-25~50		
Storage temperature	-10~70	-10~70	-10~70			-10~70		
Humidity range (non-condensing)	20~95%	20~95%	5~95%			5~95%		
Weights(g)	350	350	<400	<400		<450		

* : Optional

CPM80 series					AEM series			CPM series	ADP series
-81	-82	-83	-85	-87	-DR	-DRA	-DD	- 12D	ADP-PM-A
Alarm and control									
48					34		11	36	
<500ms					<500ms			<500ms	<500ms
4MB	4MB	4MB	4MB	4MB	1MB	2MB	1MB	2MB	2MB
up to 8					--	up to 2	--	--	up to 32 **
up to 4					--	1	--	1	up to 32 **
up to 2					--	--	--	--	up to 8 **
up to 4					up to 5*	up to 4	up to 5*	--	up to 16 **
for the detail of I/O, please refer to datasheet.									
Electromagnetic compatibility									
■	■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■	■
■	■	■	■	■	--	--	■	■	■
■	■	■	■	■	--	--	--	■	■
■	■	■	■	■	--	--	■	■	■
■	■	■	■	■	--	--	--	--	--
■	■	■	■	■	■	■	■	■	■
■	■	■	■	■	--	--	--	--	--
■	■	■	■	■	--	--	--	--	--
■	■	■	■	■	■	■	■	--	■
■	■	■	■	■	■	■	■	■	■
Physical parameters									
50					50			20	20
96x96					54x81	199x118	54x81	72x91.5	48x130
101					65	77	65	58.7	120
1~18					<1			<1	<1
0~60					0~60			0~60	-25~70
0~60					0~60			0~60	-25~70
-25~50					-10~70			-10~70	--
-10~70					-10~70			-10~70	-30~75
5~95%					5~95%			3~95%	
<600					185	750	185	<400	

** with ADPower I/O Module

* with external I/O Module

ADTEK

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