



ADTEK

Smart MiT, Easy Link



Power Meter Family Product Overview



AD 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.

AD Company Evolution

1990

Established on July 30th.



2001

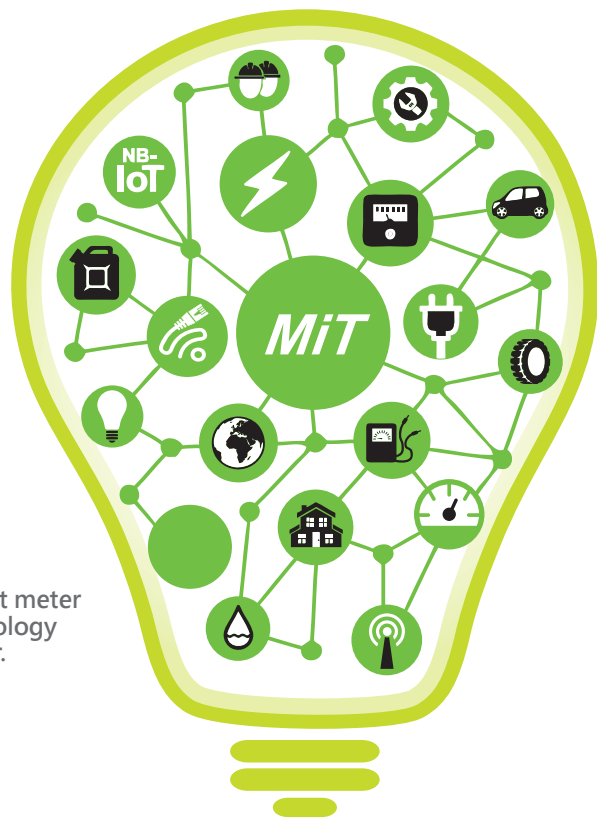
Found Chang Shuan Technology Co.,Ltd to expand market coverage in China.



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.



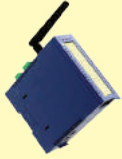
AD Product Overview



Communication Interface

NB-IoT   WiFi

Ethernet



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



(Built-in 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

Economic



CPM-10
Economic Multifunction Power Meter



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.....)



Signal Measuring & Sensing

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



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



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



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

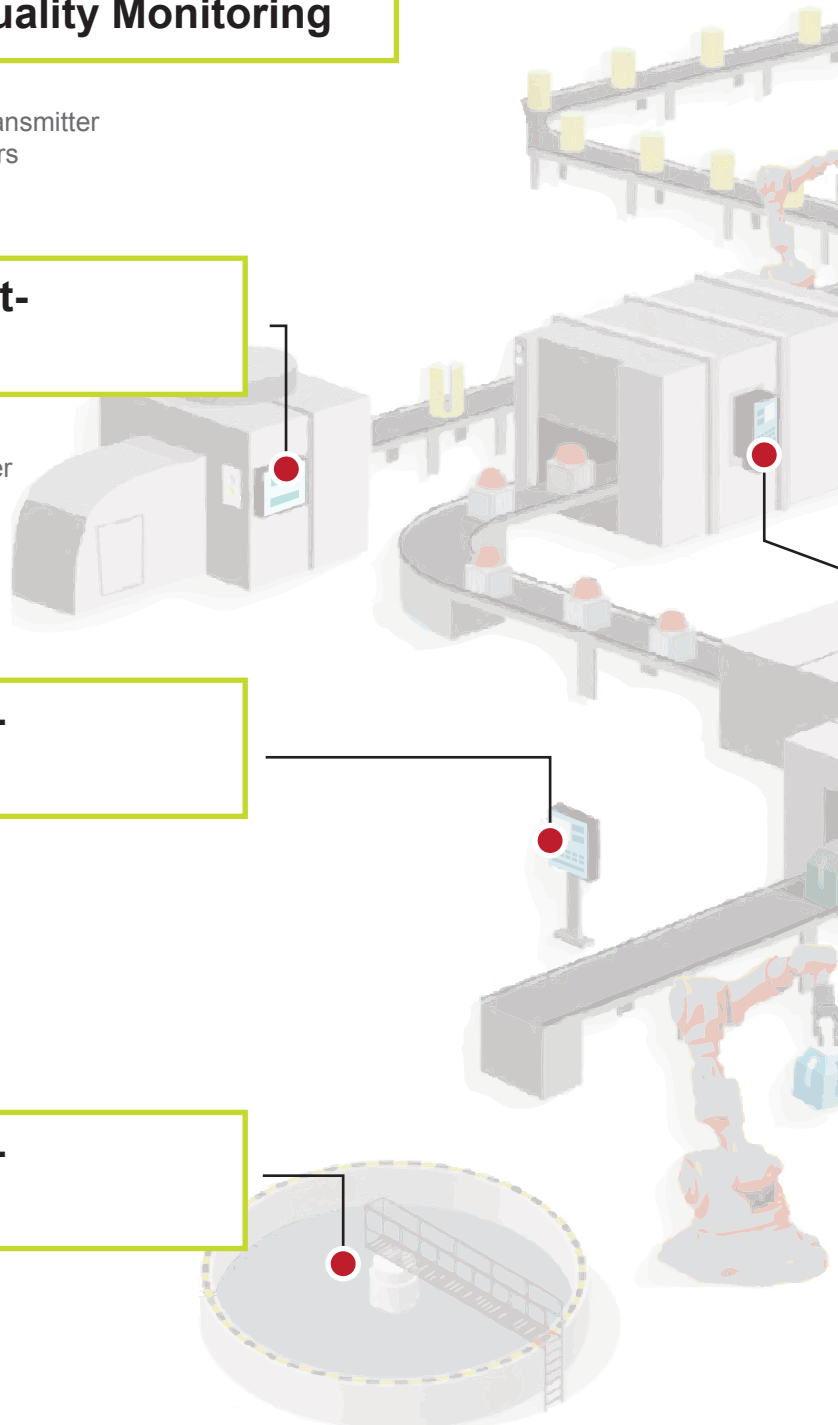


LCA/CB Weight sensor

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



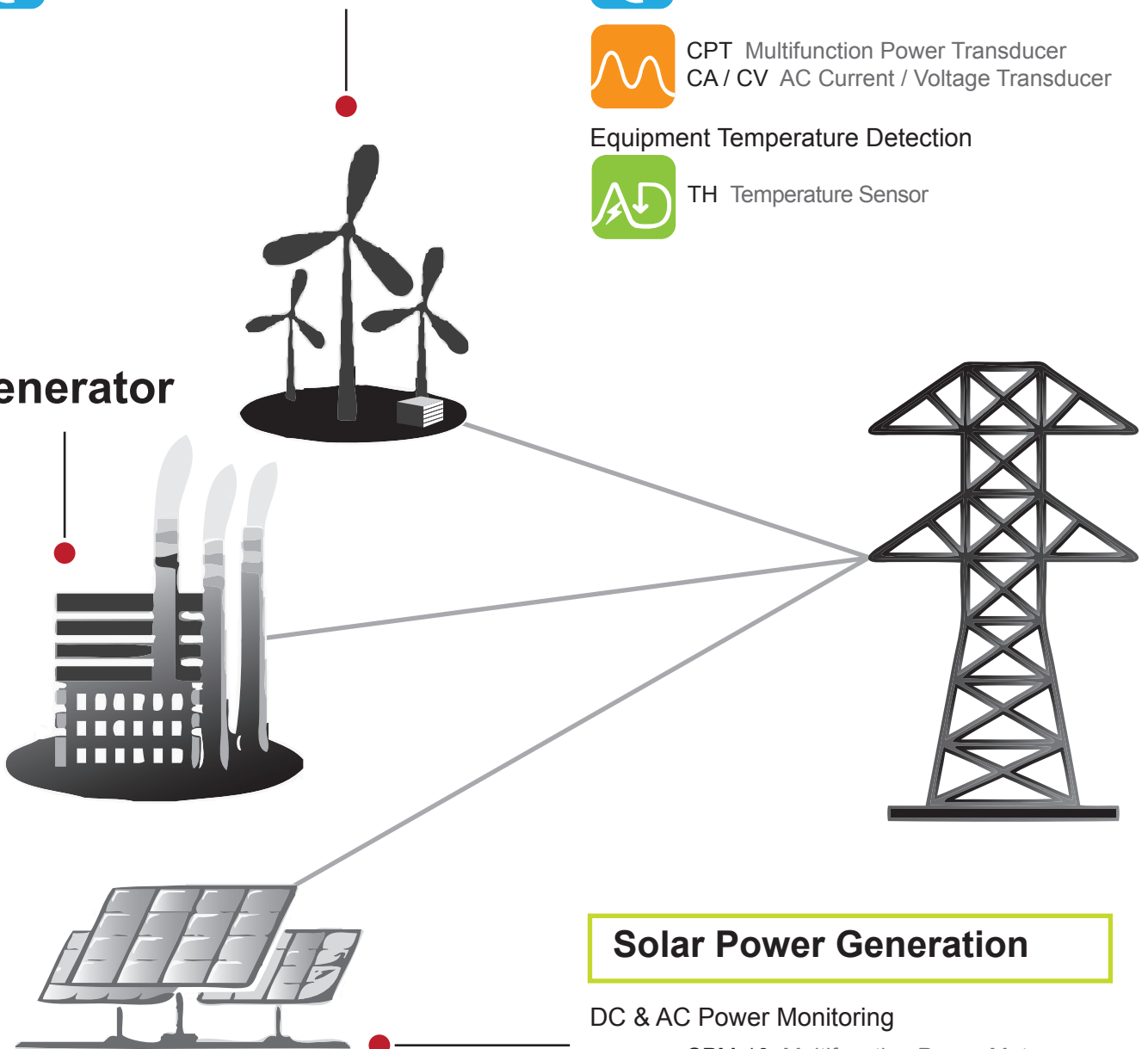
CPT Multifunction Power Transducer
CA / CV AC Current / Voltage Transducer

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

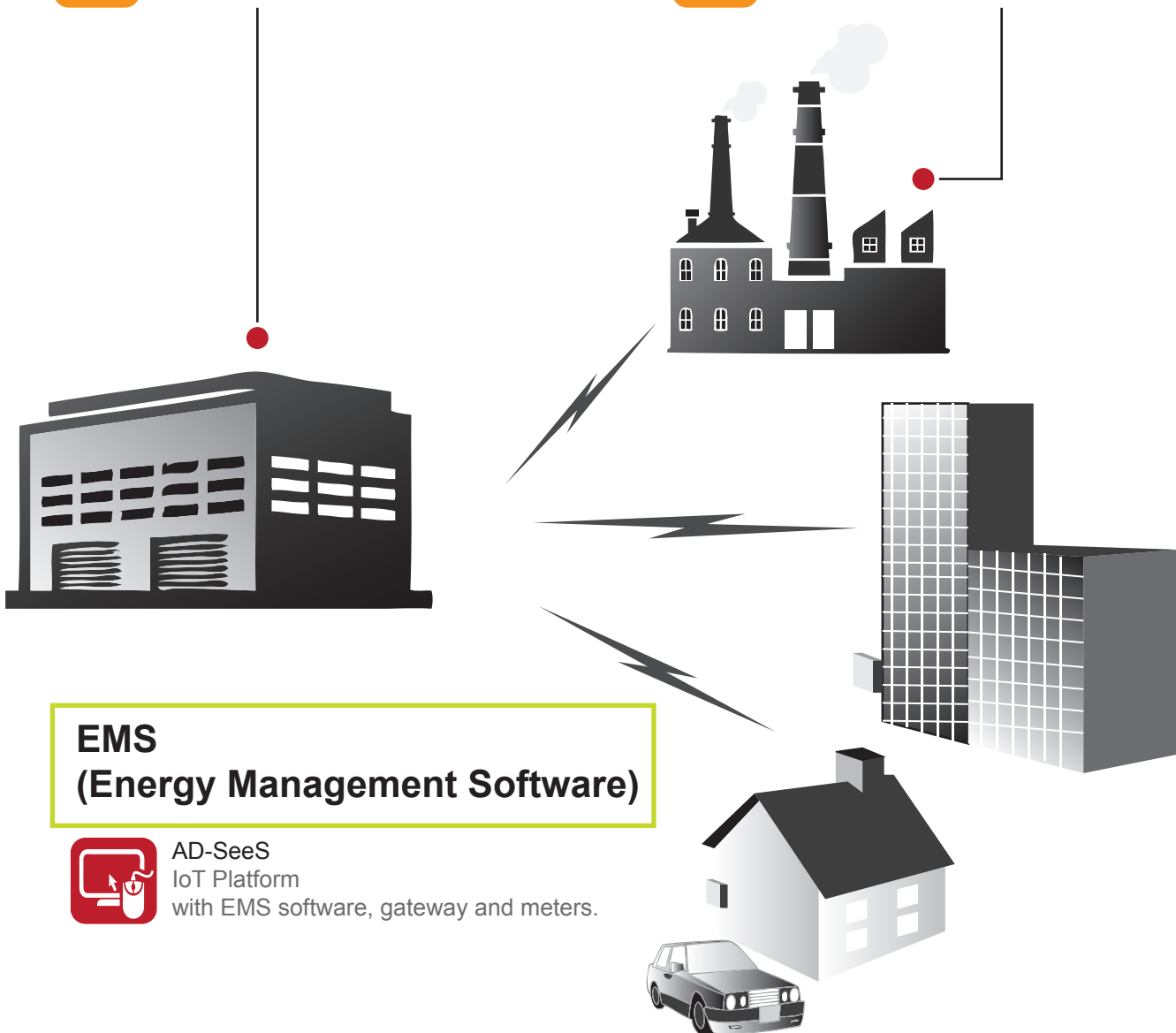
Panel Temperature Detection



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.

AD Four major application fields:

3. Infrastructure

Example : Airport



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)

345KV/161KV/69KV

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

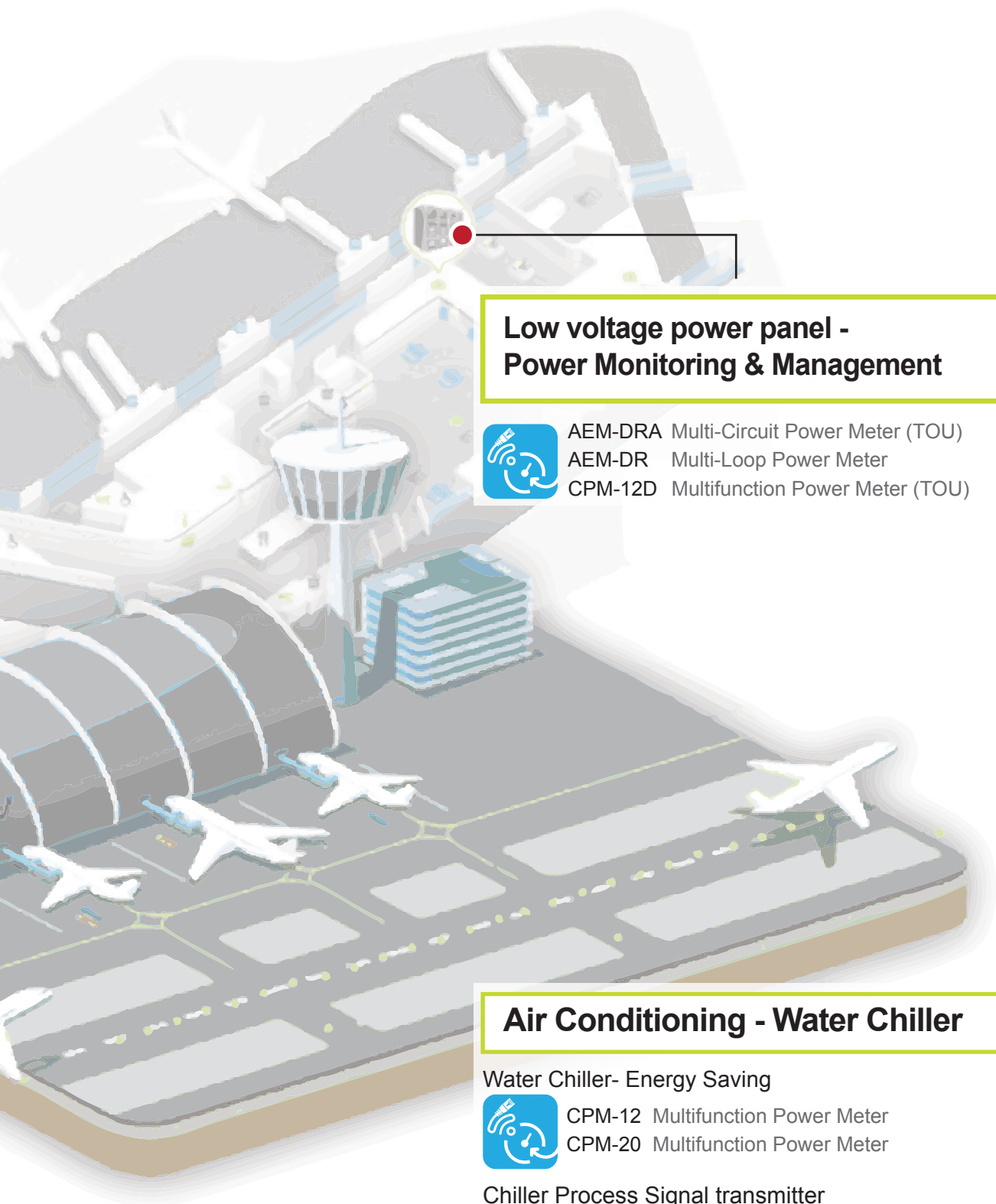


WTM-100 Wireless Temperature Transmitter & Meter



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

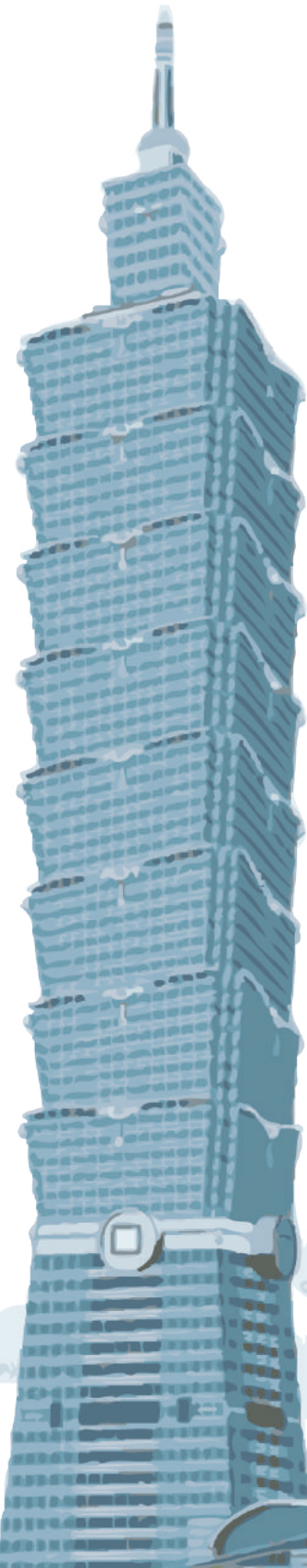


CPM-12 Multifunction Power Meter
CPM-20 Multifunction Power Meter

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)

Shopping mall: Time of use (TOU) / Billing



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



Office Area



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), CO² 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, CO² 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, CO² 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, CO² 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

CPM-10 Series

Economic 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

Economic

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, CO² 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, CO² 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:



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

Multifunton DC Power Meter

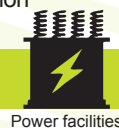


- Provide DC voltage, current, power parameter measurement and operation time calculation
- With a unique dual-window display (10 digits +5 digits)
- Energy Accuracy: 0.1%
- Provide bidirectional energy measurement
- Sampling rate : 15 points / second
- The reaction time is less than 100 milliseconds
- 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:



Power facilities



Commercial Buildings



Infrastructure



ADP-PM Series

Multi-Circuit 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:



Continuous production industry



Commercial Buildings



Energy system



| Model No. | VAW series | CPM10 | CPM series | | | | CPM70 series | | | CPM80 series | | | | |
|---|------------|-------|------------|-----|-----|-----|--------------|-----|-------|--------------|-----|-----|-----|--|
| | 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 μ A 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 20~50V

**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 (°C) | 0~60 | 0~60 | 0~60 | | | 0~60 | | |
| Header temperature (°C) | 0~60 | 0~60 | 0~60 | | | 0~60 | | |
| Panel temperature (-25 °C 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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