

AEM-DR Multi-circuit power meter(DIN rail)

■ Description

Provide high accuracy measurement, display and remote communication of single phase & three phase parameters (V, A, P, Q, S, PF, Hz, Kwh). Multi-circuit design and relay output modular expansion design decrease the overall cost and make the functionality more flexible. All monitored data is available via a RS485 serial , for the needs in energy management, alarming, and remote controlling. Embedded flash memory for Data-Logging can avoid any data missing once the communication is interrupted. Moreover, its ultra compact size DIN-rail mounting makes itself mountable in virtually any panel, enclosure or indoor Cabinet.



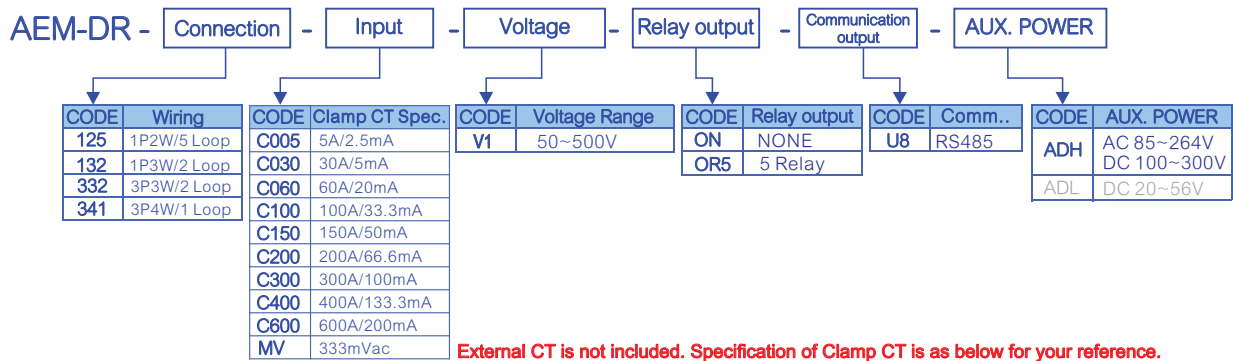
■ Feature

- Metering parameters of Voltage, Current, Frequency, Power factor, Active Power, Reactive Power, Apparent Power, Energy (Watt-Hr), et al in 1P2W, 1P3W, 3P3W, 3P4W unbalanced system
- 2-line display both with 6 digits, able to view the name and value of the parameter at the same time
- Modular Expansion Design, able to correspond to different parameters individually
- Relay output with Start Delay, Hysteresis, Energized, and de-energized delay functions
- With RS485 serial as standard for remote controlling relay output
- Standard DIN-Rail mounting
- CE Approved
- Embedded 1MB flash memory for Data-Logging
- With 20 words variables in Modbus address for acquiring the demand measurement at cost

■ Applications

- Rental Building Electricity Charging Management
- Market/Vender/Stand Electricity Charging Management
- Rental Apartment Electricity Charging Management
- Distributed Generation Electricity Charging Management
- Booth Electricity Charging Management
- Dormitory Electricity Charging Management
- Trailer Coach Electricity Charging Management

■ ORDERING INFORMATION



■ TECHNICAL SPECIFICATION

Measurement and Wiring

Phase & Wiring	Voltage	Current	Frequency
1P2W	50~500V _{L-L}	depends on external CT	45~65Hz
1P3W			
3P3W			
3P4W			

Accuracy & Resolutions

PARAMETERS	ACCURACY	RESOLUTION	INPUT RANGE
Voltage	0.2%	0.1V	0~9999
Current	0.2%	0.001A	0~9999
Neutral Current	1.0%	0.001A	0~9999
Active Power	0.5%	0.1W	-32768~32767
Reactive Power	0.5%	0.1Var	-32768~32767
Apparent Power	0.5%	0.1VA	-32768~32767
Power factor	0.5%	0.001	±0.020~+1.000
Frequency	0.2%	0.01Hz	45.00~65.00
Active Energy	0.5%	0.1kWh	0~999999
Reactive Energy	0.5%	0.1kVarh	0~999999

* Accuracy non-include clamp CT ratio error

Measurement: True RMS measuring Parameters

Display update period: 0.5 Sec

Wiring: 1P2W, 1P3W, 3P3W, 3P4W

Input range: Voltage: As metering and Wiring

PT Primary side unit: V or KV

PT Primary setting: 50.0V~99.99KV

PT Secondary setting: 50.0~500.0V

Direct Input ≤ 500V

CT Primary setting: 1~9999A

Frequency: 45~65Hz

Max. input withstand:

Voltage: 1.2 X Rated voltage continuous(600V max)

Current: Clamp CT Specification 1.2X Rate voltage continuous

Communication function

Port: RS-485

Protocol: Modbus RTU Mode

Address: 1~247

Baud rate: 1200、2400、4800、9600、19200、38400 bps

Parity check: N81、N82、O81、E81

Wire distance: 1200M max

Terminal resistance: 150Ω

Variable Communication address: Customizing from 0100h to 0113h, 20 address parameters

Recording

Memory: Internal 1MB
 Capability: Depends, i.e. saving up to 100,000 records with recording kWh parameters only.
 Recording interval: 1~32767
 Time units: Second, minute, hour, day

Display

LCD backlight: 2-line, 6 digits for each. Top pane: 6.5mm high; bottom pane: 9.6mm high
 Comm. status indication: With Communication status display icon
 Parameter indication: show parameters and channels in words
 Alarm status indication: R1~R5 with Relay contact status display icon

Relay Output Module AEM-OR5

Control function

Remote Control: 5 relay outputs (Option) which can be control via communication directly
 Alert Management:
 Set point: 5 set points can corresponding individually to each relay output
 Relay output: R1&R2 FORM-A, R3~R5 FORM-A Common mode 1A/230Vac, 3A/115V
 Relay parameter corresponding: Selected from various power parameters \geq
 Relay mode: Hi / Lo / Hi.HLd / Lo.HLd / Ro / oFF
 Energizing functions: Start delay/ Energize time delay & de-energize time delay/ Hysteresis/ Energized Latch
 Start band: 0~9999 counts
 Start delay: 0:00.0~9(Minutes):59.9(Second)
 Energize time delay: 0:00.0~9(Minutes):59.9(Second)
 De-energize time delay: 0:00.0~9(Minutes):59.9(Second)
 Hysteresis: 0~9999counts

Power

Aux Power: ADH: AC85~346Vac, 50/60Hz, DC100~300Vdc
 ADL: 20~56Vdc
 Power consumption: AC: 10VA, DC: 4W
 Temperature Coefficient: 100 ppm/°C

Security

Password: two groups password in 4 digits for "parameter setting" & "reset to zero for WATT"
 Parameter setting: Password is able to set
 Reset to zero for WATT: password is unable to set
 Function Lock: There are 4 options
 User Level: User Level lock. User can get into User Level only for checking but unable to change the setting
 Programming Level: Programming Level lock. User can get into programming level only for checking but unable to change the setting
 ALL: All lock. Lock both User Level & Programming Level. User can get into all level for checking but unable to change the setting
 None: No Lock
 Parameter storage methods: F-RAM (Ferroelectric RAM), a random-access memory

Operating environment

Operation Temperature & Humidity: 0~60°C; Display 0~60°C/0~80%RH, No-condensing
 Storage Temperature & Humidity: -20~70°C/0~80%RH, Non condensing

Electrical Safety

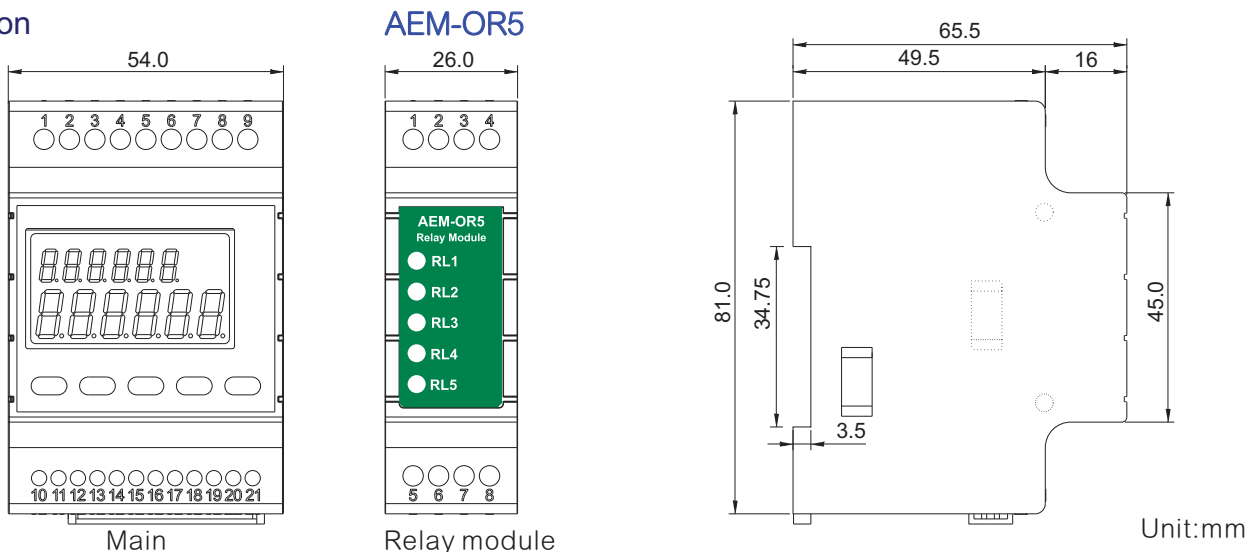
Insulating resistance: $\geq 100M@500V_{dc}$
 Dielectric strength: AC 2KV, 1min 50/60Hz, Input/Output/Power/Case
 EMC: EN61326-1:2006
 EN55011:2009+A1:2010
 EN61000-3-2:2006+A1:2009+A2:2009
 EN61000-3-3:2008
 IEC61000-4-2:2009
 IEC61000-4-3:2006
 IEC61000-4-4:2004
 IEC61000-4-5:2006
 IEC61000-4-6:2009
 IEC61000-4-11:2004
 LVD: EN61010-1:2010
 MTBF: 49×10^4 hours

Mechanical

Case material: PC fireproof
 Mounting: DIN rail
 Wire terminal: Voltage input: AWG: 28~12 / 0.2~2.5mm²
 Screw Torque Value: M2.5 / 5.202kgf.cm (Max)
 Current input: AWG: 28~14 / 0.2~1.5mm²
 Screw Torque Value: M2 / 2.04kgf.cm (Max)
 Weight: AEM-DR: 185g, AEM-OR5: 75g

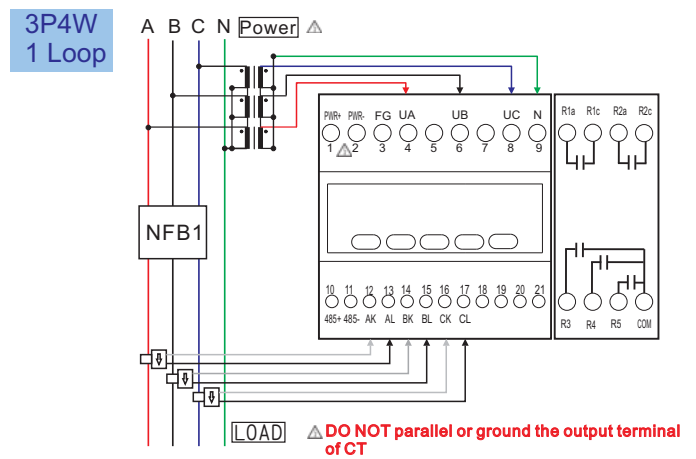
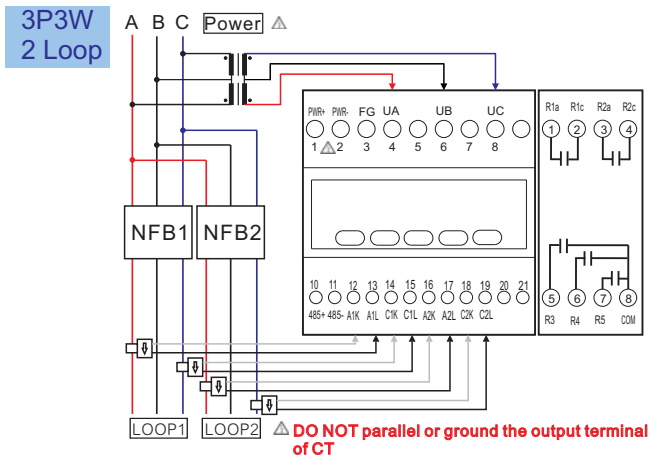
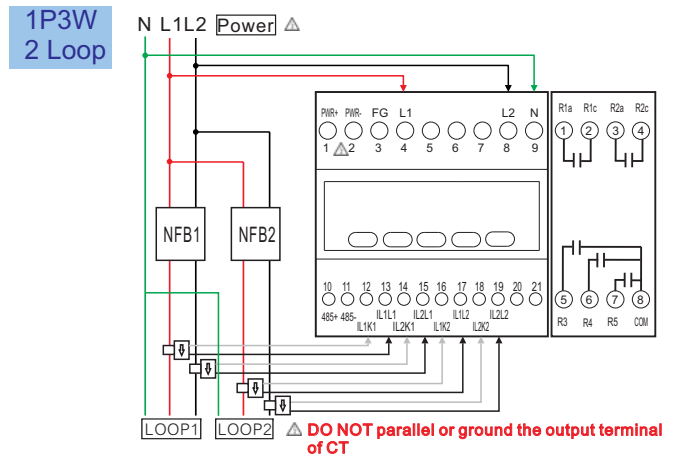
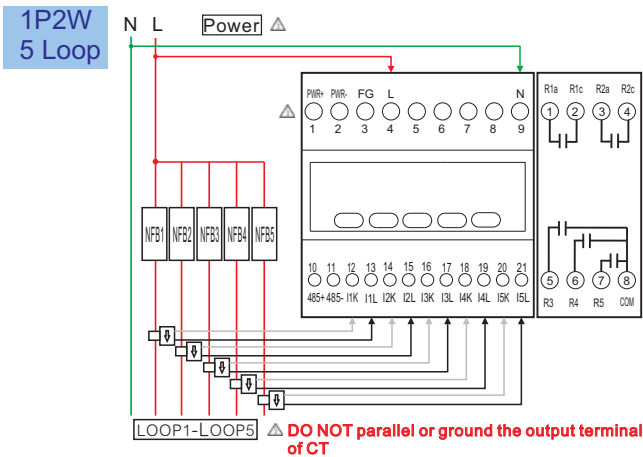
AEM-DR

Dimension

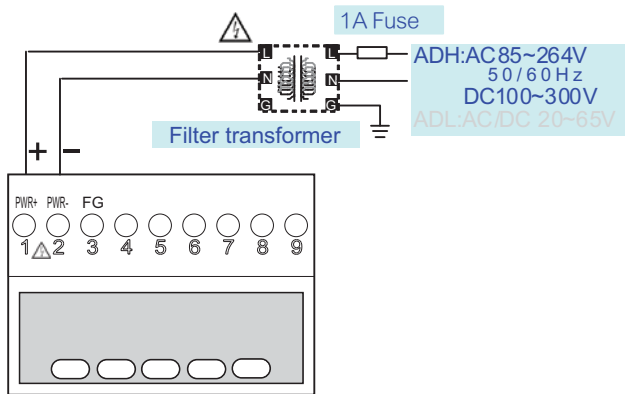


Wiring Diagram

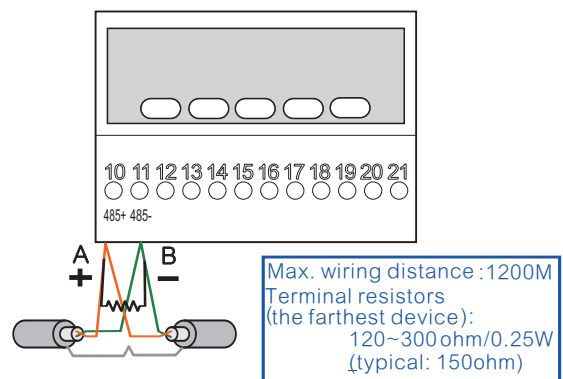
(Secondary output wire of CT must be wiring separately as protection. DO NOT parallel or ground.)



Power Supply



RS485 Communication Port



■ Accessory

Clamp CT Specification

US-CTA- Φ - Rated Current

CODE	Size	CODE	Primary current
10	Φ 10	005	5A
16	Φ 16	060	60A
		100	100A
		030	30A
24	Φ 24	150	150A
		200	200A
		*300	300A
*35	Φ 35	*400	400A
		*600	600A

(MOQ 100 pcs)

Picture of CT



Model	Primary Current	Secondary	Accuracy %F.S.	Variable ratio	Weight
US-CTA-10-005	5A	2.5	1.0	2000:1	60g
US-CTA-16-060	60A	20	0.5	3000:1	100g
US-CTA-16-100	100A	33.3	0.5	3000:1	100g
US-CTA-24-030	30A	5	1.0	6000:1	205g
US-CTA-24-150	150A	50	0.5	3000:1	205g
US-CTA-24-200	200A	66.6	0.5	3000:1	205g
US-CTA-35-300	300A	100	0.5	3000:1	375g
US-CTA-35-400	400A	133.3	0.5	3000:1	375g
US-CTA-35-600	600A	200	0.5	3000:1	375g

US-CTV- Φ - Rated Current

CODE	Size	CODE	Primary current
10	Φ 10	005	5A
16	Φ 16	060	60A
		100	100A
		200	200A
24	Φ 24	*300	300A
		*400	400A
		*600	600A
*35	Φ 35		

(MOQ 100 pcs)

Model	Primary Current	Secondary	Accuracy %F.S.	Variable ratio	Weight
US-CTV-10-005	5A	333	1.0	2000:1	60g
US-CTV-16-060	60A	333	0.5	3000:1	100g
US-CTV-16-100	100A	333	0.5	3000:1	100g
US-CTV-24-200	200A	333	0.5	3000:1	205g
US-CTV-35-300	300A	333	0.5	3000:1	375g
US-CTV-35-400	400A	333	0.5	3000:1	375g
US-CTV-35-600	600A	333	0.5	3000:1	375g

Application



Alert Settings

