AEW100 wireless measurement meter



Overview

AEW 100 wireless measurement module is mainly used for metering three phase active energy on low voltage network. There are functions like RS485 communication and wireless communication on 470MHz in order to help customers check, get and manage the value of energy consumption. This kind of production can be installed in distribution box flexibly, achieving the different demand of measurement and statistics of distribution on different areas and different loadings.

Product specification

■ Naming rule of main part

AEW100 □ - □ / □ - □ - □

- Empty:Normal wiring;CG:Taking voltage from magnetic steel
- Empty:No Temperature Measurement;TN:Temperature Measurement
- Empty:Rod antenna;X:Sucker antenna
- Empty:Piercing(except D15);W:No piercing
- D15\D20\D36:Mutual inductor aperture 15mm/20mm/36mm
- Wireless metrology module

Note:

1. Choose W before choosing CG;
2. There is a mobile antenna lay outside can be chosen, and the length of wire is 2 meters.

■ Naming rule of mutual inductor

AKH - 0.66/K - □ / □ - □

- Version number
- Empty:No Temperature Measurement; TN:Temperature Measurement
- Aperture
- Low pressure open type
- Mutual inductor

■ Model and specification

Chart 1 Mutual inductor specification

Voltage	Current	Mutual inductor	Inside mutual inductor of temperature measurement
	3×1.5(6)A	HCT16K-FJ	/
	3×20(100)A	HCT16K-FJ	/
3×220/380V	3×20(100)A	AKH-0.66/K-20（Piercing）	AKH-0.66/K-20/TN
3×380V	3×20(100)A	HCT20K-TN	HCT20K-TN
3×57.7/100V	3×40(200)A	AKH-0.66/K-20（Piercing）	AKH-0.66/K-20/TN
3×100V	3×40(200)A	HCT20K-TN	HCT20K-TN
	3×80(400)A	AKH-0.66/K-20（Piercing）	AKH-0.66/K-20/TN
	3×80(400)A	HCT20K-TN	HCT20K-TN

Voltage	Current	Mutual inductor	Inside mutual inductor of temperature measurement
3×220/380V	3×80(400)A	AKH-0.66/K-36（Piercing）	AKH-0.66/K-36/TN
3×380V	3×80(400)A	HCT36K-TN	HCT36K-TN
3×57.7/100V	3×120(600)A	AKH-0.66/K-36（Piercing）	AKH-0.66/K-36/TN
3×100V	3×120(600)A	HCT36K-TN	HCT36K-TN

Technical parameter

■ Wireless measurement module

Chart 2 Main function

Function	Function description
Energy metering	Active kWh (positive and negative)
Electrical measurement	U、I、 P、Q、S、PF、F
Pulse output	Active pulse output
LED display	(L1、L2、L3)powered display, pulse, communication, wireless status
Communication	Wireless transmission on 470MHz
	Infrared communication
	Communication interface: RS485

■ Electrical performance

Chart 3 Electrical performance

Voltage	Rated voltage	3×220/380V，3×380V，3×57.7/100V，3×100V
	Reference frequency	50Hz
	Consumption	<2VA(Each phase)
Current	Input current	3×1.5(6)A、3×20(100)A、 3×40(200)A、3×80(400)A、3×120(600)A
	Start current	4‰Ib（1 Class）
	Consumption	<2VA
Measurement performance	Standard	GB/T17215.321-2008
	Active energy accuracy	1 Class
	Temperature accuracy	±2℃
pulse	Width of pulse	80ms±20ms
	Pulse constant	6400imp/kWh 、400imp/kWh、200imp/kWh、100imp/kWh、60imp/kWh Transmission on
Communication	Wireless	470MHz and maximum distance in open space is 1km
	Infrared communication	The constant baud rate is 1200
	Interface	RS485(A+、B-)
	Connection mode	Shielded twisted pair conductors
	Protocol	MODBUS-RTU

■ Work environment

Chart 4 Work environment

Temperature range	Operating temperature	-20℃~55℃
	Storage temperature	-40℃~70℃
Humidity		≤95%(No condensation)
Altitude		<2000m

Dimension and installing description (Unit: mm)

■ Dimension drawings (Unit: mm)

Chart 5 Dimension of mutual inductor

Metering module	L×W×H	88mm×54mm×50mm	/
AKH-0.66/K-20 Mutual inductor		90mm×57mm×35mm	Secondary terminal wire length 350mm
AKH-0.66/K-36 Mutual inductor		109mm×71mm×35mm	Secondary terminal wire length 500mm
HCT16K-FJ Mutual inductor		29.5mm×44mm×43mm	Secondary terminal wire length 2000mm
HCT20K-TN Mutual inductor		70.5mm×57mm×35mm	Secondary terminal wire length 1500mm
HCT36K-TN Mutual inductor		85mm×71mm×35mm	Secondary terminal wire length 1500mm

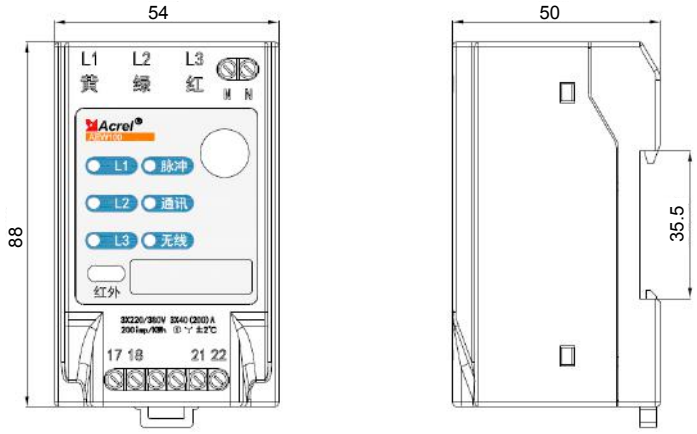


Fig 1 Dimension of AEW100

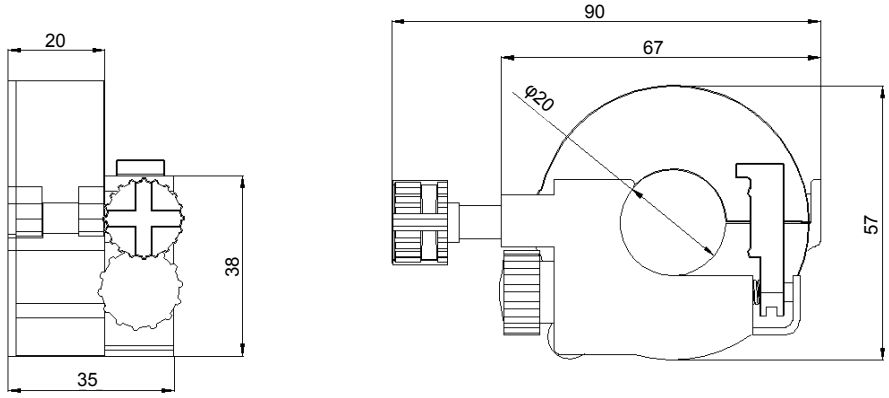


Fig 2 Dimension of mutual inductor AKH-0.66/K-20

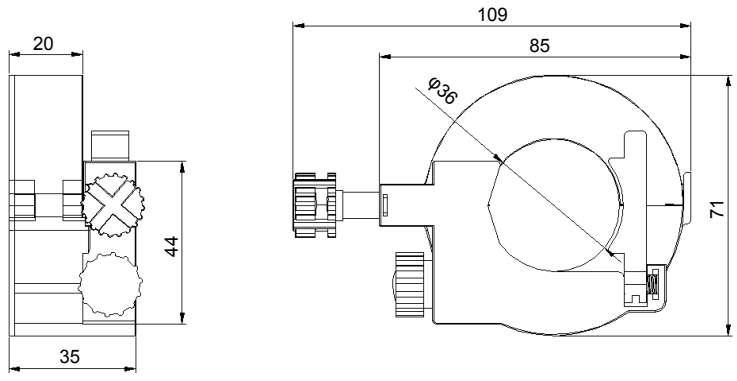


Fig 3 Dimension of mutual inductor AKH-0.66/K-36

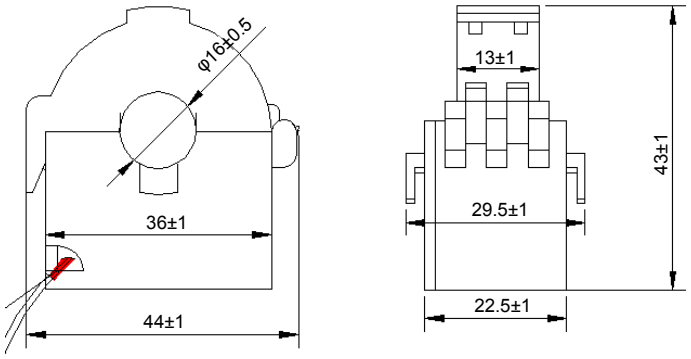


Fig 4 Dimension of mutual inductor HCT16K-FJ

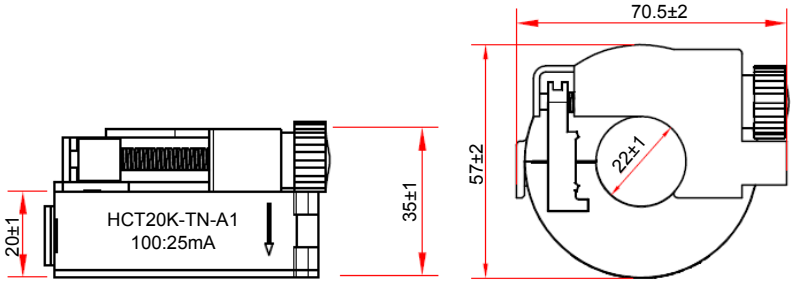


Fig 5 Dimension of mutual inductor HCT20K-TN

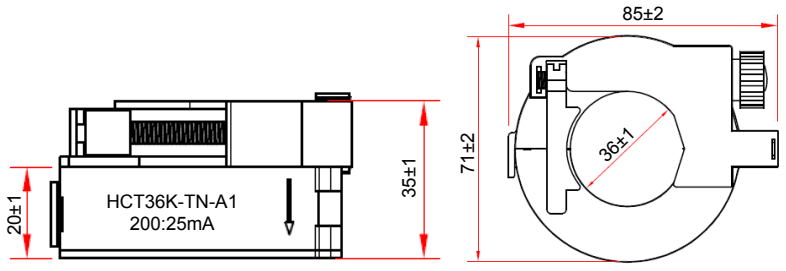
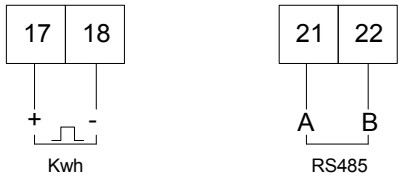


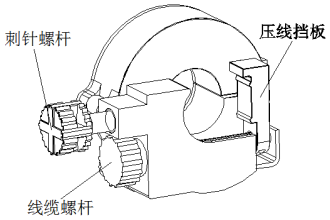
Fig 6 Dimension of mutual inductor HCT36K-TN

■ Installing and Wiring description

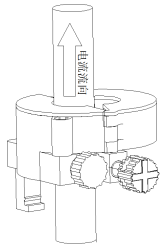


① Installing description of normal type with piercing

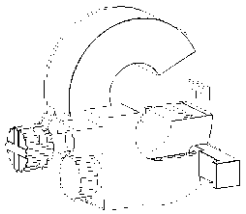
L1, L2, L3 prick in to A, B, C phase respectively, and especially the A phase and N terminal powered for the AEW100. And A, B, C phase transmits the voltage and current to AEW100 by mutual inductor, and then the AEW100 transmits the single to PC via RS485.



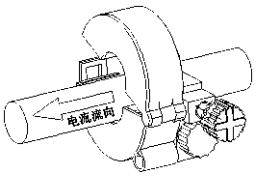
First step: Loosing the needle screw and loosing the wire bezel to the top (show as above).



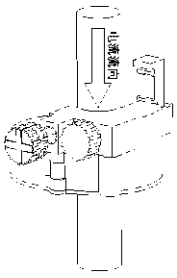
(The current flow towards upward shown as above)



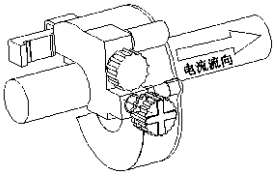
Second step: Open the mutual inductor and rotate the wire bezel to vertical (show as above).



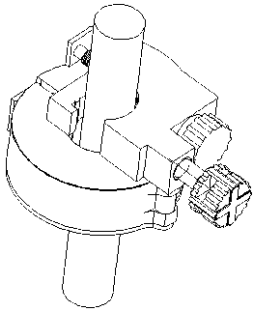
(The current flow towards the left shown as above)



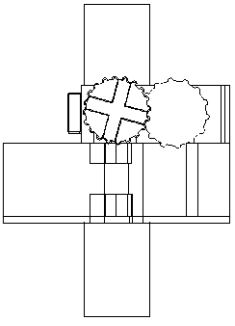
Third step: Installing the mutual inductor correctly refers to the current flow (The current flow towards downward as above).



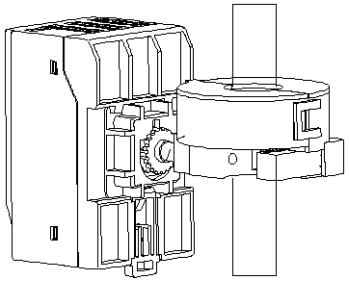
(The current flow towards the right shown as above)



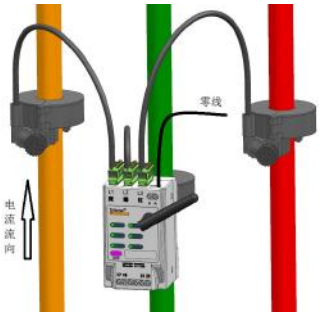
Fourth step: Close the mutual inductor and put down the wire bezel, and make the wire beside the pricking needle hole, then rotate tightly the screw arbor (show as above)



Fifth step: Rotating the pricking needle screw arbor, and then tight the screw arbor, making cross symbol's angle between 90 degree to 150 degree.



Sixth step: Match the color with mutual inductor and AEW100 terminal, the locate the AEW100 on the mutual inductor (show as above)



Seventh step: The effect picture of the final installation.

Installation Notes:

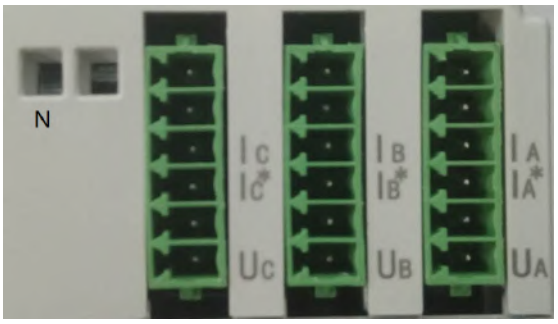
1. Loosening cable should be avoided during installation

2. Measure the temperature of the installation position after full-loading operation of equipment side for more than 1 hour,. The temperature should not exceed 80 ℃.

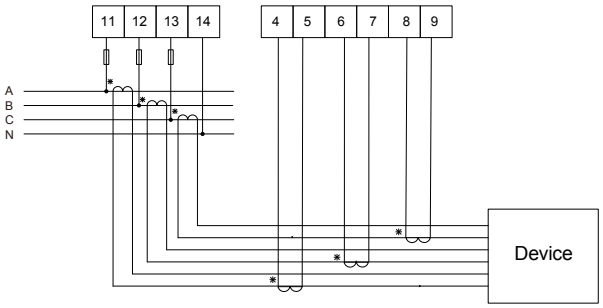
3. The working temperature of the matching transformer of this product is less than 90 ℃

■ Installing description of W type without piercing

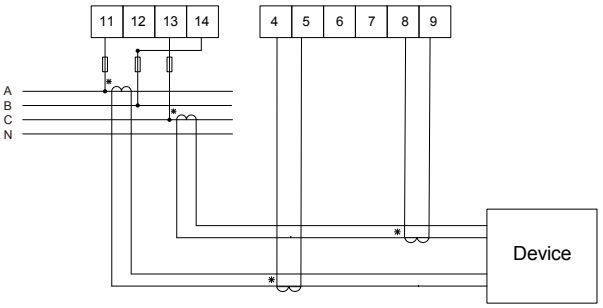
L1, L2, L3 place on A, B, C phase respectively. A、B、C three-phase voltage signal lines are connected to UA, UB, UC terminals respectively, neutral line is connected to the N terminal. And especially the A phase and N terminal powered for the AEW100. And A, B, C phase transmits the voltage and current to AEW100 by mutual inductor, and then the AEW100 transmits the single to PC via RS485.



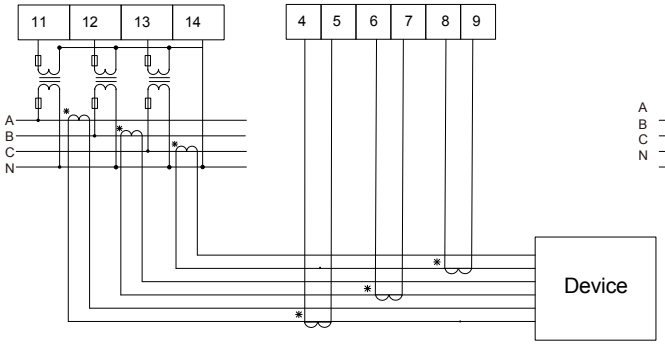
Terminals of AEW100-D15、AEW100-D15W、AEW100-D20W、AEW100-D36W



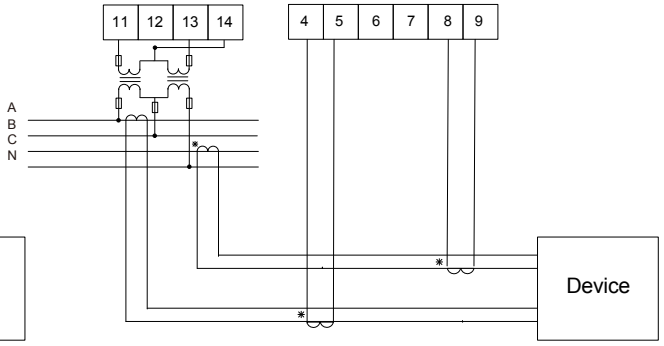
3-phase-4-wire



3-phase-3-wire

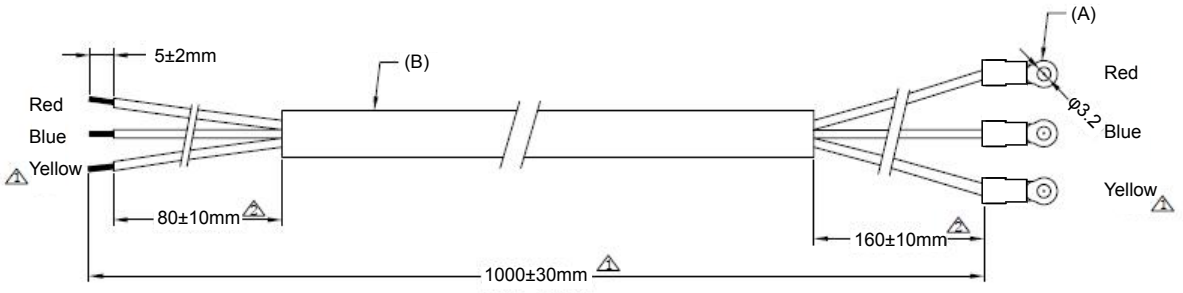


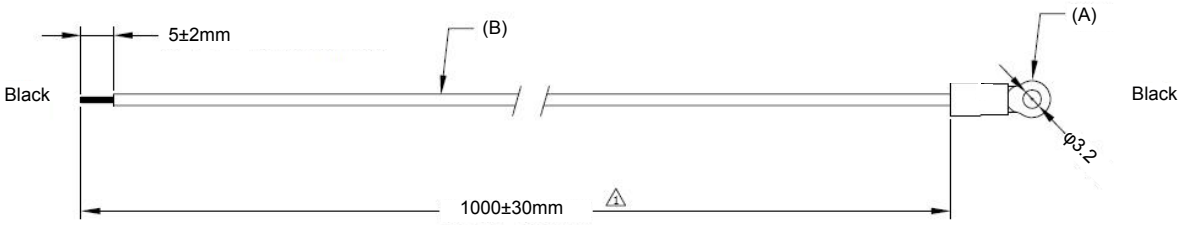
3-phase-4-wire



3-phase-3-wire

Note: CG is optional after selecting W, which means taking voltage from magnetic steel.





Dimension of magnet steel

Operating and display

There are 6 LED lights on the surface of the meter represent for L1, L2, L3, pulse, communication, wireless respectively.

L1 light on means L1 phase powered;

L2 light on means L2 phase powered;

L3 light on means L3 phase powered;

Pulse light on each time means one electric pulse output;

Communication light will flash while communicating via RS485;

Wireless light will flash while communicating via wireless module.