

# MW(IQ/S/PF)-5A Watt (Active Power/ RE-active Power/ PF)Meter

## DESCRIPTION

Mx-5A meter to provide power (Watt or Active Power or RE-active Power or Power Factor), high-precision measurement, display and remote communication capabilities. ◦

Additional purchase: 1 group of relay outputs, 1 analog output, an RS485 communication output (the Modbus RTU Mode) and 1 group of pulse output interface, so that can be installed in power management, remote input and output, alarm and a variety of remote communication control the use of needs. ◦

120mm (D) is ideal for assembling in panels with limited penetration depth. ◦



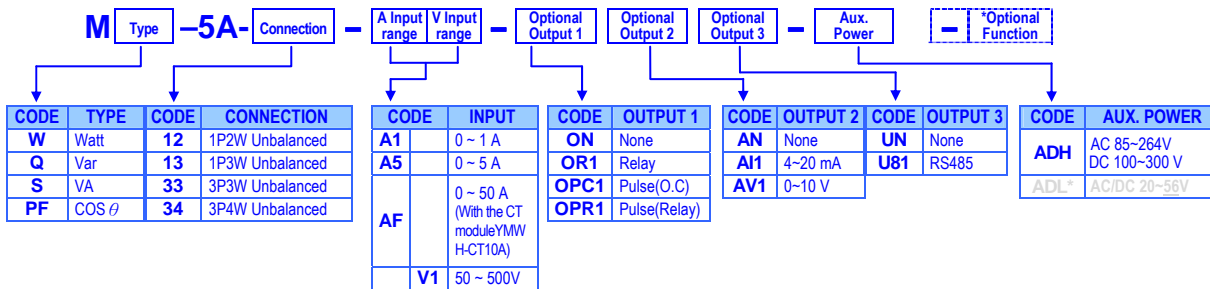
## FEATURE

- Measuring 1P2W, 1P3W, 3P3W, 3P4W Unbalanced systems of Power Parameters (W \ Var \ VA \ PF.) ◦
- 1 relay output for Hi / Lo / Hi Hold / Lo Hold / OFF modes, and with start delay, hysteresis, energized time delay, de-energized time delay functions ◦
- Analogue output, pulse output and RS 485 communication are available in options ◦
- Standard panel cutouts: 1/8 DIN 96 x 48 mm
- Meet CE requirements

## APPLICATIONS

Electricity Charging System    Energy Consumption Monitoring & Control    Distribution System  
 Building Automation Energy    Management System    Testing Equipment

## ORDERING INFORMATION



## TECHNICAL SPECIFICATION

### Measurement and connection

Connection	Input range			Input consumption
	Voltage	Amp.	Freq.	
1P2W	50~500Vac (VL-N)	1A 5A	45~65 Hz	Voltage: ≤0.5VA/Phase or Current: ≤0.1VA/Phase
1P3W				
3P3W				
3P4W				

\* Max input 500V, 5A, if exceed please use PT or CT ◦

### Accuracy and resolution

Paramet	Accura	Resolution(Programmab	Display Range
Active	0.5%	1 (W)	0~29999
Reactive	0.5%	1 (VAR)	0~29999
Apparent	0.5%	1 (VA)	0~29999
Power factor	0.5%	0.001(PF)	-0.500~+0.500

### Input

**Measurement:** True RMS Value  
**Ripple effect:** ≤ 0.2% of F.S. at 30% distortion  
**A/D converter:** 16 bits A/D converter  
**Accuracy:** ≤ 0.5% of FS ± 1C;  
**Sampling rate:** 128point/Cycle  
**Response time:** ≤500 ms (Average value set as = "1")  
**System:** 1P2W, 1P3W, 3P3W, 3P4W / Unbalanced  
**Input range:** Voltage: 50~500V L-N  
 Primary shunt unit setting: V and KV  
 PT Primary setting: 50.0V~999.99KV  
 PT Secondary setting: 50.0~500.0V  
 Direct Input: Primary = Secondary < 500V

**Current: 0 ~ 1/ 0~ 5A (max.)**  
 CT Primary setting: 1~2999.9A  
 CT Secondary Fixed: 1.000 or 5.000A (By Order)

### Max. input capability:

**Voltage:** 2 X rated voltage continuous  
 4 X rated voltage continuous 2 minutes  
**Current:** 3 X rated current continuous  
 10 X rated current continuous 10 seconds  
 50 X rated current 1 second (5A input type)

### Control function

**Setting point:** 1 sets (1 contact output)  
**Relay output:** 1 set SPDT, 3A/230Vac, 5A/115V  
**Relay mode:** Hi / Lo / Hi.HLd / Lo.HLd / oFF  
**Function:** Start delay/Start band/ Hysteresis /Relay hold  
 Start band: 0~9999 counts  
 Start delay: 0:00.0~9(Minutes):59.9(Second)  
 Run delay: 0:00.0~9(Minutes):59.9(Second)  
 Off delay: 0:00.0~9(Minutes):59.9(Second)  
 Hysteresis: 0~5000 counts

### Analogue output(option)

**Accuracy:** ± 0.1% of F.S.; 16 bits DA converter  
**Ripple:** ≤ ± 0.1% of F.S.  
**Response time:** ≤100 msec. (10~90% of input)  
**Isolation:** AC 1.5 KV between input and output  
**Output range: [Ro5L]** Voltage: 0~5V / 0~10V(default) / 1~5V  
 0~2.5~5V / 1~3~5V / 0~5~10V /  
 -5~+5V / -10~+10V  
**Current:** 0~10mA / 0~20mA / 4~20mA(default)  
 4~12~20 mA / -10~10 mA / -20~+20 mA

**Output capability:** Voltage: 0~10V;  $\geq 1000\Omega$ ;  
 Current: 4(0)~20mA:  $\leq 600\Omega$  max  
**Functions:** **RaH5** (output range high): Settable range: -19999~29999  
**RaL5** (output range Low): Settable range: -19999~29999  
**RaLHt** (output High Limit): 0.00~110.00% of output High  
**Digital fine adjust:** **RaPto**: Settable range: -38011~+27524  
**Ra5Pn**: Settable range: -38011~+27524

**RS 485 (Optional)**

**Protocol:** Modbus RTU mode  
**Baud rate:** 1200/2400/4800/9600/19200/38400 bps selectable  
**Bits:** 8 bits  
**Parity check:** Odd / even or none (with 1 or 2 stop bit) selectable  
**Address:** 1 ~ 255 selectable  
**Wire distance:** 1200M max  
**Terminal resistance:** 150 $\Omega$ .

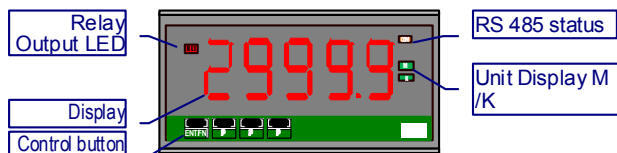
**Safety**

**Insulation:** AC 2.0 KV for 1 min, Power/Input/Output/Casing  
**Isolation resistance:**  $\geq 100M$  ohm at 500Vdc, Power/Input/Output/Casing  
**Signal isolation:** Power/Input/Relay/RS485/Analogue output/Pulse  
**EMC:** EN 55011:2002; EN 61326:2003  
**Safety(LVD):** EN 61010-1:2001

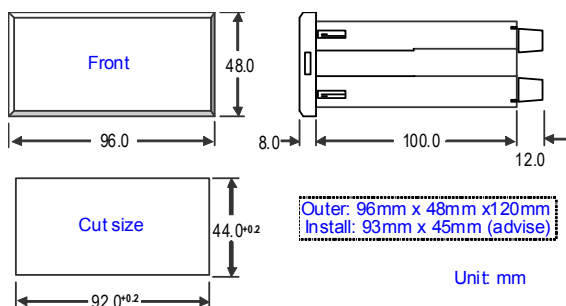
**Working environment**

**Temperature.:** 0~60 °C  
**Humidity.(%RH):** 20~95 %RH, Non condensing  
**Temp. coefficient:**  $\leq 100$  PPM/°C  
**Storage:** -10~70 °C  
**Protection:** Front panel :IEC 529 (IP52); Case: IP20  
**Mechanical**  
**Dimension:** 96mm(W) x 48mm(H) x 120mm(D)  
**Mounting size:** 92mm(W) x 44mm(H)  
**Case material:** ABS Non-flammable (UL 94V-0)  
**Installation:** Panel mounting  
**Terminal:** Plastic NYLON 66 (UL 94V-0)  
 10A 300Vac, M2.6, 16~22AWG  
**Weight:** 350g(Aux. Power : ADH, ADL)

**Front panel**

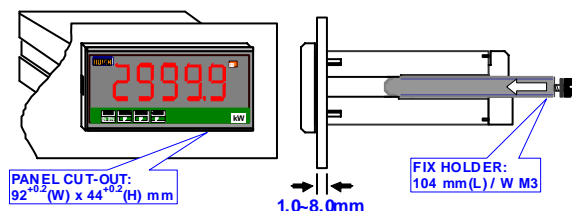


**Casing dimension**



**Installation**

Please install meter within working temperature & humidity environment



**Power supply**

**Working voltage:** ADH: AC 85~264V · DC 100~300V  
 ADL: AC/DC 20~56V

**Power consumption:** AC Power  $\leq 12VA$  , DC Power  $\leq 6.0W$   
 By EEPROM

**Data storing:**

**Display** Watt / Var / VA / P.F display by order selection  
 0.8" Display: 5 digi; 0.8"(2cm) Red LED

**I/O Status:**

**K M** Units of indicator: K: 10<sup>3</sup> · M: 10<sup>6</sup>  
**COM** RS 485 communication: 1 rectangular orange LED

RS485 signal send/receive data · LED will blink  
 When COM blink faster, data transfer speed is higher

**RL1** Relay output LED: 1 rectangular red LED

LED on when relay output;  
 4 control buttons: Enter, function./ Shift / Up / Down

**Up key:** Values increase / return  
**Down key:** Value decrease / enter next level  
**Shift key:** Move decimal point / return to up level / escape setting

**Enter/Fun key:** Enter setting status / save and enter next function parameters

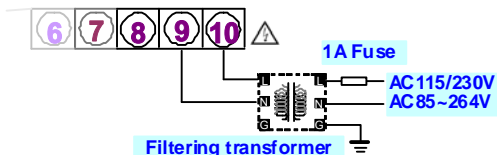
**Password function:** 4 digits password setting ; range 0000~9999  
 Password for parameters setting level needed.  
 Password can be change at parameters level  
 Please contact us if password lost.

**Lock function:** 4 lock modes, No lock/User level lock/Parameters Setting lock/Lock all  
**None:** No lock · all function and parameters selectable  
**User Level:** Open for viewing level, not able to change any setting if locked  
**Engineer Level:** Open for viewing level, not able to change any setting if locked  
**All:** Locked all level.

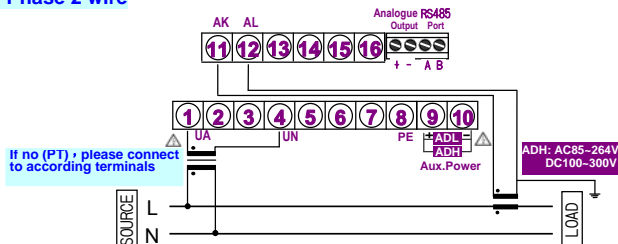
**Wiring diagram**

Please check input operating voltage before sending power, terminal connection to right number · Advise adding fuse/switch in front of power. RS485 / Analog Output wiring: AWG22~16(0.5~1.3mm<sup>2</sup>)  
 Other: Wiring: AWG15~10(1.5~2.5mm<sup>2</sup>)

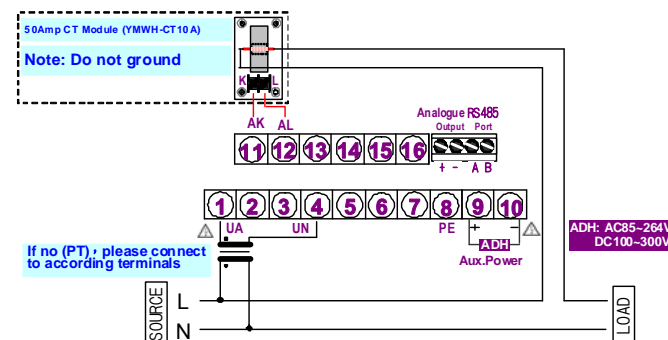
**Operating power connection**



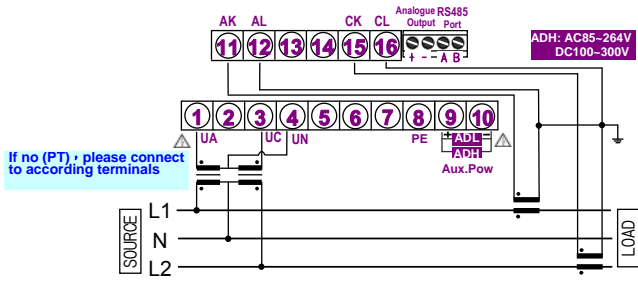
**1 Phase 2 wire**



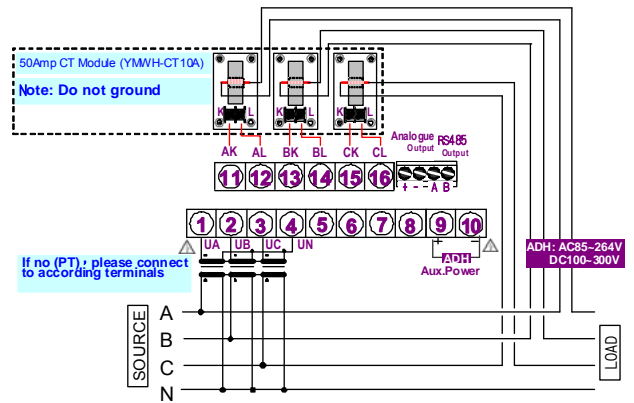
**With YMWH-CT10A(CT Module) 1P2W**



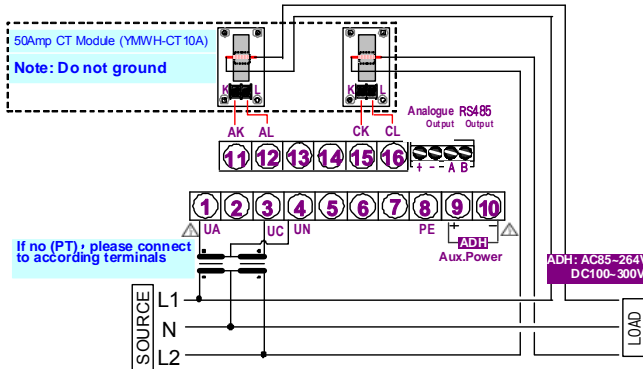
1 Phase 3 wire



With YMWH-CT10A(CT Module) 3P4W

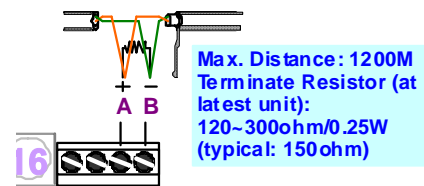


With YMWH-CT10A(CT Module) 1P3W

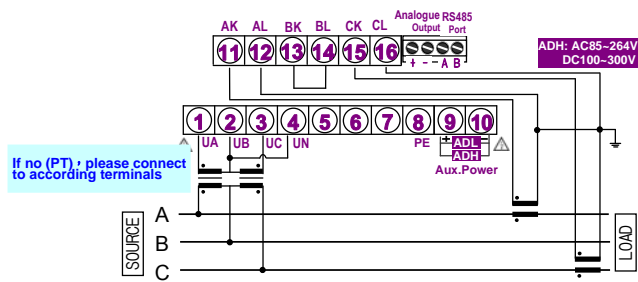


Output signal connection

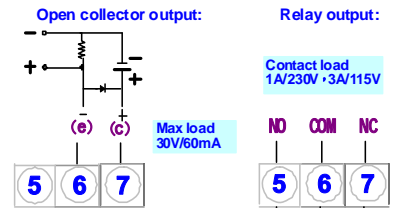
Due to terminal quantitative restrictions, the left side of the terminal can be used for analog output; the right terminal can be used for RS485 output



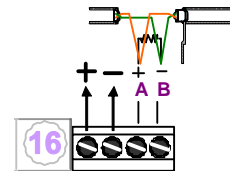
3Phase 3wire 2CT(Unbalanced Load)



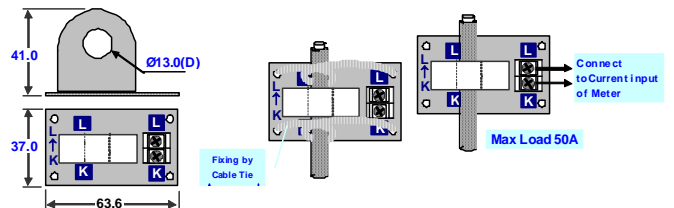
Pulse output



A.O + RS485

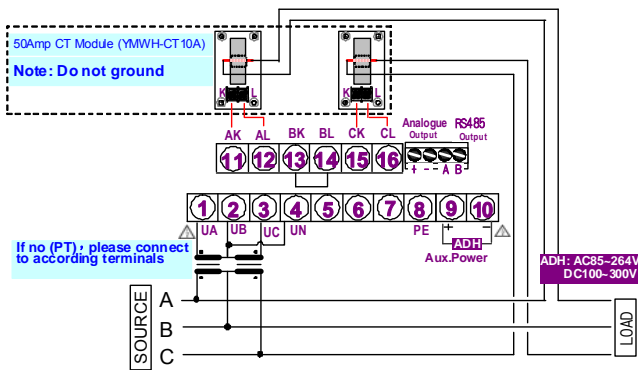


Optional modules: high-precision CT module - YMWH-CT10A - 0.1class



Do not ground the use of CT module - YMWH-CT10A

With YMWH-CT10A(CT Module) 3P3W



3Phase 4wire 3CT(Unbalanced Load)

