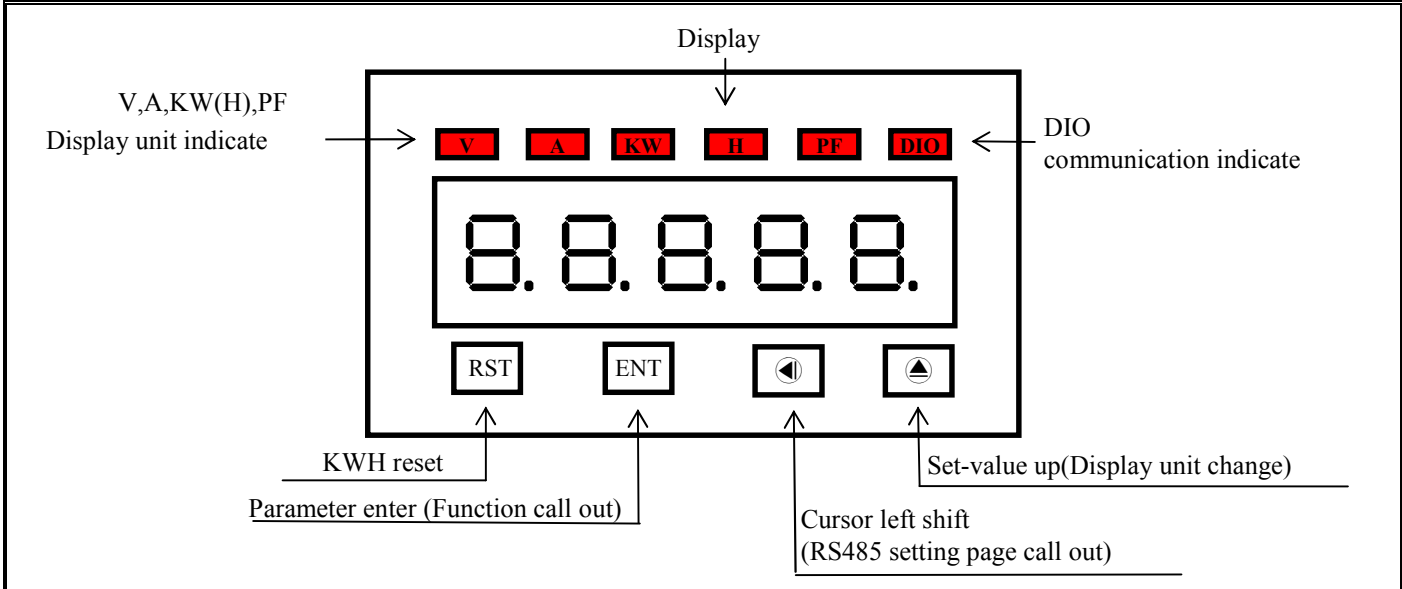


**SPECIAL WATT-HOUR METER FOR SEPARATE BILLING OF ELECTRIC VEHICLE CHARGING PILES, MMS-PWH**

**■ Features**

- ⊙ Accuracy 0.2% F.S.
- ⊙ Measuring and display ACV/ACA/KW/Power factor/KWH
- ⊙ Display unit, manual or auto change can be modified
- ⊙ VOLTAGE, CURRENT, WATT are TRMS
- ⊙ Surge test 4KV(1.2x50us)
- ⊙ Modified inside parameter, must have pass code
- ⊙ RS485 communication interface, Protocol MODBUS RTU MODE
- ⊙ BAUD RATE: 19200/9600/4800/2400
- ⊙ Man-machine interface ,easy to operate
- ⊙ EEPROM Saving, data safekeeping about 10 years
- ⊙ Dimension small (24x48x48.5mm) and High stability
- ⊙ Discrete terminal, connector easy

**■ Name Of Parts**



NOTE: LOCK=YES, RST key inactive

Key Introduce	Operation Manual
RST Key Function	1. In normal display and LOCK=NO, Press RST key > 5S, then KWH=0 and into display KWH value.
⊕ Key Function	1. In normal display, the key function is call out setting page. 2. In parameter setting page, The key function is data Enter , and go to next page
◀ Key Function	1. In normal display, the key function is call out RS485 setting page. 2. Into parameter setting page, the parameter mark&data is alternate display, If need modify data can press shift key into setting procedure, The display is lock parameter data, this time must let off key about 0.2 sec, press again, the cursor(twinkle express)is cycle moving left/right. (Key Response about 0.2 sec)
▲ Key Function	1. In normal display, Press key will change display unit indicate. 2. Into parameter setting page, the parameter mark&data is alternate display, If need modify data can press up key into setting procedure, The display is lock parameter data, this time must let off key about 0.2 sec, press again, the parameter data will increment.
No key in anything	In setting page no key in anything about 2 minutes, return normal display, but if in setting page the modify data will be lost

Step	Parameter Mark Description	Parameter Mark	Operation Manual
1	Normal display	1 2 3 4 5	Press ⊕/FUNC key into P.COD setting page
2	P.COD(Pass code input page)	P. C O D □ □ □ □ □	1. Key in 5 digit pass code with ◀ or ▲ key 2. Press ⊕ key, the pass code is right into AUTO setting page , otherwise return normal display
1-2	AUTO(Auto scan) Default=NO	A U T O □ □ □ □ □	1. Decide Auto scan with ▲ key (NO or YES) 2. Press ⊕ key, into CT rate setting page Note: While AUTO=YES, change display unit each 5S
1-3	CT(CT rate) Default=1	C T □ □ □ □ □	1. Decide Ct rate with ▲ key (0.2/1/10) 2. Press ⊕ key, into Code setting page note: CT ratio is read only!
1-4	CODE(Code) Default=0	C O D E □ □ □ □ □	1. Decide pass code ◀ & ▲ key (0~19999) 2. Press ⊕ key into LOCK setting page
1-5	LOCK(Panel Lock) Default=NO	L O C K □ □ □ □ □	1. Decide panel Lock with ▲ key (NO or YES) 2. Press ⊕ key return normal display Note: while LOCK=YES, all key function at panel will inactive

2	Normal display	1 2 3 4 5	Press $\blacktriangleleft$ key into ADDR setting page
2-1	ADDR(Communication –Address setting page ) Default=0	A d d r	1.Decide address with $\blacktriangleleft$ or $\blacktriangleright$ key(0~255) 2.Press $\text{ENT}$ key enter data and into BAUD setting page
		0 0 0 0 0	
2-2	BAUD(Communication Baud Rate setting page) Default=19200	b A U D	1.Decide baud rate with $\blacktriangleright$ key(19200,9600,4800,2400) 2.Press $\text{ENT}$ key enter data and into PARI setting page
		1 9 2 0 0	
2-3	PARI(Communication Parity Check setting page) Default=n82	P A R I	1.Decide parity check with $\blacktriangleright$ key(n82,n81,even,odd) 2.Press $\text{ENT}$ key enter data and return normal display
		n.8.2	

Appendix	Error Mark Description	Error Mark	Analyze & Description
1	Current input phase error detect	1 - E r r	Current input phase error detect, check current wire
2	Input over error detect	0 0 E r r	Voltage or Current input over range
3	EEPROM error detect	E - 0 0	1.External interference when EEPROM read/write 2.EEPROM write over 100 million times(guarantee 10 years) Please power reset, if still display E-00,doing following step: 1.E-00 & No alternate display for inquire reset EEPROM 2.Decide Yes with $\blacktriangleup$ or $\blacktriangledown$ key, press $\text{ENT}$ key return normal display EEPROM was reset, Please follow step, set again
		n 0	
		4 E 5	

### MMS-PWH Modbus RTU Mode Protocol Address Map

Data format 16Bit/32Bit, sign bit 8000~7FFF( -32768~32767 ), 80000000~7FFFFFFF(-2147483648~2147483647)

Address	Name	Description	Accept
0000	ID	Type code judge, MMS-PWH is 00	R
0001	STATUS	Status, Range 0000~0043(0~67)(0:OFF,1:ON) (Bit0:I OVER, Bit1:V OVER, ..., Bit6:I ERR)	R
0002		Reserve, read 0	R
0003	AUTO	Auto scan , input range 0000~0001(0~1) (0:No, 1:Yes)	R/W
0004	CT	CT rate, 0000~00002(0~2)0:0.2, 1:1.0, 2:10.0	R/W
0005	BAUD	Communication baud rate, input range 0000~0003(0~3)0:19200,1:9600,2:4800,3:2400	R/W
0006	PARI	Communication parity check , input range 0000~0003(0~3)0:N.8.2.,1:N.8.1.,2:EVEN,3:ODD	R/W
0007	LOCK	Panel lock, input range 0000~0001(0~1)0:NO,1:YES	R/W
0008	DISPM	Display unit, input range 0000~0004(0~4) 0:DISP_V, 1:DISP_A, 2:DISP_KW, 3:KISP_KWH, 4:DISP_PF	R/W
0009	ADDR	Communication address, input range 0000~00FF(0~255)	R/W
000A	CODE	Code, input range 00000000~00004E1F(0~19999) high word	R/W
000B		Code, input range 00000000~00004E1F(0~19999) low word	R/W
000C-000F		Reserve, read 0	R/W
0010	DISP_V	Voltage, display range 00000000~0000270F(0~9999) high word <sup>(1)</sup>	R
0011		Voltage, display range 00000000~0000270F(0~9999) low word <sup>(1)</sup>	R
0012	DISP_A	Current, display range 00000000~0000270F(0~9999) high word <sup>(2)</sup>	R
0013		Current, display range 00000000~0000270F(0~9999) low word <sup>(2)</sup>	R
0014	DISP_KW	Kilowatt, display range 00000000~0001869F(0~99999) high word <sup>(2)</sup>	R
0015		Kilowatt, display range 00000000~0001869F(0~99999) low word <sup>(2)</sup>	R
0016	DISP_KWH	Kilowatt hour, display range 00000000~0001869F(0~99999) high word <sup>(1)</sup>	R
0017		Kilowatt hour, display range 00000000~0001869F(0~99999) low word <sup>(1)</sup>	R
0018	DISP_PF	Power factor, display range 00000000~000003E8 (0~1000) high word	R
0019		Power factor, display range 00000000~000003E8 (0~1000) low word	R

Note1: Voltage = DISP\_V \* 10<sup>-1</sup> , Kilowatt-Hour = DISP\_KWH \* 10<sup>-3</sup>

Note2: CT = 0.2 or 1.0

Current = DISP\_A \* 10<sup>-3</sup> , Kilowatt = DISP\_KW \* 10<sup>-4</sup>

CT = 10.0

Current = DISP\_A \* 10<sup>-2</sup> , Kilowatt = DISP\_KW \* 10<sup>-3</sup>