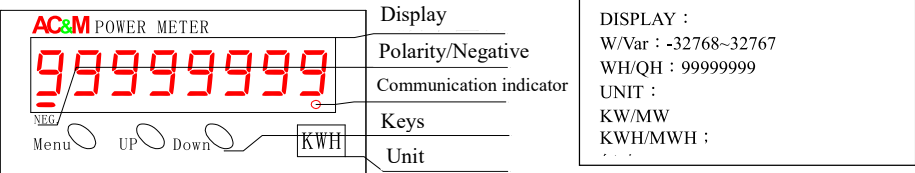


1.Panel and Keys



2.Keys Function

KEY	FUNCTION	INSTRUCTION
Menu	Menu / Confirm	Enter menu/Confirm setting
UP	Change number / Turn page	Page up
Down	Change position / Turn page	Page down

3.Parameter Setting

3.1 Basic Setting (Press Menu for 2 seconds to enter setting mode)

Menu	Function	Instruction
PHASE Press Menu	Press UP 3P4W	System Press Down to select 1P2W-1-3W-3P3W-3P4W
PT Press Menu	Press UP 000 1.0	PT ratio Press UP and Down to set. Range: 1-5999.9
CT Press Menu	Press UP 000 1	CT ratio Press UP and Down to set. Range: 1-9999
Unit Press Menu	Press UP H.	Unit Press Down to select KW/MW
d0t Press Menu	Press UP .8.888	Decimal point Press Down to set 888.8
id Press Menu	Press UP 050	Address Press UP and Down to set. Range: 1~255
bAud Press Menu	Press UP 96	Baudrate Press Down to select 1200-2400-4800-9600-19200-38400-57600-115200
PAR Press Menu	Press UP 8n 1	Parity check Press Down to select 8N1-8N2-8O1-8O2-8E1-8E2 (PARITY)
PUL 1 Press Menu	Press UP . 1	PULSE1 Press Down to select 1-10-100-0.01-0.1 PULSE / WH Press UP to select corresponding output signal : +WH/-WH/+QH/-QH Note : Corresponding to secondary value
PUL2 Press Menu	Press UP -. 2	PULSE2
FUnC Press Menu	Press UP 0000	NO function No need to set.
SAve Press Menu	Press UP 0000	Save setting Press UP and Down to key in password 0088 to confirm settings.

Note : Any settings will only be effective after entering password.

3.2 Setting example

EX1 : 3Phase 4Wire , Voltage : 380/220V ; Current : 600/5A W=380*600*√3 =394.9KW(Max.)

	Parameter	Instruction
PHASE	3P4W	3Phase4Wire
PT	000 1.0	PT ratio= 1

CT	0 120	CT ratio= 120
Unit	H.	Unit is KW
d0t	.888.8	Max. Watt is 394.9KW,so set as one digit after decimal point.
EX2 : 3Phase 3Wire , Voltage : 22KV/110V ; Current : 2000/5A W=22000*2000*√3 =76.21MW(Max.)		
	Parameter	Instruction
PHASE	3P3W	3Phase 3Wire
PT	0200.0	PT ratio=200
CT	0400	CT ratio=400
Unit	M.	Unit is MW
d0t	.88.88	Ma. Watt is 76.21MW, so set as two digits after decimal point.

Note : Any change of the decimal setting will only be effective after resetting the accumulated value.(Please see 3.3)

3.3 Reset accumulated value

Press Down for 2 seconds to enter 0000

Display	Instruction
00000	Press UP and Down to key in password 0088 to reset.
	Press Menu to confirm setting

3.3 Change password

Press Down for 2 seconds to enter FUnC 0000 Press UP and Down to enter 0087 Press Menu to enter setting:

	Instruction
00000	Press UP and Down to key in old password.
Press Menu	
00000	Press UP and Down to key in new password.
Press Menu	
00000	Press UP and Down to key in new password again.
	Press Menu to finish setting.

3.4 Auto page-turning: AUTO/STOP

Press Down for 2 seconds to enter FUnC 0000 Press UP and Down to enter 0043 Press Menu to enter setting:

	Instruction
AUTO	Press Down to select AUTO / STOP
	Press Menu to confirm setting

4.Analog Output Setting

4.1 Function

- 1. 500Ω at 20mA , Voltage: 10 mA (Max)
- 2.Output corresponding signal: 1-2V/2-3V/3-1V/1A/2A/3A/W/Q/VA/PF/HZ

4.2 Setting

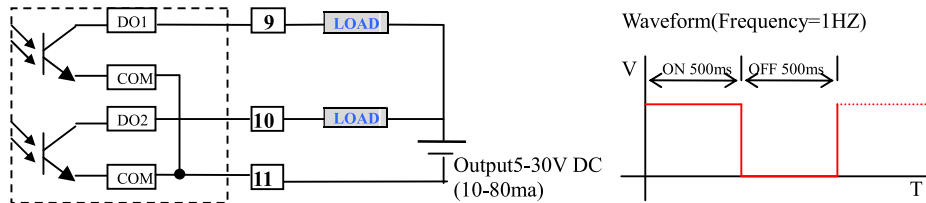
Enter FUnC 0000 PressUP and Downto enter 0060 Press Menu to enter setting mode

	Setting instruction
1-2u	Press Down to select (1-2u/2-3u/3- 1u/ 1A/2A/3A/1V/1uA/PF/ H2)
Press Menu	
0000	Press UP and Down to set corresponding value at 20mA
Press Menu	
SAVE	
Press Menu	
0000	Press UP and Down to key in password 0099
	Press Menu to finish setting.

5. Pulse output setting (Optional)

5.1 Function and connection

1. Dual pulse output
2. Corresponding signals: (+WH、-WH、+VarH、-VarH)
3. Programmable: (100-10-1-0.1-0.01)Pulse / wh (secondary value)

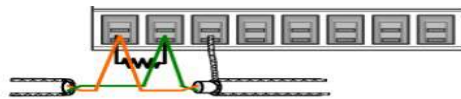


6. Communication

6.1 Function

1. MODBUS RTU MODE
2. RS485 (Half-Duplex)
3. Baudrate: (1200-2400-4800-9600-19200-38400-57600-115200)
4. Parity : (NONE-ODD-EVEN)
5. Address : 1-255
6. Stop Bit: 1 or 2
7. Data Bit: 8

6.2 Connection



Terminator:
In RS-485 circuit, there can only be 1 meter installed terminator. It's installed in the last meter of the circuit. Terminator : 120~150ohm

6.3 MODBUS RTU MODE PROTOCOL

DATA FORM (hexadecimal)

(ID Number) 1Byte	(Function Code) 1Byte	(Data) N Byte	CRC 2 Byte
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ID Number : The address of the meter (1-255)

CRC : Error check 16Bit CRC

FUNCTION CODE

03 (03H)	Read parameters of meter
06 (06H)	Set parameter

6.4 EXAMPLE

EX1. Read the R phase voltage of the meter .Master calls meter ID:1 to read address 0001. Data number:0001

Master sends message: TX : 01 03 00 01 00 01 D5 CA (Total:8 Byte)				
ID NUMBER 1Byte (01H)	Function code 1Byte (03H)	Address 2Byte (00 01H)	Data number 2Byte (00 01H)	CRC 2Byte (D5 CA)

Meter displays 1000

Meter responds RX : 01 03 00 02 03 E8 B8 FA				
ID NUMBER (01H)	Function code (03H)	Data Byte (02H)	Data (03E8H)	CRC (B8FAH)

EX2. Read several parameters of the meter

Master sends message: (Total:8 Byte)				
ID NUMBER 1Byte (01H)	Function code 1Byte (03H)	Address 2Byte (00 02H)	Data number 2Byte (xx,xxH = N)	CRC 2Byte (xx xxH)

Meter responds				
ID NUMBER (01H)	Function code (03H)	Data Byte (XXH = N)	Data (N*2Byte) xxH,xxH.xxH.....	CRC (xx xxH)

6.5 Data address

Address	Name	Length (Byte)	Signed / Unsigned	Range	Function code	Instruction
00~09	No function					
10	40011 Σ W	2Byte	Signed Int	-32767~3278	03H	
11	40012 Σ Q	2Byte	Signed Int	-32767~3278	03H	
12~13	No function					
14	40015 WH (Receive)(LO word)	4Byte	Unsigned Long	99999999	03H	Long integral HI_Word and LO_Word Read decimal point 0022 PS : W/Q/VA/WH/AH Same decimal poin
15	40016 WH (Receive)(HI word)	4Byte	Unsigned Long	99999999	03H	
16	40017 WH (Send)(LO word)	4Byte	Unsigned Long	99999999	03H	
17	40018 WH (Send)(HI word)	4Byte	Unsigned Long	99999999	03H	
18	40019 VarH(LAG) (LO word)	4Byte	Unsigned Long	99999999	03H	
19	40020 VarH(LAG) (HI word)	4Byte	Unsigned Long	99999999	03H	
20	40021 VarH(LEAD) (LO word)	4Byte	Unsigned Long	99999999	03H	
21	40022 VarH(LEAD) (HI word)	4Byte	Unsigned Long	99999999	03H	
22	40023 Decimal point (bit0-bit7 no function) W/Q(bit8-bit11)	2Byte	Unsigned Int		03H	00000001=1 digit after decimal point 00000010=2 digit after decimal point 00000011=3 digit after decimal point

Note: Unsigned Int = 0-65535 ; Signed Int: Positive=0-32767 ; Negative : 32768-65535 (-32767)

7. Connection diagram

