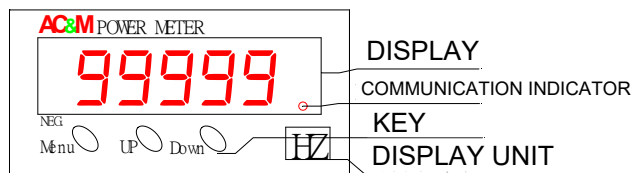


1. Panel and Keys



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	3P4L	NO function No need to set.
Pt Press Menu	000 1.0	NO function No need to set.
Ct Press Menu	000 1	NO function No need to set.
U _n L t Press Menu	H ₁	NO function No need to set.
dO t Press Menu	18.888	NO function No need to set.
id Press Menu	050	Address Press UP and Down to set. Range: 1~255
baud Press Menu	96	Baudrate Press Down to select 1200-2400-4800-9600-19200-38400-57600-115200
PAR i Press Menu	8n 1	Parity check Press Down to select 8N1-8N2-8O1-8O2-8E1-8E2 (PARITY)
PUL 1 Press Menu	1 1	NO function No need to set.
PUL 2 Press Menu	1 2	NO function
FUnC Press Menu	0000	NO function No need to set.
SAvE Press Menu	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.

3.3 Change password

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

Instruction

- 0000** Press **UP** and **Down** to key in old password.
- 0000** Press **Menu** Press **UP** and **Down** to key in new password.
- 0000** Press **Menu** Press **UP** and **Down** to key in new password again.
- 0000** Press **Menu** to finish setting.

4. Analog Output Setting

4.1 Function

500Ω at 20mA · Voltage: 10 mA (Max)

4.2 Setting

Setting example:

If the HZ range is 50±10HZ, please set as 50.10

Enter **FUnC 0000** Press **UP** and **Down** to enter **0050**

Press **Menu** to enter setting mode

Setting instruction

- HZ** Press **Down** to select **HZ**
- 50.10** Press **UP** and **Down** to set corresponding value at 20mA
- SAvE** Press **Menu**
- 0000** Press **UP** and **Down** to key in password **0099**
Press **Menu** to finish setting.

5. Communication

5.1 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

5.2 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

5.3 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

5.4 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)

5.5 Data address

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

Address		Name	Lengt h (Byte)	Signed / Unsigned	Range	Function code	Instruction
Address	Modbus						
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)					
16	40017	WH (Send)(LO word)	4Byte	Unsigned Long	99999999	03H	
17	40018	WH (Send)(HI word)					
18	40019	VarH(LAG) (LO word)	4Byte	Unsigned Long	99999999	03H	
19	40020	VarH(LAG) (HI word)					
20	40021	VarH(LEAD) (LO word)	4Byte	Unsigned Long	99999999	03H	
21	40022	VarH(LEAD) (HI word)					
22	40023	Decimal point (bit0-bit7 no function) W/Q(bit8-bit11)	2Byte	Unsigned Int		03H	0000001=1 digit after decimal point 0000010=2 digit after decimal point 0000011=3 digit after decimal point

6.Connection diagram

