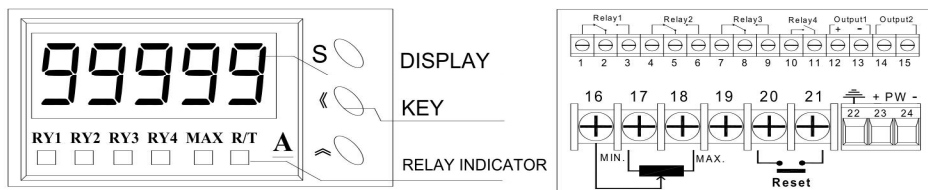


MMP MANUAL

1.Panel and Keys



2.Keys Function

S	:	Setting / Select
△	:	Change number / Enter
>	:	Change position

ZERO function :
In display mode,press> for 2 seconds to set current value as zero.

3.Parameter Setting

3-1 Basic Setting *In the below setting instruction, P means Press.*

Display	Function	Instruction
modE → P → mP	Potentiometer	No need setting
Lo' → P → 00000	Display Low value	Press> and △ to set the lowest display value. Range: -19999~99999Count
H' → P → 99999	Display High value	Press> and △ to set the highest display value. Range: -19999~99999Count
dot → P → 88888	Decimal Point	Press> to set decimal point position.
oUt → P → OP-H OP-L	Output Signal	Press> to select 4-20mA/0-20mA or 0-10V/1-5V/0-5V Press S to enter OP_H to set corresponding value(high) Press S to enter OP_L to set corresponding value(low) (Note: mA and V can't exchange)
id → P → 9600 8n1	Address Baud rate Format	Press> and △ to set address Press S and Press> to select 4800-9600-19200-38400 Press S and Press> to select None/Odd/Even/ 8n1-8n2.
Adj → P → 19999	Display Adjustment	Press> and △ to adjust display value. Range: -19999~19999Count
FUnC → P → 0000	Advance setting	No need setting
SAvE → 0000	Save	Press S to enter no/YES Press> to select YES. Press S to save setting.

3-2 Relay Setting (Alarm) *In the below setting instruction,P means Press.*

Long press "S" to enter menu. Press "△" to enter setting. Press > and △ to set.

Display	Function	Instruction
H L0 → HHHH	Relay setting	Press△to select HI_Alarm or LO_Alarm. Press> to change position. (HHHH means 4 sets of HI relays)
r 1 → 00000	RY1 action point	Press> and △ to set. Range±19999
r 1-2 → 00000	RY1 deadband	Press> and △ to set. Range±19999
r 1-3 → 0000.0	RY1 delay time	Press> and △ to set. Range 0~1999.9 second
r 2-1 → 00000	RY2 action point	Press> and △ to set. Range±19999
r 2-2 → 00000	RY2 deadband	Press> and △ to set. Range±19999
r 2-3 → 0000.0	RY2 delay time	Press> and △ to set. Range 0~1999.9 second
r 3-1 → 00000	RY3 action point	Press> and △ to set. Range±19999
r 3-2 → 00000	RY3 deadband	Press> and △ to set. Range±19999
r 3-3 → 0000.0	RY3 delay time	Press> and △ to set. Range 0~1999.9 second
r 4-1 → 00000	RY4 action point	Press> and △ to set. Range±19999
r 4-2 → 00000	RY4 deadband	Press> and △ to set. Range±19999
r 4-3 → 0000.0	RY4 delay time	Press> and △ to set. Range 0~1999.9 second
dELy → 00000	Start delay time	Press> and △ to set. Range 0~1999.9 second
SAvE	Press S to enter no/YES	Press> to select YES. Press S to save setting.

4.Meter setting example:

EX.1 Input: 0~50KΩ Display: 0~50.00KΩ Output: 4-20mA(0-50.00)

Relay: 4 sets HI-Alarm

Alarm action point RY1 =40.00KΩ ; RY2=30.00KΩ ; RY3=20.00KΩ ; RY4=10.00KΩ

Delay time: 0 second

Parameter setting:

IN	No need to set	OP	4-20
DS-LO	000.00		OP-hi 050.00
DS-HI	50.00		OP-lo 000.00
Dot	888.88	ADJ	No need to set

Relay alarm setting

H-L	HHHH		
RY1	40.00	Delay time	0000
RY2	30.00	Dead band	000
RY3	20.00	**Please refer to title 7 for alarm function explanation.	
RY4	10.00		

5. Buffer Size (The number of measurements for RMS sliding averaging)

1. Fast speed (**FAST**)
 2. Midium speed (**HI 9H**)
 3. Low speed (**LO!**)
- Preset as medium: (**HI 9H**)

Enter **FUNC 0000** Press > and Δ to enter **00011**

Press **Menu** to enter setting

Display Instruction

HI 9H

Press > to select **FAST / HI 9H / LO!**

Press **Menu** to save setting.

6. Communication Protocol

MODBUS – RTU MODE

Data Format

(ID Number) 1Byte	(Function Code) 1Byte	(Data) N Byte	CRC 2 Byte
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Function Code

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

EX1. Read meter display value

Master sends message Tx: 01 03 00 01 00 02 95 CB				
ID Number 1Byte (01H)	Function 1Byte (03H)	Address 2Byte (00 01H)	DATA number 2Byte (00 02H)	CRC 2Byte (95 CBH)

Instruction : Master calls meter ID No.1 to read address 0002.Data number 0001

If meter displays 90000

Meter responses to Master RX : 01 03 04 5F 90 00 01 29 CA				
ID Number (01H)	Function (03H)	Byte (04H)	Data (5F 90 ; 00 01H)	CRC (29 CAH)

Ex2. Read parameters of the Meter

Master sends message to Meter				
ID Number 1Byte (01H)	Function 1Byte (03H)	Address 2Byte (00 02H)	DATA number 2Byte (xxH,xxH = N)	CRC 2Byte (xxH,xxH)
Meter responses to Master				
ID Number (01H)	Function (03H)	Byte (XXH = N)	Data (N*2Byte) XxH,xxH.xxH.....	CRC (xxH,xxH)

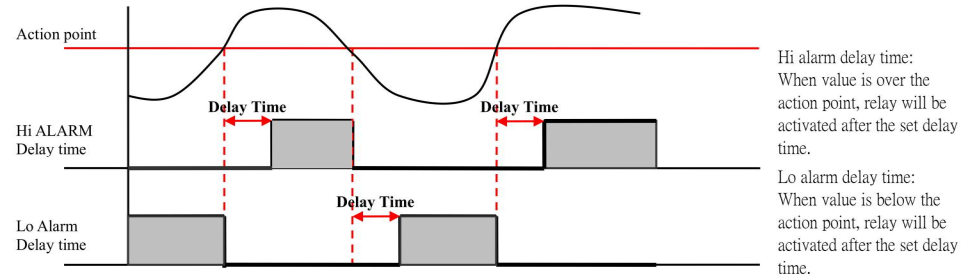
Parameter/Address cross-reference

Add ress	Length	Name	Instruction	(Read/Write)
01	4Byte	Display value	Range: -19999 – 99999	R
02			01(low) 02(high)	
03	2Byte	Decimal point	Decimal Point Position	R/W

04	2Byte	Relay state	Bit3=RY4 Bit2=RY3 Bit1=RY2 Bit0=RY1 (0 = OFF , 1 = ON)	R
05	4Byte	CT ratio	Setting range: (-19999 – 99999) 05(low) 06(high)	R/W
06				
07	xxxxxxx			
08				
09	4Byte	OP_HI	Setting range: (-19999 – 99999) 01(low) 02(high)	R/W
10				
11	4Byte	OP_LO	Setting range: (-19999 – 99999) 11(low) 12(high)	R/W
12				

7. Alarm Function Explanation

1 - Delay time.



2 - Dead band

