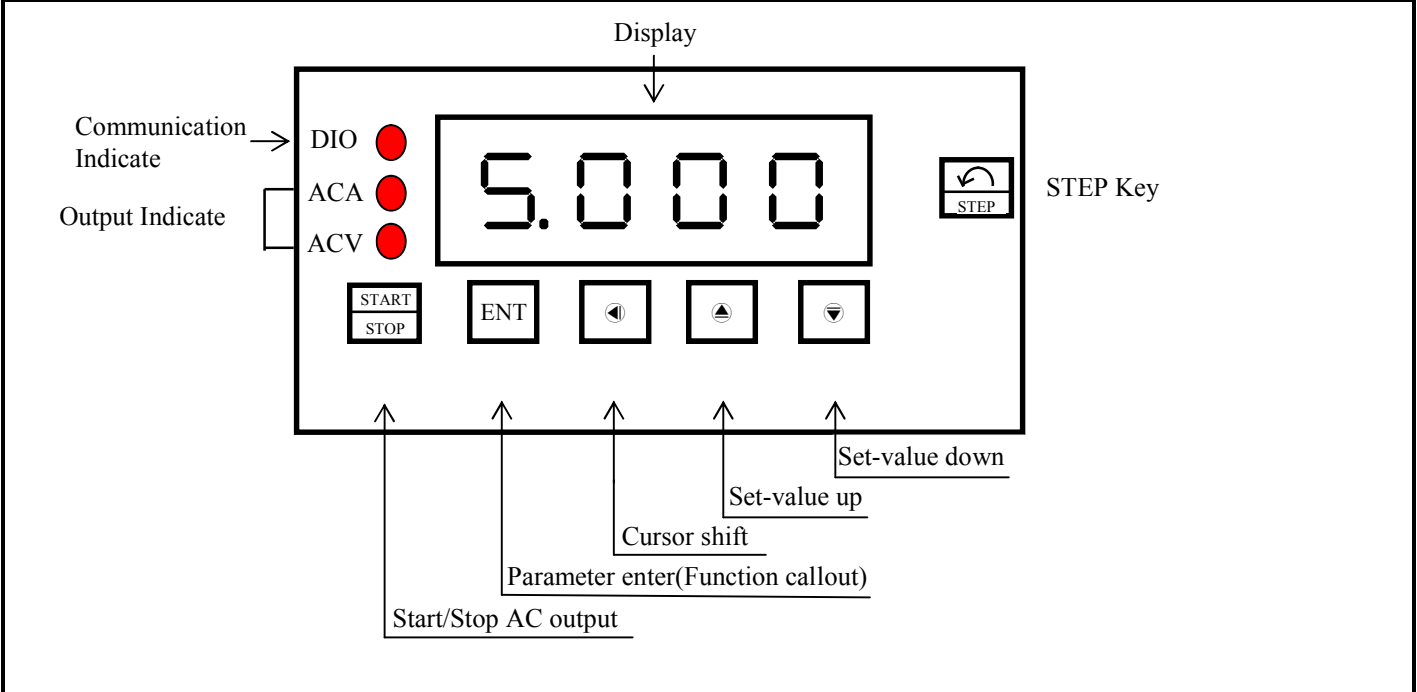


# AXE MICROPROCESS AC CURRENT/VOLTAGE CALIBRATOR METER MAG series

## ■ Features

- ⊙ Accuracy  $\pm 0.1\%$  F.S
- ⊙ Calibrator for AC current (AC0-5.000A)/ AC voltage (AC0-99.99V/AC0-600.0V)
- ⊙ AC output frequency 45.0~65.0Hz adjustable function
- ⊙ Output by Setting value at Panel, Step key or communication
- ⊙ RS485 communication interface, Protocol MODBUS RTU MODE
- ⊙ BAUD RATE:38400/19200/9600/4800/2400
- ⊙ 0.56" highlight display
- ⊙ Man-machine interface, easy to operate
- ⊙ EEPROM Saving, data safekeeping about 10 years

## ■ Name of Parts



| Key Introduce           | Operation Manual  |                |  |
|-------------------------|---|----------------|--|
| ⊞ Key function          | 1. In normal display, the key function is call out setting group.<br>2. In parameter setting page, the key function is data ENTER and goto next page.   |                |  |
| ◀ Key function          | 1. In normal display, press ◀ key is set cursor shift of output value<br>2. Into parameter setting page, the parameter mark & data is alternate display, If need modify data can press ◀ key into setting page, 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.(Key response about 0.2 sec.) |                |  |
| ▲ Key function          | 1. In normal display, press ▲ key is set-value up of output value<br>2. Into parameter setting page, the parameter mark & data is alternate display, if need modify data can press ▲ 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 be increment.(Key response about 0.2 sec.)            |                |  |
| ▼ Key function          | 1. In normal display, press ▼ key is set-value down of output value<br>2. Into parameter setting page, the parameter mark & data is alternate display, if need modify data can press ▼ 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 be decrement.(Key response about 0.2 sec.)          |                |  |
| STEP Key function       | 1. In output state press STEP key, output value will step down by Step Percent in parameter, if output value down to 0%, it's will return 100% by press STEP key again  |                |  |
| START/STOP Key function | 1. AC output enable by press START/STOP Key (Led output indicate ON), and AC output disenable (Led output indicate OFF) by press START/STOP Key again   |                |  |
| ▲&▼ Key function        | In setting page, press ▲&▼ key will return normal display, but if in setting page the modify data will lost   |                |  |
| No key in anything      | In setting page, no key in anything about 2 minutes, will return normal display   |                |  |
| Step                    | Parameter Mark Description  | Parameter Mark | Operation Manual   |
| 1-1                     | Normal display  | 1 2 3 4        | Press ⊞ key into Freq setting page   |
| 1-2                     | Freq (Output Frequency)<br>Default 60.0Hz   | F r E 9        | 1. Decide Output Frequency with ▲&▼ key(45.0/50.0/55.0/60.0/65.0 Hz)<br>2. Press ⊞ key enter data and into STEP setting page |
|                         |   | 6 0 . 0        |  |
| 1-3                     | STEP(Step Percent)<br>Default 50.0  | S t E P        | 1. Decide Step Percent with ◀&▲&▼ key(0~100.0%)<br>2. Press ⊞ key enter data and into SPAN setting page                      |
|                         |   | 5 0 . 0        |  |

|      |  |                |   |
|------|--|----------------|---|
| 1-4  | SPAN(SPAN Adjustment)<br>Default 1.000             | S P A N        | 1.Decide SPAN with ◀&▲&▼ key(0.950~1.050)<br>2.Press Ⓜ key enter data and into ADDR setting page          |
|      |  | 1.000          |   |
| 1-5  | ADDR(Communication Address)<br>Default 0           | A D D R        | 1.Decide ADDR with ◀&▲&▼ key(0~255)<br>2.Press Ⓜ key enter data and into BAUD setting page                |
|      |  | 0000           |   |
| 1-6  | BAUD(Communication Baud Rate)<br>Default 19K2      | b A U D        | 1.Decide BAUD with ▲&▼ key(38K4/19K2/9K6/4K8/2K4)<br>2.Press Ⓜ key entry data and into PARI setting page  |
|      |  | 19K2           |   |
| 1-7  | PARI(Communication Parity Check)<br>Default n.8.2. | P A R I        | 1.Decide PARI with ▲&▼ key (n.8.2/n.8.1/even/odd)<br>2. Press Ⓜ key entry data and return normal display. |
|      |  | n.8.2.         |   |
| Step | Parameter mark description                         | Parameter mark | Operation manual  |
| 2-1  | AC output Setting                                  | 1 2 3 4 5      | 1.In normal display setting AC output value with ◀&▲&▼ key<br>2.Press Ⓜ enter data                        |

| Appendix | Error Mark Description        | Error Mark | Analyze & Description  |
|----------|-------------------------------|------------|--|
| 1        | AC output over error detect   | A O E r    | AC output over range(Max output watt. ± 5%)  |
| 2        | AC feedback over error detect | A I E r    | AC feedback over range (Max read value + 10%)  |
| 3        | EEPROM error detect           | E - 00     | 1. External interference when EEPROM read/write<br>2.EEPROM write over 1 million times(guarantee 10 years)<br>Please power reset, if still display E-00,doing following step:<br>a.E-00 & No alternate display for inquire reset EEPROM<br>b.Decide Yes with ▲key,press Ⓜ key return normal display<br>c.EEPROM was reset,Please follow step 1~2 set again |
|          |                               | n 0        |  |
|          |                               | 4 E 5      |  |

**Note1: The 5A output terminal and receiving terminal must be fixed with screw terminals.**

# Modbus RTU Mode Protocol Address Map

Data format 16Bit, sign bit 8000~7FFF( -32768~32767)

| Address | Name     | Description  | Accept |
|---------|----------|--|--------|
| 0000    | ID       | Type code judge,MAG=0000   | R      |
| 0001    | STATUS   | STATUS, display range 0000~0303(0~771)(0:OFF,1:ON)<br>(Bit0:STEP,Bit1:START,Bit8: AiEr,Bit9:AoEr) <sup>(1)</sup> | R      |
| 0003    | TYPE     | Output Type, Display Range0000~0002(0~2)0:5.000A,1:600.0V,2:99.99V   | R      |
| 0004    | FREQ     | Output frequency, Input Range 0000~0004(0~4)0:45Hz,1:50Hz,2:55Hz,3:60Hz,4:65Hz                                   | R/W    |
| 0005    | BAUD     | Communication Baud Rate, Input Range 0000~0004(0~4) 0:38K4,1:19K2,2:9K6,3:4K8,4:2K4                              | 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    | ADDR     | Communication Address, Input Range 0000~00FF(0~255)  | R/W    |
| 0008    | STEP     | Step percent, Input Range 0000~03E8(0~1000)  | R/W    |
| 000B    | SPAN     | SPAN adjustment, Input Range 03B6~041A(0950~1050)  | R/W    |
| 0012    | SET      | AC Output setting, Input Range 0000~9999(0~270F) <sup>(2)</sup>  | R/W    |
| 0013    | KEY_STEP | Key in STEP simulation, Input=1: Like press STEP key once time   | W      |
| 0014    | KEY_STAR | Key in START simulation, Input Range 0000~0001(0~1) 0:OUT=0,1:OUT=DISP*STEP                                      | W      |

Note1: STATUS bits indicate

Bit9(AoEr), 0:Output normal, 1:Output overload

Bit8(AiEr), 0:Feedback Normal, 1: Feedback overload

Bit1(START) , 0:OUT=0, 1:OUT=DISP\*STEP

Bit0(STEP), 0:No STEP Key in active, 1: Had STEP Key in active

Note2:

TYPE=0(5.000A): SET Input Range: 0000~5000(0~1388)

TYPE=1(600.0V): SET Input Range: 0000~6000(0~1770)

TYPE=2(99.99V): SET Input Range: 0000~9999(0~270F)

Note3:

STEP = 1.0, while into parameter setting page or press any key(unless STEP key)