

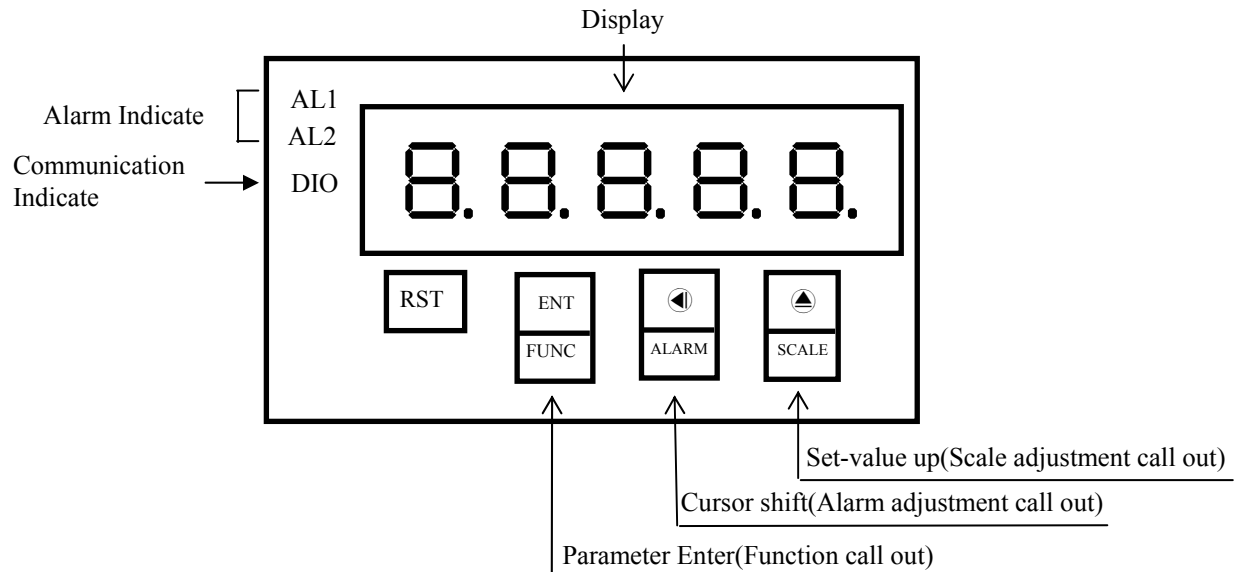
# AXE 5 Digit Microprocess Counter

MCS series

## FEATURES

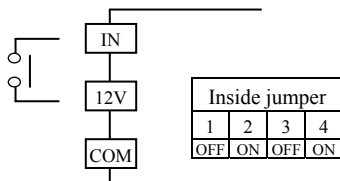
|  |  |
|--|--|
| Accept more type sensors (switch, encoder, proximity switch, etc) finish length/flow control<br>Readout Range from -19999~99999<br>Input scaling multiplied 0.0001 to 9.9999 can be modified<br>Power down saving<br>Decimal point can be modified<br>Four counting modes Up, Down, Up/Down, Quadrature<br>Reset by panel or connect terminal<br>Quadrature sensing up to 4 times resolution | 16BIT DAC analog output can be modified, 0~10V/4~20mA by inside switch jumper<br>N,R,C alarm control mode<br>RS485 Communication interface, Protocol MODBUS RTU MODE<br>BAUD RATE:19200/9600/4800/2400<br>0.4" highlight display<br>Man-machine interface, easy to operate<br>EEPROM Saving, data safekeeping about 10 years<br>Modified inside parameter, must have pass code |
|--|--|

## Name of Parts

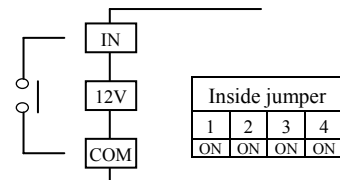


## Connect Diagram

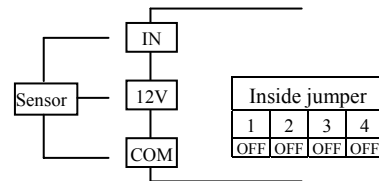
Contact input (PNP)



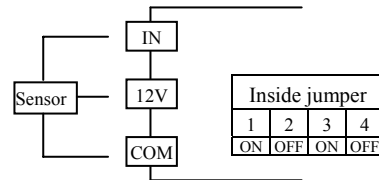
Contact input (NPN)



Sensor input (PNP 12V)



Sensor input (NPN 12V)



## Input function jumper table

|     |   |            |                      |              |
|-----|---|------------|----------------------|--------------|
| □ □ | 4 | Position 4 | ON: B channel 0~50Hz | OFF: 0~10KHz |
| □ □ | 3 | Position 3 | ON: B channel NPN    |              |
| □ □ | 2 | Position 2 | ON: A channel 0~50Hz | OFF: 0~10KHz |
| □ □ | 1 | Position 1 | ON: A channel NPN    |              |

## ■ Alarm output control mode description

N(MANUAL):When count value equal setting value the relay ON & continue count until reset by panel or connect terminal then relay OFF & count value return to RST setting value  
 R(RETURN):When count value equal setting value the relay ON & continue count until relay action time out then relay OFF & count value return to RST setting value  
 C(CONTINUE):When count value equal setting value the relay ON & count value return to RST setting value then continue count & relay action time out the relay OFF  
 N/R/C control mode is according to AL1 setting value  
 WARN =YES:When count to Pre-Warn value[AL1-AL2] RELAY 2 ON,Count to AL1 value RELAY 1 ON and run N,R,C  
 WARN = NO:AL1 and AL2 is setting Alarm value independently.

| 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 go to next page  |
| Ⓜ Key Function     | 1. In normal display, The key function is call out alarm value setting page<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 cursor(twinkle express)is cycle moving left. (Key Response about 0.2 sec) |
| ▲ Key Function     | 1. In normal display, The key function is call out adjustment display scale page<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 increment. (Key Response about 0.2 sec)          |
| Ⓜ&▲ Key Function   | 1. In setting group or setting page press Ⓜ&▲ key return normal display, but if in setting page the modify data will be lost  |
| No Key in anything | 1. In setting group or 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<br>0 0 0 0 0 | 1. Key in 5 digit pass code with Ⓜ or ▲ key<br>2. Press Ⓜ key, the pass code is right into setting group, otherwise return normal display |
| 3    | SYS(System setting group)        | S Y S                | 1. Select setting group with Ⓜ key<br>2. Press Ⓜ key into setting page of selection setting group   |
|      | ROP(Alarm setting group)         | r o P                |   |
|      | AOP(Analog output setting group) | A o P                |   |
|      | DOP(Communication setting group) | d o P                |   |

| Step | Parameter mark description                                | Parameter mark       | Operation manual   |
|------|---|----------------------|--|
| 4    | SYS(System setting group)                                 | S Y S                | 1. Press Ⓜ key decide SYS setting group , press Ⓜ key into DP setting page                                   |
| 4-1  | DP(Decimal Point setting page)<br>Value on EEPROM reset=0 | d P<br>0             | 1. Decide decimal point position with ▲ key (0 to 4)<br>2. Press Ⓜ key enter data and into TYPE setting page |
| 4-2  | TYPE(Input Type setting page) Value on EEPROM reset=1U2D  | t Y P E<br>1 U 2 d   | 1. Decide input type with ▲ key (1U2D/1P2D/1A2B)<br>2. Press Ⓜ key enter data and into RST setting page      |
| 4-3  | WARN(Pre-Warn)<br>Value on EEPROM reset=NO                | w A r n<br>n o       | 1. Decide Pre-Warn mode with ▲ key(NO or YES)<br>2. Press Ⓜ key enter data and into CODE setting page        |
| 4-4  | RST(Reset Value)<br>Default=0                             | r S t<br>0 0 0 0 0   | 1. Decide reset value with Ⓜ or ▲ key(-19999~99999)<br>2. Press Ⓜ key enter data and into CODE setting page  |
| 4-5  | CODE(Pass Code setting page)<br>Value on EEPROM reset=0   | C o d e<br>0 0 0 0 0 | 1. Decide pass code with Ⓜ or ▲ key(0~999999)<br>2. Press Ⓜ key enter data and into LOCK setting page        |

|             |  |                       |  |
|-------------|--|-----------------------|--|
| 4-6         | LOCK(Panel Lock setting page)<br>Value on EEPROM reset=NO                    | LOCK<br>NO            | 1.Decide panel lock with ▲ key(NO or YES)<br>2.PressⓂkey enter data and return SYS setting group   |
| <b>Step</b> | <b>Parameter mark description</b>  | <b>Parameter mark</b> | <b>Operation manual</b>  |
| 5           | ROP(Alarm setting group)   | ROP                   | 1.Press ◀ key decide ROP setting group, press Ⓜ key into OP.MODE setting page  |
| 5-1         | OP.MODE(Output Mode)<br>Default=N  | OP.MOd<br>N           | 1.Decide output mode with ▲ key(N,R,C)<br>2.PressⓂkey enter data and into ACTT.1 setting page  |
| 5-2         | ACTT.1(Active Time AL1)<br>Default=0.1                                       | ACTT.1<br>0000.1      | 1.Decide AL1 active time with ◀&▲ key(0.1~99.9 sec.)<br>2.PressⓂkey enter data and return ROP setting group  |
| <b>Step</b> | <b>Parameter mark description</b>  | <b>Parameter mark</b> | <b>Operation manual</b>  |
| 6           | AOP(Analog output setting group)   | AOP                   | 1.Press ◀ key decide AOP setting group , press Ⓜ key into ANLO setting page  |
| 6-1         | ANLO(A/O Zero According to Display setting page)Value on EEPROM reset=0      | ANLO<br>00000         | 1.Decide ANLO with ◀ or ▲ key(-19999~99999)<br>2.PressⓂkey enter data and into ANHI setting page   |
| 6-2         | ANHI(A/ O Span According to Display setting page)Value on EEPROM reset=99999 | ANHI<br>99999         | 1.Decide ANHI with ◀ or ▲ key(-19999~99999)<br>2.PressⓂkey enter data and into Analog Output Zero Adjustment page  |
| 6-3         | AZERO(Analog Output Zero Adjustment page)<br>Value on EEPROM reset=0         | AZERO<br>00000        | 1.Adjustment analog output zero with ◀ or ▲ key(±5999)<br>2.PressⓂkey enter data and into ASPAN adjustment page  |
| 6-4         | ASPAN(Analog Output Span Adjustment page)<br>Value on EEPROM reset=0         | ASPAN<br>00000        | 1.Adjustment analog output span with ◀ or ▲ key(±5999)<br>2.PressⓂkey enter data and return AOP setting group  |
| <b>Step</b> | <b>Parameter mark description</b>  | <b>Parameter mark</b> | <b>Operation manual</b>  |
| 7           | DOP(Communication setting group)   | DOP                   | 1.Press ◀ key decide DOP setting group, press Ⓜ key into ADDR setting page   |
| 7-1         | ADDR(Communication Address setting page )<br>Value on EEPROM reset=0         | ADDR<br>00000         | 1.Decide address with ◀ or ▲ key(0~255)<br>2.PressⓂkey enter data and into BAUD setting page   |
| 7-2         | BAUD(Communication Baud Rate setting page)Value on EEPROM reset=19200        | BAUD<br>19200         | 1.Decide baud rate with ▲ key(19200,9600,4800,2400)<br>2.PressⓂkey enter data and into PARI setting page   |
| 7-3         | PARI(Communication Parity Check setting page)Value on EEPROM reset=n82       | PARI<br>n.8.2.        | 1.Decide parity check with ▲ key(n82,n81,even,odd)<br>2.PressⓂkey enter data and return DOP setting group<br>*If parity check setting is non , sometime STOP BIT must set 2 BIT              |
| <b>Step</b> | <b>Parameter mark description</b>  | <b>Parameter mark</b> | <b>Operation manual</b>  |
| 8           | Normal display   | 12345                 | 1.Press◀/ALARM key about 3 sec, into AL1 setting page  |
| 8-1         | AL1 (Alarm value 1 setting page)<br>Value on EEPROM reset=0                  | AL1<br>00000          | 1.Decide alarm value 1 with ◀ or ▲ key(-19999~99999)<br>2.PressⓂkey enter data and into AL2 setting page   |
| 8-2         | AL2 (Alarm value 2 setting page)<br>Value on EEPROM reset=0                  | AL2<br>00000          | 1.If WARN = NO,Decide alarm value 2 with ◀ or ▲ key (-19999~99999)<br>2.If WARN = YES,Decide Pre-Warn value with ◀ or ▲ key (-9999~9999)<br>2.PressⓂkey enter data and return normal display |
| <b>Step</b> | <b>Parameter mark description</b>  | <b>Parameter mark</b> | <b>Operation manual</b>  |
| 9           | Normal display   | 12345                 | 1.Press▲/SCALE key about 3 sec, into SCALE setting page  |

|                 |   |                   |   |
|-----------------|---|-------------------|---|
| 9-1             | SCALE (Display Scale setting page)<br>Value on EEPROM reset=1 | SCALE             | 1.Decide scale with ◀ or ▶ key(0.0001~9.9999)<br>2.PressⓂkey enter data and return normal display   |
|                 |   | 1.0000            |   |
| <b>Appendix</b> | <b>Error Mark description</b>                                 | <b>Error Mark</b> | <b>Analyze &amp; Description</b>  |
| 1               | 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>1.E-00 & No alternate display for inquire reset EEPROM<br>2. Decide Yes with ▶ key, press Ⓜ key return normal display<br>3. EEPROM has reset, Please follow step 1~9 set again |
|                 |   | no                |   |
|                 |   | YES               |   |

MCS Modbus RTU Mode Protocol Address Map

Data format 16Bit/32Bit,sign bit

8000~7FFF( -32768~32767 )/80000000~7FFFFFFF(-2147483648~2147483647)

| Address | Name    | Description  | Accep |
|---------|---------|--|-------|
| 0000    | DP      | Decimal point position,range 0000~0004(0~4)0:10 <sup>0</sup> ,1:10 <sup>-1</sup> ,2:10 <sup>-2</sup> ,3:10 <sup>-3</sup> ,4:10 <sup>-4</sup> | R/W   |
| 0002    | TYPE    | Input type, range 0000~0002(0~2)0:1U2D,1:1P2D,2:1A2B   | R/W   |
| 0004    | LOCK    | Panel lock, range 0000~0001(0~1)0:NO,1:YES   | R/W   |
| 0006    | OPMODE  | Output Mode, range 0000~0002(0~2)0:N,1:R,2:C   | R/W   |
| 0008    | ACTT.1  | Alarm 1 Active Time, range 0001~03E7(1~999)  | R/W   |
| 000A    | WARN    | Pre-Warn, range 0000~0001(0~1)0:NO,1:YES   | R/W   |
| 000C    | ADDR    | Communication address, range 0000~00FF(0~255)  | R/W   |
| 000E    | BAUD    | Communication baud rate, range   | R/W   |
| 0010    | PARI    | Communication parity check, range  | R/W   |
| 0012    | AZERO   | AZERO, range E891~176F(-5999~5999)   | R/W   |
| 0014    | ASPAN   | ASPAN, range E891~176F(-5999~5999)   | R/W   |
| 0016    | RST     | Display Reset Value, range FFFFB1E1~0001869F(-19999~99999)   | R/W   |
| 001A    | CODE    | Pass code, range 00000000~0001869F(0~99999)  | R/W   |
| 001E    | SCALE   | Display scale, range 00000001~0001869F(1~99999)  | R/W   |
| 0022    | ANLO    | ANLO, range FFFFB1E1~0001869F(-19999~99999)  | R/W   |
| 0026    | ANHI    | ANHI, range FFFFB1E1~0001869F(-19999~99999)  | R/W   |
| 002A    | AL1     | Alarm value 1, range FFFFB1E1~0001869F(-19999~99999)   | R/W   |
| 002E    | AL2     | Alarm value 2, range FFFFB1E1~0001869F(-19999~99999)   | R/W   |
| 0032    | DISPLAY | Display value, range FFFFB1E1~0001869F(-19999~99999)   | R     |
| 0036    | HRST    | HRST, input with value 0001(1) will reset Display value, read as 0   | R/W   |