

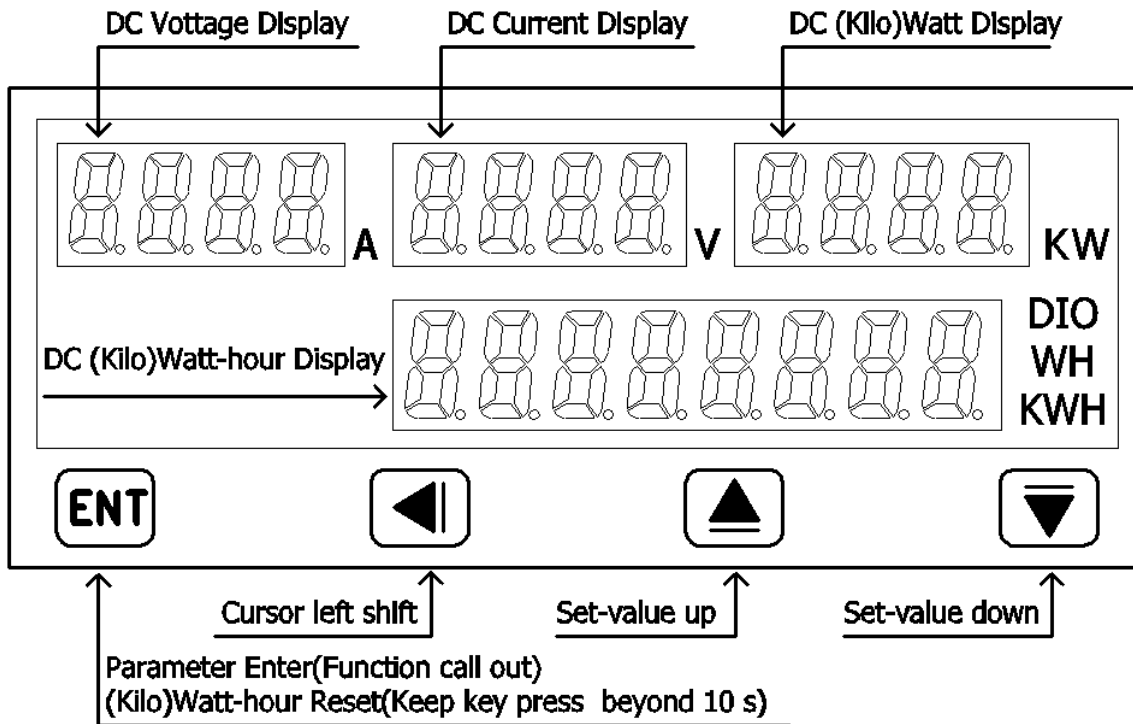
# AXE DC MULTI-POWER METER(Low Power)

MMX-D

## FEATURES

|   |   |
|---|---|
| Accuracy 0.05% FS ± 1 digit   | RS485 communication interface, Protocol MODBUS RTU MODE |
| Measuring and display DCV/DCA/W(KW)/WH(KWH)                                 | BAUD RATE:19200/9600/4800/2400                          |
| Auto range(DC 0~99.99V/0~600.0V) for voltage input                          | Man-machine interface, easy to operate                  |
| Programmable rate 0 to 9999 digit(DCA/W(KW)), 0 to 9999999.9 digit(WH(KWH)) | EEPROM saving data safekeeping about 10 years           |
|   | Protection class NEMA4/IP64                             |

## 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<br>3. When RST=0, Keep ⊕ key press beyond 10 seconds, Reset the (Kilo)Watt-hour accumulate value to zero  |
| ◀ key function     | 1. 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. 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. 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 decrement. (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   |

| Step | Parameter Mark Description | Parameter Mark | Operation Manual                      |
|------|----------------------------|----------------|---------------------------------------|
| 1    | Normal display             | 1 2 3 4        | 1. Press ⊕ key into A.DP setting page |

|     |  |          |  |
|-----|--|----------|--|
| 2   | A.DP (Current Decimal Point)<br>Default = 3          | A.dP     | 1.Decide Current Decimal Point location with ▲&▼ key(0~3)<br>2.Press Ⓜ key enter data and into A.DSP setting page  |
|     |  | 3        |  |
| 3   | A.DSP (Current Display High)<br>Default = 2000       | A.dSP    | 1.Decide Current Display High value with ◀&▲&▼ key(0~9999)<br>2.Press Ⓜ key enter data and into UNIT setting page  |
|     |  | 2000     |  |
| 4   | UNIT (Unit)<br>Default = W                           | U.n.t    | 1.Decide Watt or Kilowatt Unit select with ▲&▼ key(W/KW)<br>2.If UNIT = W(Watt),Press Ⓜ key enter data and into Step 5-1 W.DP setting page<br>3.If UNIT = KW(Kilowatt),Press Ⓜ key enter data and into Step 6-1 KW.DP setting page   |
|     |  | W        |  |
|     |  |          |  |
| 5-1 | W.DP(Watt Decimal Point)<br>Default = 0              | W.dP     | 1.Decide Watt Decimal Point location with ▲&▼ key(0~3)<br>2.Press Ⓜ key enter data and into WH.DP setting page   |
|     |  | 0        |  |
| 5-2 | WH.DP(Watt-hour Decimal Point)<br>Default = 1        | W.H.dP   | 1.Decide Watt-hour Decimal Point location with ▲&▼ key(0~1)<br>2.Press Ⓜ key enter data and into Step 7 RST setting page   |
|     |  | 1        |  |
| 6-1 | KW.DP(Kilowatt Decimal Point)<br>Default = 0         | W.dP     | 1.Decide Kilowatt Decimal Point location with ▲&▼ key(0~3)<br>2.Press Ⓜ key enter data and into KWH.D setting page   |
|     |  | 0        |  |
| 6-2 | KWH.D(Kilowatt-hour Decimal Point)<br>Default = 1    | W.H.d    | 1.Decide Kilowatt-hour Decimal Point location with ▲&▼ key(0~1)<br>2.Press Ⓜ key enter data and into Step 7 RST setting page   |
|     |  | 1        |  |
| 7   | RST(Reset Mode Select)<br>Default = 0                | rSt      | 1.Decide Reset Mode with ▲&▼ key(0~2)<br>RST=0: Panel Ⓜkey/Terminal(RST)/RS-485(communication) have Reset function<br>RST=1:Terminal(RST)/RS-485(communication) have Reset function<br>RST=2:Only RS-485(communication) have Reset function<br>2.Press Ⓜ key enter data and into ADDR setting page |
|     |  | 0000     |  |
|     |  |          |  |
| 8   | ADDR(Communication Address)<br>Default = 0           | A.d.d.r  | 1.Decide Communication Address with ◀&▲&▼ key(0~255)<br>2.Press Ⓜ key enter data and into BAUD setting page  |
|     |  | 0000     |  |
| 9   | BAUD(Communication Baud Rate)<br>Default = 19K2      | bA.U.d   | 1.Decide Communication Baud Rate with ▲&▼ key(19K2/9600/4800/2400)<br>2.Press Ⓜ key enter data and into PARI setting page  |
|     |  | 1922     |  |
| 10  | PARI(Communication Parity Check)<br>Default = n.8.2. | P.A.R.I. | 1.Decide Communication Parity Check with ▲&▼ key (n.8.2/n.8.1/even/odd)<br>2.Press Ⓜ key enter data and into DS-V setting page   |
|     |  | n.8.2.   |  |
| 11  | DS-V(Voltage Display Span Adjust)                    | dS-V     | 1.Adjustment Voltage display span with ▲&▼key<br>2.Press Ⓜkey enter data and into DS-A setting page<br>Note:Adjust DS-V while Voltage maximum display value error  |
|     |  | 6000     |  |
| 12  | DS-A(Current Display Span Adjust)                    | dS-A     | 1.Adjustment Current display span with ▲&▼key<br>2.Press Ⓜkey enter data and return normal display<br>Note:Adjust DS-A while Current maximum display value error   |
|     |  | 2000     |  |

| Appendix | Error Mark description          | Error Mark | Analyze & Description  |
|----------|---------------------------------|------------|--|
| 1        | Display over range error detect | d o F L    | 1.Input signal over display range or over measurable range   |
| 2        | EEPROM error detect             | E-00       | 1.External interference when EEPROM read/write<br>2.EEPROM write over 1,000,000 cycles(guarantee 10 years)<br>Please power reset, if still display E-00,doing below 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 1~10 setting again |
|          |                                 | n o        |  |
|          |                                 | Y E S      |  |







Note:Voltage/Current value below the 0.1% of maximum display value will auto low cut to zero

## MMX-D Modbus RTU Mode Protocol Address Map

Data format 16Bit/32Bit Unsign bit, i.e. 0000~FFFF(0~65536)/00000000~FFFFFFFF(0~4294967295)

| Address | Name       | Description   | Accept |
|---------|------------|---|--------|
| 0000    | ADP        | Current Decimal Point location, Input Range 0000~0003(0~3)                          | R/W    |
| 0001    | ADSP       | Current Display High value, Input Range 0000~270F(0~9999)                           | R/W    |
| 0002    | UNIT       | Watt or Kilowatt Unit Select, Input Range 0000~0001(0~1) 0:W, 1:KW                  | R/W    |
| 0003    | WDP        | Watt Decimal Point location, Input Range 0000~0003(0~3)                             | R/W    |
| 0004    | KWDP       | Kilowatt Decimal Point location, Input Range 0000~0003(0~3)                         | R/W    |
| 0005    | WHDP       | Watt-hour Decimal Point location, Input Range 0000~0001(0~1)                        | R/W    |
| 0006    | KWHDP      | Kilowatt-hour Decimal Point location, Input Range 0000~0001(0~1)                    | R/W    |
| 0007    | RST        | Reset Mode, Input Range 0000~0002(0~2)  | R/W    |
| 0008    | ADDR       | Communication Address, Input Range 0000~00FF(0~255)                                 | R/W    |
| 0009    | BAUD       | Communication Baud Rate, Input Range 0000~0003(0~3) 0:19200, 1:9600, 2:4800, 3:2400 | R/W    |
| 000a    | PARI       | Communication Parity Check, Input Range 0000~0003(0~3) 0:N82, 1:N81, 2:EVEN, 3:ODD  | R/W    |
| 000b    | INLO(V)    | DC Voltage Input Low Calibrate Value, Input Range 000000~FFFFFF(0~16777215)         | R/W    |
| 000d    | INLO(A)    | DC Current Input Low Calibrate Value, Input Range 000000~FFFFFF(0~16777215)         | R/W    |
| 000f    | INHI(V)    | DC Voltage Input High Calibrate Value, Input Range 000000~FFFFFF(0~16777215)        | R/W    |
| 0011    | INHI(A)    | DC Current Input High Calibrate Value, Input Range 000000~FFFFFF(0~16777215)        | R/W    |
| 0013    | wh_lvalue  | Watt-hour accumulate value(per 0.1 wh), Range 00000000~3B9AC9FF(0~999999999)        | R      |
| 0015    | wh_hvalue  | Watt-hour accumulate value(per 100M wh), Range 0000~FFFF(0~65535)                   | R      |
| 0016    | DISPLAY_V  | Voltage Display Value, Range 0000~270F(0~9999)                                      | R      |
| 0017    | DISPLAY_A  | Current Display Value, Range 0000~270F(0~9999)                                      | R      |
| 0018    | DISPLAY_W  | (Kilo)Watt Display Value, Range 0000~270F(0~9999)                                   | R      |
| 0019    | DISPLAY_WH | (Kilo)Watt-hour Display Value, Range 00000000~5F5E0FF(0~999999999)                  | R      |
| 001b    | RST        | Write = 0x01(Function 06), Reset the (Kilo)Watt-hour accumulate value to zero       | W      |

## MMX-D Calibrate Step:

| Step | Parameter Mark Description              | Parameter Mark | Operation Manual  |
|------|---|----------------|---|
| 1    | Normal Display                          | 1234           | 1. Press  &  key about 5 sec., Into INLO setting page   |
| 2    | INLO(Input Low Calibrate Setting Page)  | . n L 0        | 1. Terminal V+ and V- input DC 0mV, Terminal A+ and A- input DC 0A(0mV), Press  key read INLO calibrate value<br>2. Wait until calibrate value is stable, Press  key enter data and into INHI setting page      |
|      |   | 7447           |   |
|      |   | 8031           |   |
| 3    | INHI(Input High Calibrate Setting Page) | . n H .        | 1. Terminal V+ and V- input DC 600V, Terminal A+ and A- input DC 2A/10A(50mV), Press  key read INHI calibrate value<br>2. Wait until calibrate value is stable, Press  key enter data and return normal display |
|      |   | 1077           |   |
|      |   | 1478           |   |