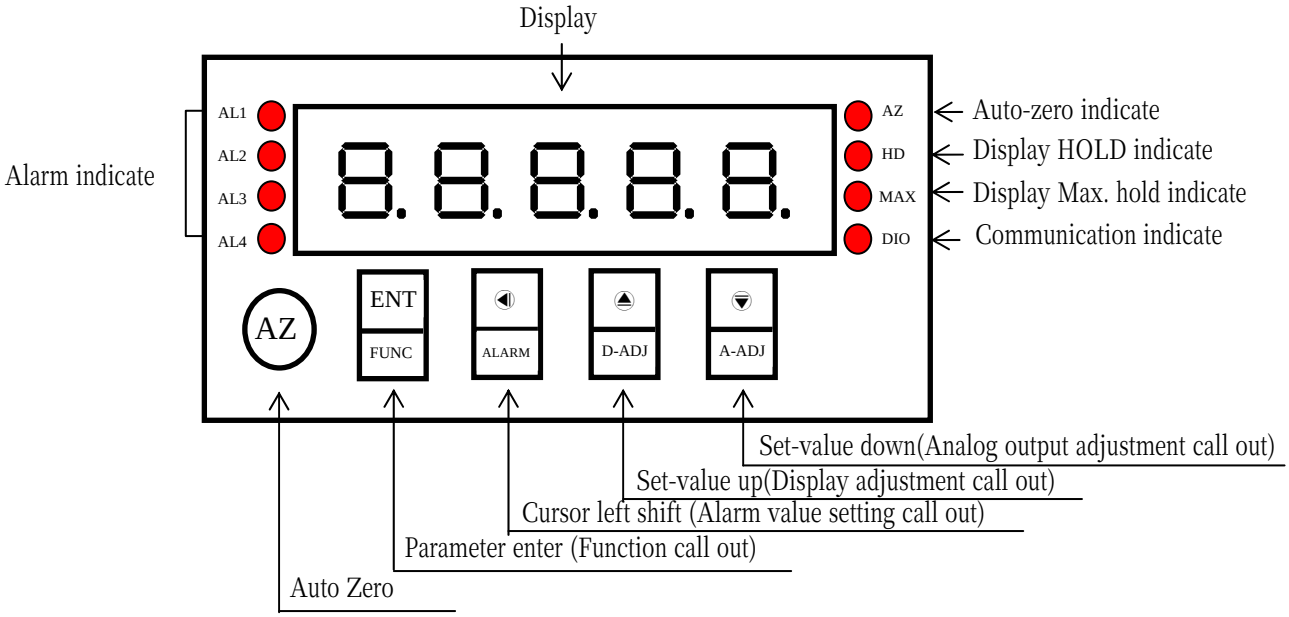
AXE MICROPROCESS PANEL CONTROLLER METER MM3 Series

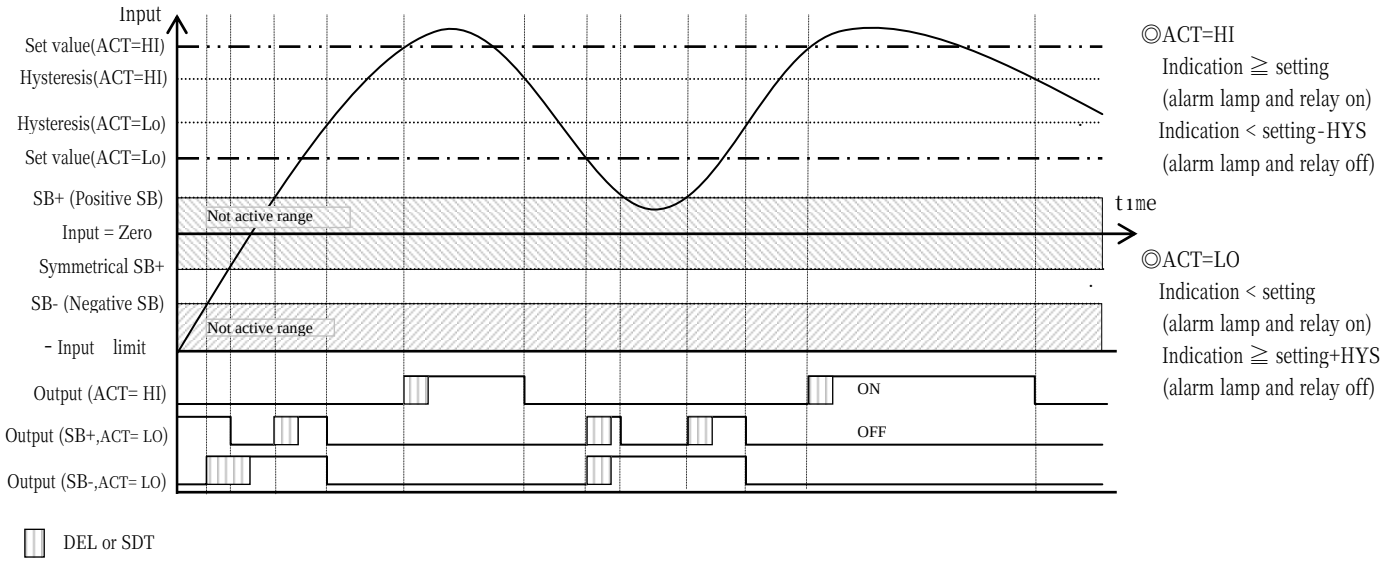
■ Features

◎MeasuringDCA/DCV/ACA/ACV/Potentiometer/Pt-100/ Transmitter/Load Cell/Resistor⋯.etc
◎Accuracy 0.05% F.S.±1 digit
◎Display range -19999~99999 can be modified
◎Decimal point can be modified
◎Display value can Auto-zero and Hold function
◎Display value can Max. hold function
◎4 Alarm function
◎Display average can be modified (1~99)
◎16BIT DAC analog output can be modified
◎RS485 communication interface,Protocol MODBUS RTU MODE
◎BAUD RATE:19200/9600/4800/2400
◎0.8 ” LED highlight display
◎Man-machine interface ,easy to operate
◎EEPROM Saving ,data safekeeping about 10 years
◎Modified inside parameter must have pass code

■ Name Of Parts



■Alarm Function Diagram



Key Introduce	Operation Manual
ENT Key Function	1. In normal display, The key function is call out setting group 2. In parameter setting page, The key function is data Enter , and goto next page
◀ Key Function	1. In normal display, The ◀ key function is call out alarm value setting page 2.Into parameter setting page, the parameter mark&data is alternate display, If need modify data can press shift 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 value(DZERO&DSPAN)page 2.Into parameter setting page, the parameter mark&data is alternate display, If need modify data can press up 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 normal display,The key function is call out adjustment analog output(AZERO&ASPAN)page 2.Into parameter setting page, the parameter mark&data is alternate display, If need modify data can press down 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)
AZ Key Function	1.The AZ key press first time,Display value will be auto-zero(AZ lamp " ON "),Press AZ key once again, auto-zero function disable ,(AZ lamp " OFF ")
▲&▼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

■ Inside parameter operate procedure

Step	Parameter Mark Description	Parameter Mark	Operation Manual
1	Normal display	12345	Press EN/FUNC key into P.COD setting page
2	P.COD(Pass code input page) Default=0	P.Cod 00000	1.Key in 5 digit pass code with ◀&▲&▼key 2.Press EN key, If the pass code is correct then into setting group,otherwise return normal display
3	SYS(System Setting Group) ROP(Alarm output Setting Group) AOP(Analog output Setting Group) DOP(Communication setting group)	SYS roP AoP doP	1. Select setting group with ◀key 2. Press EN key into setting page of selection setting group
4	SYS(System setting group)	SYS	1.Press ◀key decide SYS setting group 2.Press EN key into DP setting page
4-1	DP(Decimal Point) Default=0	dP 0	1. Decide decimal point position with▲&▼ key (0 to 4) 2. Press EN key enter data and into DSPL setting page
4-2	DSPL(Display Low Scale) Default=0	dSPL 00000	1. Decide display low scale with ◀&▲&▼key (-19999~99999) 2. Press EN key enter data and into DSPH setting page
4-3	DSPH(Display High Scale) Default=99999	dSPH 99999	1. Decide display high scale with ◀&▲&▼key (-19999~99999) 2. Press EN key enter data and into AVG setting page
4-4	AVG (Average) Default=1	AuG 0001	1. Decide display Average times with ◀&▲&▼key (1~99) 2. Press EN key enter data and into LCUT setting page
4-5	LCUT (Low Cut) Default=0	LCUt 00000	1. Decide display low cut with ◀&▲&▼key (0~99) 2. Press EN key enter data and into CODE setting page
4-6	CODE(Pass Code) Default=0	CodE 00000	1. Decide Pass code with ◀&▲&▼key (0~19999) 2. Press EN key enter data and into LOCK setting page
4-7	LOCK(Panel Lock) Default=NO	LoCK no	1. Decide panel lock with▲&▼ key (NO or YES) 2. Press EN key enter data and return SYS setting group
5	ROP(Alarm setting group)	roP	1.Press ◀key decide ROP setting group 2.Press EN key into ACT1 setting page
5-1	ACT1(Alarm 1 Active) Default=HI	ACt 1 Hi	1. Decide Alarm 1 Active with ▲&▼key(HI or LO) 2.Press EN key enter data and into ACT2 setting page
5-2	ACT2(Alarm 2 Active) Default=HI	ACt2 Hi	1. Decide Alarm 2 Active with ▲&▼key(HI or LO) 2.Press EN key enter data and into ACT3 setting page
5-3	ACT3(Alarm 3 Active) Default=HI	ACt3 Hi	1. Decide Alarm 3 Active with ▲&▼key(HI or LO) 2.Press EN key enter data and into ACT4 setting page
5-4	ACT4(Alarm 4 Active) Default=HI	ACt4 Hi	1. Decide Alarm 4 Active with ▲&▼key(HI or LO) 2. Press EN key enter data and into HYS1 setting page
5-5	HYS1(Alarm 1 Hysteresis) Default=0	HYS 1 00000	1. Decide HYS1 with ◀&▲&▼key (0~99) 2. Press EN key enter data and into HYS2 setting page

5-6	HYS2(Alarm 2 Hysteresis) Default=0	HYS2 00000	1. Decide HYS2 with ◀&▲&▼key (0~99) 2. Press Ⓜkey enter data and into HYS3 setting page
5-7	HYS3(Alarm 3 Hysteresis) Default=0	HYS3 00000	1. Decide HYS3 with ◀&▲&▼key (0~99) 2. Press Ⓜkey enter data and into HYS4 setting page
5-8	HYS4(Alarm 4 Hysteresis) Default=0	HYS4 00000	1. Decide HYS4 with ◀&▲&▼key (0~99) 2. Press Ⓜkey enter data and into DEL1 setting page
5-9	DEL1(Alarm 1 Delay time) Default=0	dEL 1 00000	1. Decide DEL1 with ◀&▲&▼key (0~99 sec) 2. Press Ⓜkey enter data and into DEL2 setting page
5-10	DEL2(Alarm 2 Delay time) Default=0	dEL2 00000	1. Decide DEL2 with ◀&▲&▼key (0~99 sec) 2. Press Ⓜkey enter data and into DEL3 setting page
5-11	DEL3(Alarm 3 Delay time) Default=0	dEL3 00000	1. Decide DEL3 with ◀&▲&▼key (0~99 sec) 2. Press Ⓜkey enter data and into DEL4 setting page
5-12	DEL4(Alarm 4 Delay time) Default=0	dEL4 00000	1. Decide DEL4 with ◀&▲&▼key (0~99 sec) 2. Press Ⓜkey enter data and into SB setting page
5-13	SB(Start band) Default=0	Sb 00000	1. Decide SB with ◀&▲&▼key (-99~99) 2. Press Ⓜkey enter data and into SDT setting page
5-14	SDT(Start Delay Time) Default=0	Sdt 00000	1. Decide SDT with ◀&▲&▼key (0~99 sec) 2. Press Ⓜ key enter data and return R0P setting group
6	AOP(Analog output setting group)	AoP	1.Press◀key select AOP setting group 2.PressⓂkey into ANLO setting page
6-2	ANLO(Analog Output Zero-According to Display) Default=0	AnLo 00000	1. Decide ANLO with ◀&▲&▼key (-19999~99999) 2. Press Ⓜkey enter data and into ANHI setting page
6-3	ANHI(Analog Output Span-According to Display) Default=99999	AnHi 99999	1. Decide ANHI with ◀&▲&▼key(-19999~99999) 2.PressⓂkeyreturnAOP setting group
7	DOP(Communication setting group)	doP	1.Press ◀key decide DOP setting group 2.PressⓂkeyintoADDR setting page
7-1	ADDR(Communication Address) Default=0	Addr 00000	1. Decide ADDR with ◀&▲&▼key (0~255) 2. Press Ⓜkey enter data and into BAUD setting page
7-2	BAUD(Communication Baud Rate) Default=19200	bAUd 19200	1. Decide BAUD with ▲&▼key (19200,9600,4800,2400) 2. Press Ⓜkey enter data and into PARI setting page
7-3	PARI(Communication Parity Check) Default=n.8.2.	PAr1 n.8.2.	1. Decide PARI with ▲&▼key(n.8.2,n.8.1,even,odd) 2. Press Ⓜkey enter data and return DOP setting group
Step	Parameter mark description	Parameter mark	Operation manual
8	Normal display	12345	1.Press◀/ALARM about 3 sec, into AL1 setting page
8-1	AL1 (Alarm 1) Default=0	AL 1 00000	1.Decide AL1 with ◀&▲&▼key (-19999~99999) 2. Press Ⓜkey enter data and into AL2 setting page
8-2	AL2 (Alarm 2) Default=0	AL2 00000	1. Decide AL2 with ◀&▲&▼key (-19999~99999) 2. Press Ⓜkey enter data and into AL3 setting page
8-3	AL3 (Alarm 3) Default=0	AL3 00000	1. Decide AL3 with ◀&▲&▼key (-19999~99999) 2. Press Ⓜkey enter data and into AL4 setting page
8-4	AL4 (Alarm 4) Default=0	AL4 00000	1. Decide AL4 with ◀&▲&▼key (-19999~99999) 2. Press Ⓜkey enter data and return normal value
Step	Parameter mark description	Parameter mark	Operation manual
9	Normal display	12345	Press▲/D-ADJ key about 3 sec, into DZERO adjustment page

9-1	DZERO(Display Zero Adjust) Default=0	dZEro 00000	1. Adjustment display zero with ▲&▼key 2. Press ENT key enter data and into DSPAN adjustment page
9-2	DSPAn(Display Span Adjust) Default=0	dSPAn 00000	1. Adjustment display span with ▲&▼key 2. Press ENT key enter data and return normal display

Step	Parameter mark description	Parameter mark	Operation manual
10	Normal display	12345	1.Press▼/A-ADJ key about 3 sec, into AZERO adjustment page
10-1	AZERO(Analog Output Zero Adjustment page) Default=0	AZEro 00000	1.Adjustment analog output zero with ◀&▲&▼key(±6000) 2. Press ENT key enter data and into ASPAN adjustment page
10-2	ASPAn(Analog Output Span Adjustment page) Default=0	ASPAn 00000	1. Adjustment analog output span with ◀&▲&▼key (±6000) 2. Press ENT key enter data and return normal display

Appendix	Error Mark Description	Error Mark	Analyze & Description
1	Input over error detect	1 oFL	Input signal over range
2	Input under error detect	-1 oFL	Input signal under range
3	Display over error detect	doFL	Display over range(99999)
4	Display under error detect	-doFL	Display over range (-19999)
5	EEPROM error detect	E-00 no yES	1. External interference when EEPROM read/write 2.EEPROM write over 1 million times(guarantee 10 years) Please power reset, if still display E-00,doing following step: a.E-00 & No alternate display for inquire reset EEPROM b.Decide Yes with ▲or▼ key,press ENT key return normal display c.EEPROM was reset,Please follow step 1~10 set again

MM3 Modbus RTU Mode Protocol Address Map

Data format 16Bit/32Bit, sign bit 8000~7FFF(– 32768~32767),80000000~7FFFFFFF(-2147483648~2147483647)

Address	Name	Description	Accept
0000	ID	Type code judge , MM3 = 00	R
0001	STATUS	Alarm output and Display status,Display Range 0000~00FF(0~255)(0:OFF,1:ON)(Bit0:AL1, Bit1:AL2,Bit2:AL3,Bit3:AL4,Bit5:DOFL,Bit6:-DOFL,Bit7:IOFL,Bit8:-IOFL)	R
0002	ACT1	Alarm 1 Active,Input Range 0000~0001(0~1)(0:HI,1:LO)	R/W
0003	ACT2	Alarm 2 Active,Input Range 0000~0001(0~1)(0:HI,1:LO)	R/W
0004	ACT3	Alarm 3 Active,Input Range 0000~0001(0~1)(0:HI,1:LO)	R/W
0005	ACT4	Alarm 4 Active,Input Range 0000~0001(0~1)(0:HI,1:LO)	R/W
0006	DP	Decimal Point,Input Range 0000~0004(0~4)0:10^{0},1:10^{-1},2:10^{-2},3:10^{-3},4:10^{-4}	R/W
0007	LOCK	Panel Lock,Input Range 0000~0001(0~1)0:NO,1:YES	R/W
0008	BAUD	Communication Baud Rate,Input Range 0000~0003(0~3)0:19200,1:9600,2:4800,3:2400	R/W
0009	PARI	Communication Parity Check,Input Range 0000~0003(0~3)0:N.8.2.,1:N.8.1.,2:EVEN,3:ODD	R/W
000A	AVG	Average,Input Range 0001~0063(1~99)	R/W
000B	LCUT	Low Cut,Input Range 0000~0063(0~99)	R/W
000C	ADDR	Communication Address,Input Range 0000~00FF(0~255)	R/W
000D	HYS1	Hysteresis 1,Input Range 0000~0063(0~99)	R/W
000E	HYS2	Hysteresis 2,Input Range 0000~0063(0~99)	R/W
000F	HYS3	Hysteresis 3,Input Range 0000~0063(0~99)	R/W
0010	HYS4	Hysteresis 4,Input Range 0000~0063(0~99)	R/W
0011	DEL1	Alarm 1 Delay time,Input Range 0000~0063(0~99)	R/W
0012	DEL2	Alarm 2 Delay time,Input Range 0000~0063(0~99)	R/W
0013	DEL3	Alarm 3 Delay time,Input Range 0000~0063(0~99)	R/W
0014	DEL4	Alarm 4 Delay time,Input Range 0000~0063(0~99)	R/W
0015	SB	Start band,Input Range FF9D~0063(-99~99)	R/W
0016	SDT	Start Delay Time,Input Range 0000~0063(0~99)	R/W
0017	CODE	Pass Code,Input Range 0000~4E1F(0~19999)	R/W
0018	AZERO	Analog Output Zero Adjust,Input RangeE890~1770(-6000~6000)	R/W
0019	ASPAN	Analog Output Span Adjust,Input RangeE890~1770(-6000~6000)	R/W
001A	DSPL	Display Low Scale,Input RangeFFFFB1E1~0001869F(-19999~99999)high word	R/W
001B		Display Low Scale,Input RangeFFFFB1E1~0001869F(-19999~99999)low word	R/W
001C	DSPH	Display High Scale,Input RangeFFFFB1E1~0001869F(-19999~99999)high word	R/W
001D		Display High Scale,Input RangeFFFFB1E1~0001869F(-19999~99999)low word	R/W
001E	AL1	Alarm 1,Input RangeFFFFB1E1~0001869F(-19999~99999)high word	R/W
001F		Alarm 1,Input RangeFFFFB1E1~0001869F(-19999~99999)low word	R/W
0020	AL2	Alarm 2,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0021		Alarm 2,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
0022	AL3	Alarm 3,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0023		Alarm 3,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
0024	AL4	Alarm 4,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0025		Alarm 4,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
0026	ANLO	Analog Output Zero According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0027		Analog Output Zero According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
0028	ANHI	Analog Output Span According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0029		Analog Output Span According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
002A	AZ	Display Auto zero, Display Range FFFFB1E1~0001869F(-19999~99999)high word	R
002B		Display Auto zero, Display Range FFFFB1E1~0001869F(-19999~99999)low word	R
002C	HOLD	Display Hold, Display Range FFFFB1E1~0001869F(-19999~99999)high word	R
002D		Display Hold, Display Range FFFFB1E1~0001869F(-19999~99999)low word	R
002E	MAX	Display maximum Hold, Display Range FFFFB1E1~0001869F(-19999~99999)high word	R
002F		Display maximum Hold, Display Range FFFFB1E1~0001869F(-19999~99999)low word	R
0030	DISPLAY	Display Value, Display Range FFFFB1E1~0001869F(-19999~99999)high word	R
0031		Display Value, Display Range FFFFB1E1~0001869F(-19999~99999)low word	R
0032	FUNC	Terminal function,Input Range 0000~0007(0~7)(0:OFF,1:ON)(Bit0:AZ,Bit1:HOLD,Bit2:MAX) Note:ONLY Bit0:AZ ENABLE WRITE	R/W