AXE Microprocess Length(Flow) Controller Meter — MMC Series

■FEATURES

◎Accept more type sensors(switch,encoder,proximity switch,...etc)finish length/flow control
◎Readout Range from -19999 to 99999
◎Four counting modes Up.Down,Up/Down,Quadrature
◎Power down saving
◎Decimal Point can be modified
◎Input scaling multiplied 0.0001 to 9.9999 can be modified
◎Reset by panel or connect terminal
◎Quadrature sensing up to 4 times resolution

◎15BIT DAC analog output can be modified, 0~10V/4~20mA by inside switch jumper
◎Two alarm function
◎Man-machine interface,easy to operate
◎0.56" highlight display
◎BAUD RATE:19200/9600/4800/2400
◎RS485 Communication interface,Protocol MODBUS RTU MODE
◎EEPROM Saving,data safekeeping about 10 years
◎Modified inside parameter,must have pass code

■Name of Parts

Display

Alarm Indicate — AL1, AL2

B1 ← RESET Indicate
B2 ← GATE Indicate
B3
DIO ← Communication Indicate

RST — Reset key
ENT / FUNC — Parameter Enter (Function call out)
◀ / ALARM — Cursor shift(Alarm adjustment call out)
▲ / SCALE — Set-value up(Scale adjustment call out)
▼ / A-ADJ — Set-value down(Analog output adjustment call out)
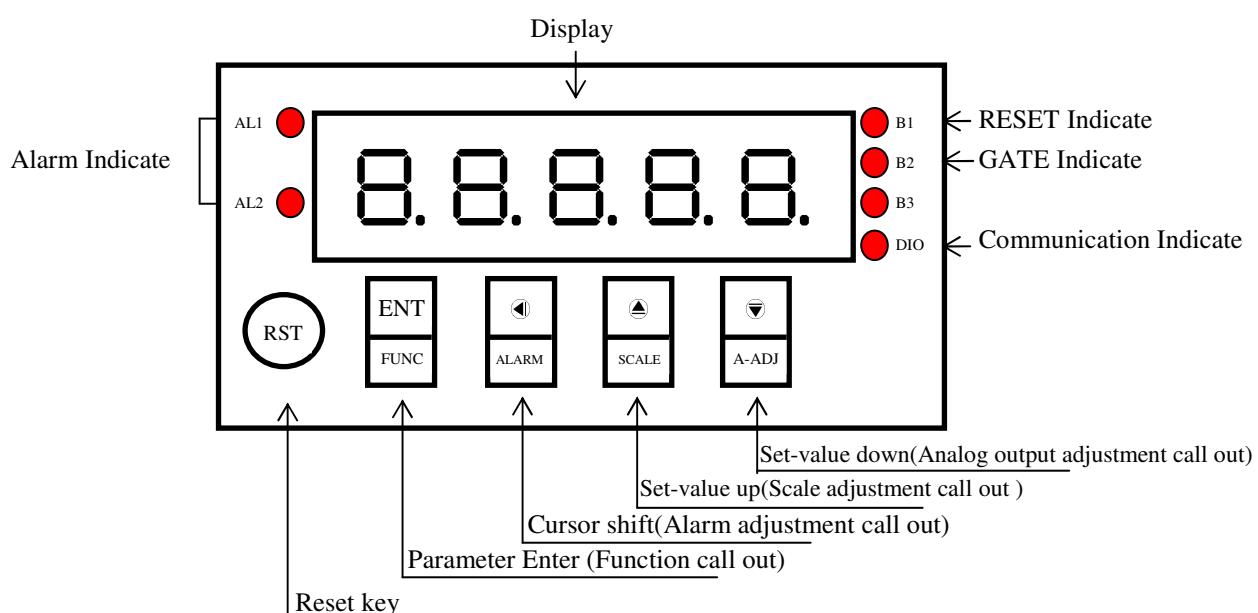
■ Connect Diagram

◎Contact input(PNP)
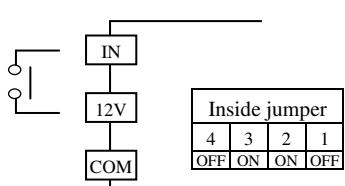
IN / 12V / COM

Inside jumper			
4	3	2	1
OFF	ON	ON	OFF

◎Contact input(NPN)

IN / 12V / COM

Inside jumper			
4	3	2	1
OFF	ON	OFF	ON

◎CMOS input(12V or 15V)

IN / 12V / COM / GND

Inside jumper			
4	3	2	1
OFF	OFF	ON	OFF

◎TTL input(5V)

IN / 12V / COM / GND

Inside jumper			
4	3	2	1
ON	OFF	ON	OFF

◎Sensor input(PNP 12V)

Sensor / IN / 12V / COM

Inside jumper			
4	3	2	1
OFF	OFF	ON	OFF

◎Sensor input(NPN 12V)

Sensor / IN / 12V / COM

Inside jumper			
4	3	2	1
OFF	OFF	OFF	ON
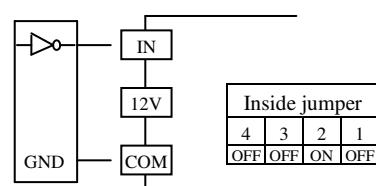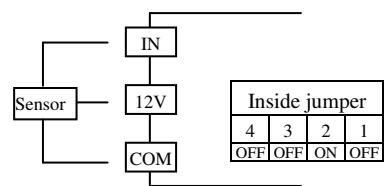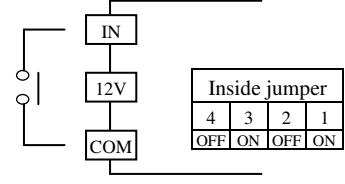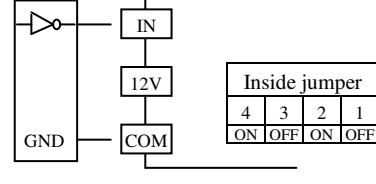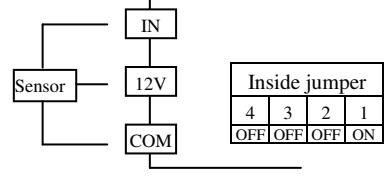
■Analog output function jumper table

4 3 2 1
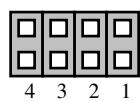
Position 1&3 ON: DC 4~20 mA OUTPUT
Position 2&4 ON: DC 0~10V OUTPUT

■Input function jumper table
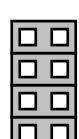
4 Position 4 ON: TTL   OFF:CMOS
3 Position 3 ON: 0~50Hz   OFF:0~10KHz
2 Position 2 ON: PNP
1 Position 1 ON: NPN

Key Introduce	Operation Manual
⊞ 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 scale 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 ZERO&SPAN 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)
▲&▼ Key Function	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	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	12345	Press ⊞/FUNC key into P.COD setting page
2	P.COD(Pass code input page)	P.Cod 00000	1.Key in 5 digit pass code with ◀ or ▲ or ▼ key 2.Press ⊞ key,the pass code is right into setting group , otherwise return normal display
3	SYS(System setting group)	SYS	1.Select setting group with ◀ key 2.Press ⊞ key into setting page of selection setting group
	ROP(Alarm setting group)	roP	
	AOP(Analog output setting group)	AoP	
	DOP(Communication setting group)	doP	
4	SYS(System setting group)	SYS	Press ◀ key decide SYS setting group , press ⊞ key into Dp setting page
4-1	DP(Decimal Point setting page) Value on EEPROM reset=0	dP 0	1.Decide decimal point position with ▲ or ▼ key (0 to 4) 2.Press ⊞ key enter data and into TYPE setting page
4-2	TYPE(Input Type setting page) Value on EEPROM reset=1U2D	tYPE 1U2d	1.Decide input type with ▲ or ▼ key (1U2D/1P2D/1A2B) 2.Press ⊞ key enter data and into CODE setting page
4-3	CODE(Pass Code setting page) Value on EEPROM reset=0	CodE 00000	1.Decide pass code with ◀ or ▲ or ▼ key(0~99999) 2.Press ⊞ key enter data and into LOCK setting page
4-4	LOCK(Panel Lock setting page) Value on EEPROM reset=NO	LoCk no	1.Decide panel lock with ▲ or ▼ key(NO or YES) 2.Press ⊞ key enter data and return SYS setting group
5	ROP(Alarm setting group)	roP	Press ◀ key decide ROP setting group,press ⊞ key into ACT1 setting page
5-1	ACT1(Alarm Active 1 setting page) Value on EEPROM reset=HI	ACt1 Hi	1.Decide active 1 with ▲ or ▼ key(HI or LO) 2.Press ⊞ key enter data and into ACT2 setting page
5-2	ACT2(Alarm Active 2 setting page) Value on EEPROM reset=HI	ACt2 Hi	1.Decide active 2 with ▲ or ▼ key(HI or LO) 2.Press ⊞ key enter data and into HYS1 setting page
5-3	HYS1(Alarm Hysteresis 1 setting page) Value on EEPROM reset=0	HYS1 00000	1.Decide Hysteresis 1 with ◀ or ▲ or ▼ key(0~999) 2.Press ⊞ key enter data and into HYS2 setting page

Step	Parameter mark description	Parameter mark	Operation manual
5-4	HYS2(Alarm Hysteresis 2 setting page) Value on EEPROM reset=0	HYS2 / 00000	1.Decide Hysteresis 1 with ◀ or ▲ or ▼ key(0~999) 2.Press ⑩ key enter data and into DEL1 setting page
5-5	DEL1(Alarm Delay 1 setting page) Value on EEPROM reset=0	dEL1 / 0000.0	1.Decide delay 1with ◀ or ▲ or ▼ key(0~99.9 sec) 2.Press ⑩ key enter data and into DEL2 setting page
5-6	DEL2(Alarm Delay 2 setting page) Value on EEPROM reset=0	dEL2 / 0000.0	1.Decide delay 2 with ◀ or ▲ or ▼ key(0~99.9sec) 2.Press ⑩ key enter data and return ROP setting group
6	AOP(Analog output setting group)	AoP	Press ◀ key decide AOP setting group , press ⑩ key into ANLO setting page
6-1	ANLO(A/O Zero According to Display setting page)Value on EEPROM reset=0	AnLo / 00000	1.Decide ANLO with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ⑩ 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 / 99999	1.Decide ANHI with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ⑩ key enter data and return AOP setting group
7	DOP(Communication setting group)	doP	press ◀ key decide DOP setting group,press ⑩ key into ADDR setting page
7-1	ADDR(Communication –Address setting page) Value on EEPROM reset=0	Addr / 00000	1.Decide address with ◀ or ▲ or ▼ key(0~255) 2.Press ⑩ key enter data and into BAUD setting page
7-2	BAUD(Communication Baud Rate setting page)Value on EEPROM reset=19200	bAUd / 19200	1.Decide baud rate with ▲ or ▼ key(19200,9600,4800,2400) 2.Press ⑩ key enter data and into PARI setting page
7-3	PARI(Communication Parity Check setting page)Value on EEPROM reset=n82	PAri / n.8.2.	1.Decide parity check with ▲ or ▼ key(n82,n81,even,odd) 2.Press ⑩ key enter data and return DOP setting group *If parity check setting is non , sometime STOP BIT must set 2 BIT
Step	Parameter mark description	Parameter mark	Operation manual
8	Normal display	12345	Press ◀/ALARM key about 3 sec,into AL1 1setting page
8-1	AL1 (Alarm value 1 setting page) Value on EEPROM reset=0	AL1 / 00000	1.Decide alarm value 1 with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ⑩ key enter data and into AL2 setting page
8-2	AL2 (Alarm value 2 setting page) Value on EEPROM reset=0	AL2 / 00000	1.Decide alarm value 2 with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ⑩ key enter data and return normal display
Step	Parameter mark description	Parameter mark	Operation manual
9	Normal display	12345	Press ▲/SCALE key about 3 sec,into SCALE setting page
9-1	SCALE (Display Scale setting page) Value on EEPROM reset=1	SCALE / 1.0000	1.Decide scale with ◀ or ▲ or ▼ key(0.0001~9.9999) 2.Press ⑩ key enter data and return normal display
Step	Parameter mark description	Parameter mark	Operation manual
10	Normal display	12345	Press ▼/A-ADJkey about 3 sec,into AZERO adjustment page
10-1	AZERO(Analog Output Zero Adjustment page) Value on EEPROM reset=0	APEro / 00000	1.Adjustment analog output zero with ◀ or ▲ or ▼ key(±9999) 2.Press ⑩ key enter data and into ASPAN adjustment page
10-2	ASPAN(Analog Output Span Adjustment page) Value on EEPROM reset=0	ASPAn / 00000	1.Adjustment analog output span with ◀ or ▲ or ▼ key(±9999) 2.Press ⑩ key enter data and return normal display

Appendix	Error Mark description	Error Mark	Analyze & Description
1	Display positive over error detect	`doFL`	Input signal over display range(99999)
2	Display negative over error detect	`-doFL`	Input signal under display range(-19999)
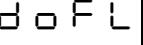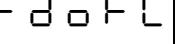
3	EEPROM error detect	`E-00`
		`no`
		`YES`
			1.External interference when EEPROM read/write
			2.EEPROM write over 100 million times(guarantee 10 years)
			Please power reset,if still display E-00,doing following step:
			1.E-00 & No alternate display for inquire reset EEPROM
			2.Decide Yes with ⬘ or ⬙ key,press Ⓝ key return normal display
			3.EEPROM was reset,Please follow step 1~10 set again
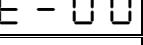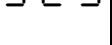
MMC Modbus RTU Mode Protocol Address Map

Data format 16Bit/32Bit,sign bit

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

Address	Name	Description	Accept
0000	DP	Decimal point position,range0000~0004(0~4)0:10^{0},1:10^{-1},2:10^{-2},3:10^{-3},4:10^{-4}	R/W
0002	TYPE	**Input type**,range0000~0002(0~2)0:1U2D,1:1P2D,2:1A2B	R/W
0004	ACT1	Alarm active 1,range0000~0001(0~1)0:HI,1:LO	R/W
0006	ACT2	Alarm active 2,range0000~0001(0~1)0:HI,1:LO	R/W
0008	HYS1	Alarm hysteresis 1,range0000~03E7(0~999)	R/W
000A	HYS2	Alarm hysteresis 2,range0000~03E7(0~999)	R/W
000C	DEL1	Alarm delay 1,range0000~03E7(0~999)	R/W
000E	DEL2	Alarm delay 2,range0000~03E7(0~999)	R/W
0010	ADDR	Communication address,range0000~00FF(0~255)	R/W
0012	BAUD	Communication baud rate,range0000~0003(0~3)0:19200,1:9600,2:4800,3:2400	R/W
0014	PARI	Communication parity check,range0000~0003(0~3)0:N82,1:N81,2:EVEN,3:ODD	R/W
0016	AZERO	AZERO,rangeD8F1~270F(-9999~9999)	R/W
0018	ASPAN	ASPAN,rangeD8F1~270F(-9999~9999)	R/W
001A	LOCK	**Panel lock,range0000~0001(0~1)0:NO,1:YES**	R/W
001C	CODE	Pass code,range00000000~0001869F(0~99999)	R/W
0020	SCALE	Display scale,range00000001~0001869F(1~99999)	R/W
0024	ANLO	ANLO,rangeFFFFB1E1~0001869F(-19999~99999)	R/W
0028	ANHI	ANHI,rangeFFFFB1E1~0001869F(-19999~99999)	R/W
002C	AL1	Alarm value 1,rangeFFFFB1E1~0001869F(-19999~99999)	R/W
0030	AL2	Alarm value 2,rangeFFFFB1E1~0001869F(-19999~99999)	R/W
0034	COUNTER	Input PULSE,rangeFFFFB1E1~0001869F(-19999~99999)	R
0038	Non	non	R
003A	Non	non	R
003C	Non	non	R
003E	Non	non	R
0040	Non	non	R
0042	Non	non	R
0044	Non	non	R
0046	DISPLAY	Display value,rangeFFFFB1E1~0001869F(-19999~99999)	R