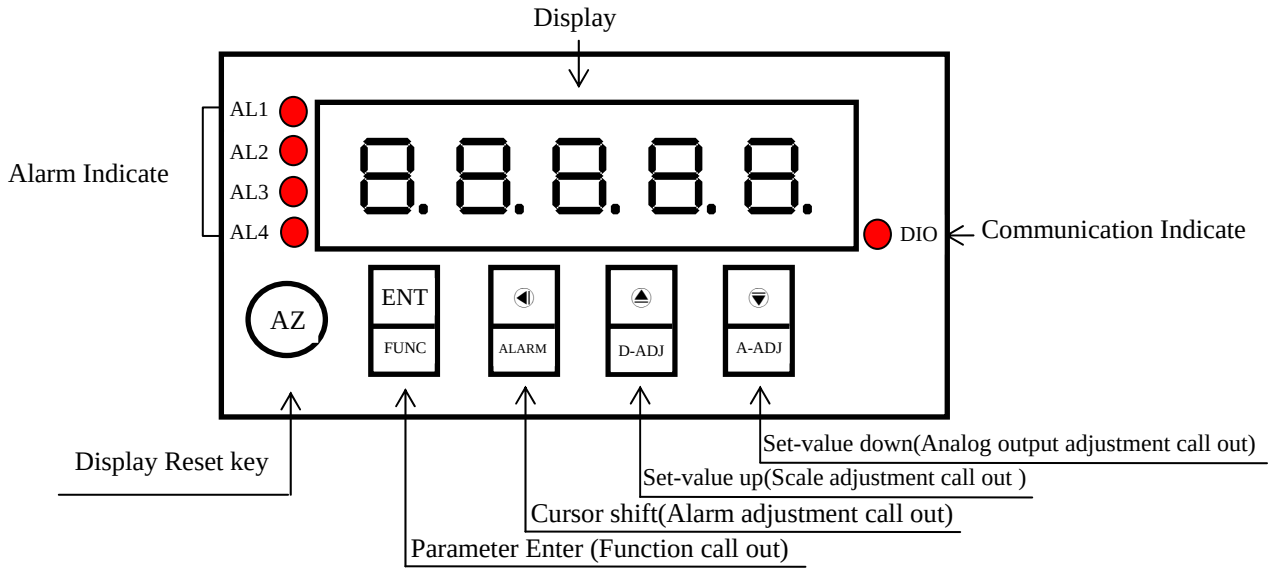
AXE High Speed Microprocess Length(Flow) Controller Meter(Pulse Input) MMCH Series

■FEATURES

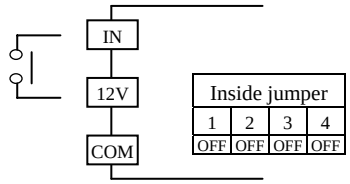
◎ Accept more type sensors(switch,encoder,proximity switch,…etc)finish length/flow control
◎ Readout Range from -19999 to 99999
◎ Five counting modes,Front/after edge Up,Up/Down, direct-Up/Down ,Quadrature-Up/Down can be modified
◎Power down saving
◎ Decimal Point can be modified
◎ Input scaling multiplied 0.0001 to 9.9999 can be modified
◎ Reset by panel or connect terminal
◎ Quadrature sensing up to 4 times resolution
◎ 16BIT DAC analog output can be modified,
◎ Four alarm function
◎ Man-machine interface,easy to operate
◎ 0.8" highlight display
◎ BAUD RATE:38400/19200/9600/4800/2400
◎ RS485 Communication interface,Protocol MODBUS RTU MODE
◎ EEPROM Saving,data safekeeping about 10 years
◎ Modified inside parameter,must have pass code

■Name of Parts

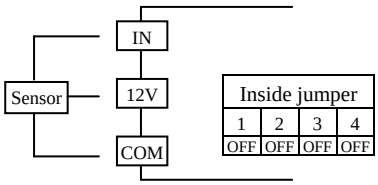


■ Connect Diagram

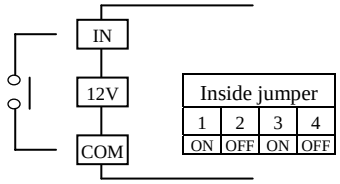
◎Contact input (PNP)



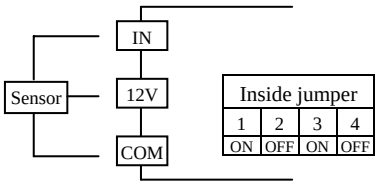
◎Sensor input (PNP 5V/12V)



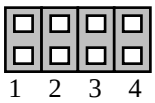
◎Contact input (NPN)



◎Sensor input (NPN 5V/12V)



■Input function jumper table



Position 1 ON：IN(B) NPN

Position 3 ON：IN(A) NPN

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 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) Default = 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) Default = 1U2D	tYPE 1U2d	1.Decide input type with ▲ or ▼ key (1U2G/1G2U/1U2D/1P2D/ 1A2B) 2.Press ◀ key enter data and into CNTS setting page
4-3	CNTS(Count Rates Select) Default = 50KHZ	CntS 50tHZ	1.Decide Count Rates with▲or▼key (50HZ,500HZ,50KHZ) 2.Press◀key enter data and into CODE setting page
4-4	CODE(Pass Code setting page) Default = 0	CodE 00000	1.Decide pass code with ◀ or ▲ or ▼ key(0~99999) 2.Press ◀ key enter data and into LOCK setting page
4-5	LOCK(Panel Lock setting page) Default = NO	LoCt 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) Default = HI	ACt 1 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) Default = HI	ACt2 Hi	1.Decide active 2 with ▲ or ▼ key(HI or LO) 2.Press ◀ key enter data and into ACT3 setting page
5-3	ACT3(Alarm Active 3 setting page) Default = HI	ACt3 Hi	1.Decide active 3 with ▲ or ▼ key(HI or LO) 2.Press ◀ key enter data and into ACT4 setting page
5-4	ACT4(Alarm Active 4 setting page) Default = HI	ACt4 Hi	1.Decide active 4 with ▲ or ▼ key(HI or LO) 2.Press ◀ key enter data and into HYS1 setting page

5-5	HYS1(Alarm Hysteresis 1 setting page) Default = 0	HYS 1 00000	1.Decide Hysteresis 1 with ◀ or ▲ or ▼ key(0~999) 2.Press ENT key enter data and into HYS2 setting page
5-6	HYS2(Alarm Hysteresis 2 setting page) Default = 0	HYS2 00000	1.Decide Hysteresis 2 with ◀ or ▲ or ▼ key(0~999) 2.Press ENT key enter data and into HYS3 setting page
5-7	HYS3(Alarm Hysteresis 3 setting page) Default = 0	HYS3 00000	1.Decide Hysteresis 3 with ◀ or ▲ or ▼ key(0~999) 2.Press ENT key enter data and into HYS4 setting page
5-8	HYS4(Alarm Hysteresis 4 setting page) Default = 0	HYS4 00000	1.Decide Hysteresis 4 with ◀ or ▲ or ▼ key(0~999) 2.Press ENT key enter data and into DEL1 setting page
5-9	DEL1(Alarm Delay 1 setting page) Default = 0	dEL 1 0000.0	1.Decide delay 1with ◀ or ▲ or ▼ key(-99.9~99.9 sec) 2.Press ENT key enter data and into DEL2 setting page Note:-0.1 ~ -99.9 sec = Alarm active time 0.1 ~ 99.9 sec = Alarm delay time
5-10	DEL2(Alarm Delay 2 setting page) Default = 0	dEL2 0000.0	1.Decide delay 2with ◀ or ▲ or ▼ key(-99.9~99.9 sec) 2.Press ENT key enter data and into DEL3 setting page Note:-0.1 ~ -99.9 sec = Alarm active time 0.1 ~ 99.9 sec = Alarm delay time
5-11	DEL3(Alarm Delay 3 setting page) Default = 0	dEL3 0000.0	1.Decide delay 3with ◀ or ▲ or ▼ key(-99.9~99.9 sec) 2.Press ENT key enter data and into DEL4 setting page Note:-0.1 ~ -99.9 sec = Alarm active time 0.1 ~ 99.9 sec = Alarm delay time
5-12	DEL4(Alarm Delay 4 setting page) Default = 0	dEL4 0000.0	1.Decide delay 4 with ◀ or ▲ or ▼ key(-99.9~99.9sec) 2.Press ENT key enter data and return ROP setting group Note:-0.1 ~ -99.9 sec = Alarm active time 0.1 ~ 99.9 sec = Alarm delay time
6	AOP(Analog output setting group)	AoP	Press ◀ key decide AOP setting group , press ENT key into ANLO setting page
6-1	ANLO(A/O Zero According to Display setting page) Default = 0	AnLo 00000	1.Decide ANLO with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ENT key enter data and into ANHI setting page
6-2	ANHI(A/ O Span According to Display setting page) Default = 99999	AnHi 99999	1.Decide ANHI with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ENT key enter data and return AOP setting group
7	DOP(Communication setting group)	doP	press ◀ key decide DOP setting group,press ENT key into ADDR setting page
7-1	ADDR(Communication –Address setting page) Default = 0	Addr 00000	1.Decide address with ◀ or ▲ or ▼ key(0~255) 2.Press ENT key enter data and into BAUD setting page
7-2	BAUD(Communication Baud Rate setting page) Default = 19200	bAUd 19200	1.Decide baud rate with ▲ or ▼ key(38400,19200,9600,4800,2400) 2.Press ENT key enter data and into PARI setting page
7-3	PARI(Communication Parity Check setting page) Default = n82	PAri n.8.2.	1.Decide parity check with ▲ or ▼ key(n82,n81,even,odd) 2.Press ENT key enter data and return DOP setting group
Step	Parameter mark description	Parameter mark	Operation manual
8	Normal display	12345	Press ◀/ALARM key about 3 sec,into AL1 setting page
8-1	AL1 (Alarm value 1 setting page) Default = 0	AL 1 00000	1.Decide alarm value 1 with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ENT key enter data and into AL2 setting page
8-2	AL2 (Alarm value 2 setting page) Default = 0	AL2 00000	1.Decide alarm value 2 with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ENT key enter data and into AL3 setting page

8-3	AL3 (Alarm value 3 setting page) Default = 0	AL3 00000	1.Decide alarm value 3 with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ENT key enter data and into AL4 setting page
8-4	AL4 (Alarm value 4 setting page) Default = 0	AL4 00000	1.Decide alarm value 4 with ◀ or ▲ or ▼ key(-19999~99999) 2.Press ENT key enter data and return normal display

Step	Parameter mark description	Parameter mark	Operation manual
9	Normal display	12345	Press ▲/D-ADJ key about 3 sec,into SCALE setting page
9-1	SCALE (Display Scale setting page) Default = 1	SCALE 1.0000	1.Decide scale with ◀ or ▲ or ▼ key(0.0001~9.9999) 2.Press ENT 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) Default = 0	APEro 00000	1.Adjustment analog output zero with ◀ or ▲ or ▼ 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 ◀ or ▲ or ▼ key(±6000) 2.Press ENT key enter data and return normal display

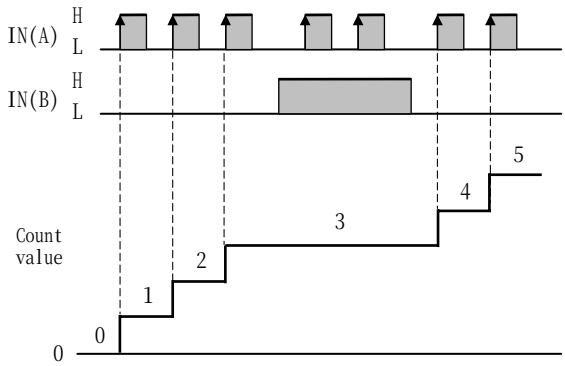
Appendix	Error Mark description	Error Mark	Analyze & Description
1	Display positive over error detect	doFL	Input signal over display range(99999)
2	Display negative over error detect	-doFL	Input signal under display range(-19999)
3	EEPROM error detect	E-00 no YES	1.External interference when EEPROM read/write 2.EEPROM write over 1 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 ENT key return normal display 3. EEPROM was reset,Please follow step 1~10 set again

■ Input Type and Count Value

UP(Increment)Type

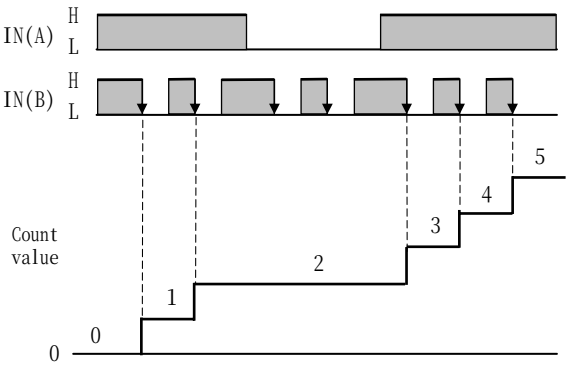
1U2G(PNP)

IN(A):Count input; IN(B):Prohibit(gate)input



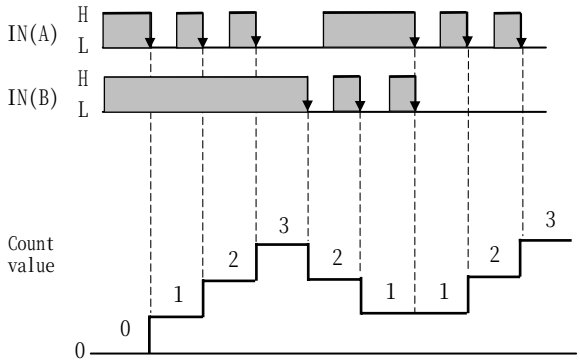
1G2U(NPN)

IN(A):Prohibit(gate)input; IN(B):Count input

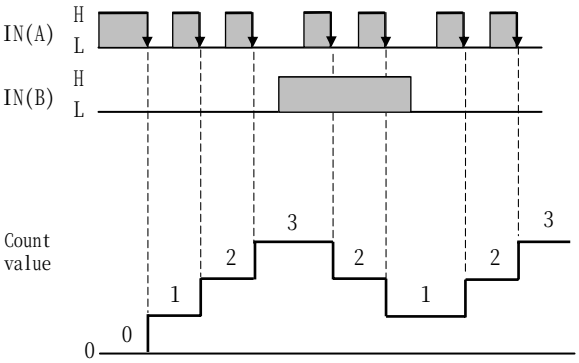


UP/DOWN Type

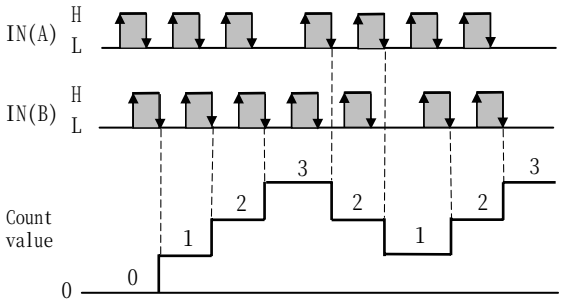
1U2D



1P2D



1A2B(x4 mode)



MMCH 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,Input Range 0000~0004(0~4)(0:10^{0},1:10^{-1},2:10^{-2},3:10^{-3},4:10^{-4})	R/W
0001	TYPE	Input Type,Input Range 0000~0004(0~4)(0:1U2G,1:1G2U,2:1U2D,3:1P2D,4:1A2B)	R/W
0002	LOCK	Panel Lock,Input Range 0000~0001(0~1)(NO/YES)	R/W
0003	CNTS	Count Rates Select,Input Range 0000~0002(0~2)(0:50HZ,1:500HZ,2:50KHZ)	R/W
0004	ACT1	Alarm Active 1,Input Range 0000~0001(0~1)(0:HI,1:LO)	R/W
0005	ACT2	Alarm Active 2,Input Range 0000~0001(0~1)(0:HI,1:LO),	R/W
0006	ACT3	Alarm Active 3,Input Range 0000~0001(0~1)(0:HI,1:LO)	R/W
0007	ACT4	Alarm Active 4,Input Range 0000~0001(0~1)(0:HI,1:LO)	R/W
0008	HYS1	Alarm hysteresis 1,Input Range 0000~03E7(0~999)	R/W
0009	HYS2	Alarm hysteresis 2,Input Range 0000~03E7(0~999)	R/W
000A	HYS3	Alarm hysteresis 3,Input Range 0000~03E7(0~999)	R/W
000B	HYS4	Alarm hysteresis 4,Input Range 0000~03E7(0~999)	R/W
000C	DEL1	Alarm Delay 1,Input Range FC19~03E7(-99.9~99.9)	R/W
000D	DEL2	Alarm Delay 2,Input Range FC19~03E7(-99.9~99.9)	R/W
000E	DEL3	Alarm Delay 3,Input Range FC19~03E7(-99.9~99.9)	R/W
000F	DEL4	Alarm Delay 4,Input Range FC19~03E7(-99.9~99.9)	R/W
0010	ADDR	Communication Address,Input Range 0000~00FF(0~255)	R/W
0011	BAUD	Communication Baud Rate,Input Range 0000~0004(0~4)(0:38400,1:19200,2:9600,3:4800,4:2400)	R/W
0012	PARI	Communication Parity Check,Input Range 0000~0003(0~3)(0:N82,1:N81,2:EVEN,3:ODD)	R/W
0013	A_ZERO	Analog Output Zero Adjust,Input Range E890~1770(-6000~6000)	R/W
0014	A_SPAN	Analog Output Span Adjust,Input Range E890~1770(-6000~6000)	R/W
0015	CODE	Pass Code,Input Range 00000000~0001869F(0~99999)high word	R/W
0016		Pass Code,Input Range 00000000~0001869F(0~99999)low word	R/W
0017	SCALE	Scale,Input Range 00000001~0001869F(0.00001~9.9999)high word	R/W
0018		Scale,Input Range 00000001~0001869F(0.00001~9.9999)low word	R/W
0019	ANLO	Analog Output Zero According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
001A		Analog Output Zero According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
001B	ANHI	Analog Output Span According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
001C		Analog Output Span According to Display,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
001D	AL1	Alarm 1,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
001E		Alarm 1,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
001F	AL2	Alarm 2,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0020		Alarm 2,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
0021	AL3	Alarm 3,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0022		Alarm 3,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
0023	AL4	Alarm 4,Input Range FFFFB1E1~0001869F(-19999~99999)high word	R/W
0024		Alarm 4,Input Range FFFFB1E1~0001869F(-19999~99999)low word	R/W
0025	DISP	Display Value,Display Range FFFFB1E1~0001869F(-19999~99999)high word	R
0026		Display Value,Display Range FFFFB1E1~0001869F(-19999~99999)low word	R
0027	STATUS	Alarm Status,Display Range 0000~003F(0~63)Bit0:AL1,Bit1:AL2,Bit2:AL3,Bit3:AL4,Bit4:DOFL,Bit5:-DOFL	R
0028	AZ	Write = 0001(Function 06), Display Value Reset	W