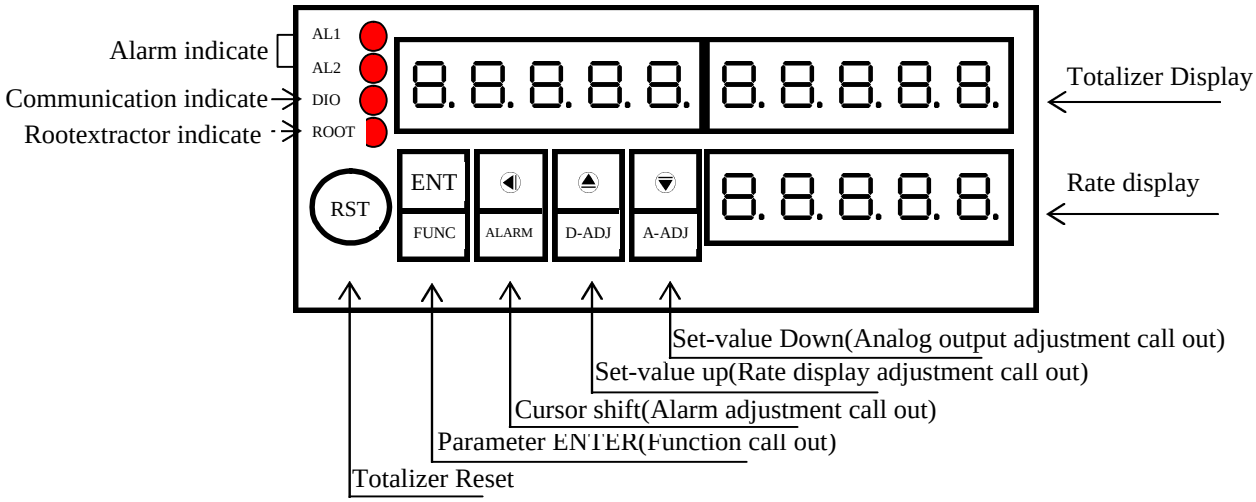
AXE Microprocess Rate & Totalizer Controller Meter PULSE INPUT MFRT series

■FEATURES

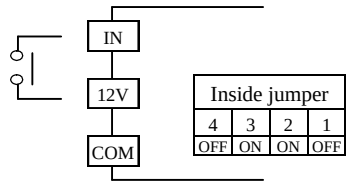
◎Accept pulse(NPN/PNP)or magnetic pick up(>30mV), finish totalizer and control function
◎Accuracy 0.03% F.S.±1 digit
◎Rate display range 0 to 19999 can be modified
◎Totalizer display range 0 to 999999999
◎Input range 0.01Hz~10KHz
◎Rate and Totalizer decimal point can be modified
◎Totalizer timebase can be modified(1/60/3600sec)
◎Scale can be modified(0.00001 to 9999.99999)
◎Totalizer over automatic reset
◎Totalizer can be stop count by terminal
◎15BIT DAC analog output can be modified, 0~10V /4~20mA by inside switch jumper
◎Display average can be modified(1~99)
◎BAUD RATE:19200/9600/4800/2400
◎0.4" highlight display
◎Man-machine interface,easy to operate
◎EEPROM Saving ,data safekeeping about 10 years
◎Modified inside parameter ,must have pass code
◎Dual alarm function
◎Power down saving
◎Exciting supply DC12V,<60mA

■Name of Parts

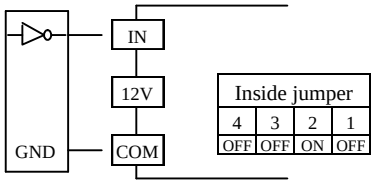


■ Connect Diagram

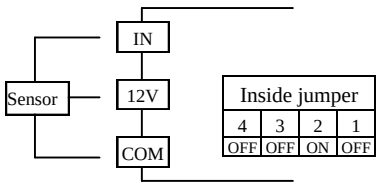
◎Contact input(PNP)



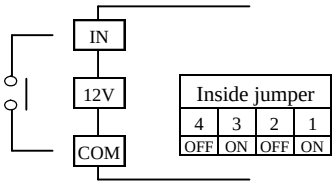
◎CMOS input(12V or 15V)



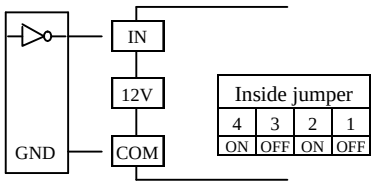
◎Sensor input(PNP 12V)



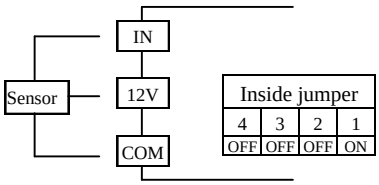
◎Contact input(NPN)



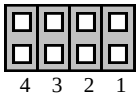
◎TTL input(5V)



◎Sensor input(NPN 12V)

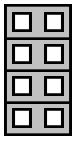


■Analog output function jumper table



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

■Input function jumper table



Position 4 ON: TTL OFF:CMOS
Position 3 ON: 0~50Hz OFF:0~10KHz
Position 2 ON: PNP
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.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 DPR setting page
4-1	DPR(Decimal Point Rate setting page)Default=0	0 dPr	1. Decide rate decimal point position with ▲&▼ key(0 to 4) 2. Press ㊎ key enter data and into DSPH setting page
4-2	DSPH(Display High Scale setting page)Default=19999	19999 dSPH	1.Decide rate display high scale with ◀&▲&▼ key(0 to 19999) 2.Press ㊎ key enter data and into INHI setting page
4-3	INHI(Input Max. Hz) Default=9999.99	9999.99 InHi	1.Decide input max. Hz with ◀&▲&▼ key(0.01 to 9999.99Hz) 2.Press ㊎ key enter data and into AVG setting page
4-4	AVG (Dispaly Average time setting page)Default=1	1 AvG	1.Decide display average times with ◀&▲&▼ key(1 to 99) 2.Press ㊎ key enter data and into TBASE setting page
4-5	TBASE(Time Base) Default=0.1	0.1 tbASE	1.Decide time base with ◀&▲&▼ key(0.1 to 99.9) 2.Press ㊎ key enter data and into DPT setting page
4-6	DPT (Decimal Point Totalizer setting page)Default=0	0 dPt	1.Decide totalizer decimal point position with ▲&▼ key(0 to 8) 2.Press ㊎ key enter data and into C.TIME setting page
4-7	C.TIME (Count Time) Default=1	1 C.ti mE	1.Decide C.TIME with ▲&▼ key(1/60/3600 sec) 2.Press ㊎ key enter data and into SCALE setting page
4-8	SCALE (Scale to totalize setting page)Default=1	1.00000 SCALE	1.Decide Totalize scale with ◀&▲&▼ key(0.00001 to 9999.99999) 2.Press ㊎ key enter data and into CODE setting page
4-9	CODE(Pass Code setting page)Default=0	0 CodE	1.Decide pass code with ◀&▲&▼ key(0 to 19999) 2.Press ㊎ key enter data and into LOCK setting page
4-10	LOCK(Panel Lock setting page)Default=NO	no LoCK	1.Decide panel lock with ▲&▼ key(NO or YES) 2.Press ㊎ key enter data and return SYS setting group
4-11	SYS(System setting group)	SYS	Press ◀ key decide SYS setting group,press ㊎ key into DPR setting page

5	ROP(Alarm setting group)	rOP	Press ◀ key decide ROP setting group,press ENT key into AL.SEL setting page
5-1	AL.SEL(Alarm Select setting page)Default=RATE	rATE AL.SEL	1.Decide Alarm select with ▲&▼ key(RATE or TOTALIZER) 2.Press ENT key enter data and into ACT1 setting page
5-2	ACT1(Alarm Active 1 setting page)Default=HI	HI ACT1	1.Decide Alarm active 1 with ▲&▼ key(HI or LO) 2.Press ENT key enter data and into ACT2 setting page
5-3	ACT2(Alarm Active 2 setting page)Default=HI	HI ACT2	1.Decide Alarm active 2 with ▲&▼ key(HI or LO) 2.Press ENT key enter data and return ROP setting group
5-4	ROP(Alarm setting group)	rOP	Press ◀ key decide ROP setting group,press ENT key into AL.SEL setting page
6	AOP(Analog output setting group)	AOP	Press ◀ key decide AOP setting group,press ENT key into AO.SEL setting page
6-1	AO.SEL(Analog Output Select setting page)Default=RATE	rATE AO.SEL	1.Decide Analog output select with ▲&▼ key(RATE or TOTALIZER) 2.Press ENT key enter data and into ANLO setting page
6-2	ANLO(A/O Zero According to Display setting page) Default=0	000000000 ANLO	1.Decide ANLO with ◀&▲&▼ key (0~999999999) 2.Press ENT key enter data and into ANHI setting page
6-3	ANHI(A/O Span According to Display setting page) Default=19999	0000 19999 ANHI	1.Decide ANHI with ◀&▲&▼ key(0~999999999) 2.Press ENT key enter data and return AOP setting group
6-4	AOP(Analog output setting group)	AOP	Press ◀ key decide AOP setting group,press ENT key into AO.SEL setting page
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	000000000 Addr	1.Decide Communication address with ◀&▲&▼ key(0~255) 2.Press ENT key enter data and into BAUD setting page
7-2	BAUD(Communication Baud Rate setting page) Default=19200	19200 bAUd	1.Decide baud rate with ▲&▼ key(19200,9600,4800,2400) 2.Press ENT key enter data and into PARI setting page
7-3	PARI(Communication Parity Check setting page) Default=n.8.2	n.8.2 PAr1	1.Decide parity check with ▲&▼ key(n82,n81,even,odd) 2.Press ENT key enter data and return DOP setting group
7-4	DOP(Communication setting group)	dOP	Press ◀ key decide DOP setting group,press ENT key into ADDR setting page
Step	Parameter Mark Description	Parameter Mark	Operation Manual
8	Normal display	123456789 12345	Press ◀ key about 3 sec.,into AL1 setting page
8-1	AL1 (Alarm value 1 setting page) Default=0	000000000 AL 1	1.Decide Alarm value 1 with ◀&▲&▼ key(0 to 999999999) 2.Press ENT key enter data and into AL2 setting page
8-2	AL2 (Alarm value 2 setting page) Default=0	000000000 AL2	1.Decide Alarm value 2 with ◀&▲&▼ key(0 to 999999999) 2.Press ENT key enter data and return normal display
Step	Parameter Mark Description	Parameter Mark	Operation Manual
9	Normal display	123456789 12345	Press ▼ key about 3 sec.,into AZERO adjustment page
9-1	AZERO(Analog Output Zero Adjustment page) Default=0	000000000 AZEro	1.Adjustment analog output zero with ◀&▲&▼ key(±9999) 2.Press ENT key enter data and into ASPAN adjustment page
9-2	ASPAN(Analog Output Span Adjustment page) Default=0	000000000 ASPAn	1.Adjustment analog output span with ◀&▲&▼ key(±9999) 2.Press ENT key enter data and return normal display

Appendix	Error Mark Description	Error Mark	Analyze & Description
1	Input over error detect	123456789 1oFL	Input frequency over range(10KHz)
2	Display over error detect	123456789 doFL	Display over range(99999)
3	EEPROM error detect	no E-00 YES E-00	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 ENT key return normal display 3.EEPROM was reset,Please follow step 1~10 set again

MFRT 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	DPR	Input range 0000~0004(0~4)0:10^0,1:10^{-1},~,4:10^{-4}	R/W
0002	DSPH	Input range 0000~4E1F(0~19999)	R/W
0004	AVG	Input range 0001~0063(1~99)	R/W
0006	TBASE	Input range 0001~03E7(1~999)	R/W
0008	DPT	Input range 0000~0004(0~8)0:10^0,1:10^{-1},~,8:10^{-8}	R/W
000A	CTIME	Input range 0000~0002(0~2)0:1,1:60,2:3600 秒	R/W
000C	CODE	Input range 0000~4E1F(0~19999)	R/W
000E	LOCK	Input range 0000~0001(0~1)0:NO,1:YES	R/W
0010	ALSEL	Input range 0000~0001(0~1)0:RATE,1:TOTAL	R/W
0012	ACT1	Input range 0000~0001(0~1)0:HI,1:LO	R/W
0014	ACT2	Input range 0000~0001(0~1)0:HI,1:LO	R/W
0016	AOSEL	Input range 0000~0001(0~1)0:RATE,1:TOTAL	R/W
0018	ADDR	Input range 0000~00FF(0~255)	R/W
001A	BAUD	Input range 0000~0003(0~3)0:19200,1:9600,2:4800,3:2400	R/W
001C	PARI	Input range 0000~0003(0~3)0:N82,1:N81,2:EVEN,3:ODD	R/W
001E	AZERO	Input range D8F1~270F(-9999~9999)	R/W
0020	ASPAN	Input range D8F1~270F(-9999~9999)	R/W
0022	ANLO	Input range 00000000~3B9AC9FF(0~999999999)	R/W
0026	ANHI	Input range 00000000~3B9AC9FF(0~999999999)	R/W
002A	AL1	Input range 0~3B9AC9FF(0~999999999)	R/W
002E	AL2	Input range 0~3B9AC9FF(0~999999999)	R/W
0032	SCALE	Input range 1~3B9AC9FF(1~999999999)	R/W
0036	INHI	Input range 1~0F423F(1~999999)	R/W
003A	TOTAL	Display range 00000000~3B9AC9FF(0~999999999)	R
003E	RATE	Display range 0000~4E1F(0~19999)	R