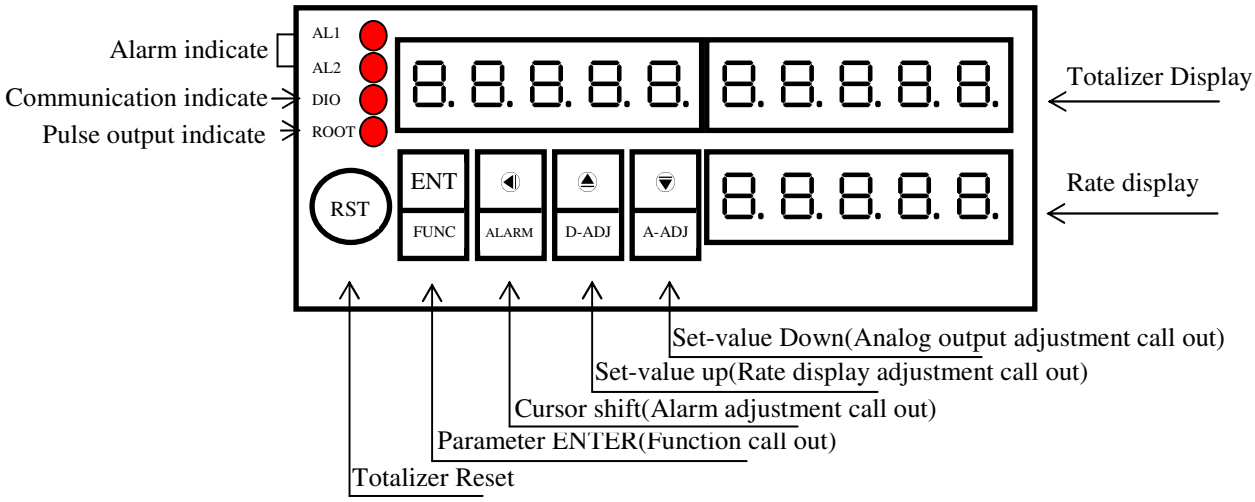
AXE Microprocess WATT/WATT HOUR(VAR/VAR HOUR)Controller Meter MPH series

■FEATRUES

◎Accept WATT or VAR(1ψ2W,3ψ3W,3ψ4W)input, finish Totalizer and control function
◎Accuracy 0.25% F.S.±1 digit
◎Rate display range 0 to 19999 can be modified
◎Totalizer display range 0 to 999999999
◎Rate and Totalizer decimal point can be modified
◎Scale can be modified(0.00001 to 9999.99999)
◎Totalizer over automatic reset
◎Digit output function 1count/1Pulse
◎Pulse width about 65mS
◎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

■Name of Parts



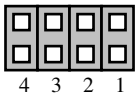
■Alarm action mode & Connect Diagram Description

1. ACT=HI, Display value≧Alarm value, Relay active ; Display value<Alarm value, Relay reset

2. ACT=LO, Display value<Alarm value, Relay active ; Display value≧Alarm value, Relay reset

3. RST Connect terminal function: When terminal RST&COM short about 200ms,Totalizer reset

■Analog output function jumper table



Position 1&3 ON: DC 4~20 mA OUTPUT

Position 2&4 ON: DC 0~10V OUTPUT

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 rate display page (DZERO&DSPAN) 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 parameter data will increment .(Key response about 0.2 sec.)
▼key function	2.In normal display,The key function is call out adjustment analog output page(AZERO&ASPAN) 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 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	123456789 12345	Press ㊎/FUNC key into P.COD setting page
2	P.COD(Pass Code input page)	0000000000 P.Cod	1.Key in 5 digit pass code with ◀&▲&▼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	0000 19999 dSPH	1.Decide rate display high scale with ◀&▲&▼key(0 to 19999) 2.Press ㊎key enter data and into AVG setting page * DSPH = Standard Watts(Vars) * PT RATE * CT RATE
4-3	AVG (Dispaly Average time setting page)Default=1	00000001 AvG	1.Decide display average times with ◀&▲&▼key(1 to 99) 2.Press ㊎key enter data and into DPT setting page
4-4	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 SCALE setting page
4-5	SCALE (Scale to totalize setting page)Default=1	000 1.00000 SCALE	1.Decide Totalize scale with ◀&▲&▼key(0.00001 to 9999.99999) 2.Press ㊎key enter data and into CODE setting page
4-6	CODE(Pass Code setting page)Default=0	0000000000 CodE	1.Decide pass code with ◀&▲&▼key(0 to 19999) 2.Press ㊎key enter data and into LOCK setting page
4-7	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
5	ROP(Alarm setting group)	 rop	Press ◀key decide ROP setting group, press ㊎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 ㊎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 ㊎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 FN key enter data and into DEL1 setting page
5-4	DEL1(Alarm Delay 1 setting page)Default=0	000000000 dEL1	1.Decide Alarm delay 1with ◀ & ▲ & ▼ key(0~99 sec) 2.Press FN key enter data and into DEL2 setting page
5-5	DEL2(Alarm Delay 2 setting page)Default=0	000000000 dEL2	1.Decide Alarm delay 2 with ◀ & ▲ & ▼ key(0~99 sec) 2.Press FN key enter data and return ROP setting group
6	AOP(Analog output setting group)	 AoP	Press ◀ key decide AOP setting group, press FN 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 FN 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 FN 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 FN key enter data and return AOP setting group
7	DOP(Communication setting group)	 doP	Press ◀ key decide DOP setting group, press FN 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 FN 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 FN key enter data and into PARI setting page
7-3	PARI(Communication Parity Check setting page) Default=n82	n82 PAri	1.Decide parity check with ▲ & ▼ key(n82,n81,even,odd) 2.Press FN 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	123456789 12345	Press ◀ key about 3 sec., into AL1 setting page
8-1	AL1 (Alarm value 1 setting page) Default=0	000000000 AL1	1.Decide Alarm value 1 with ◀ & ▲ & ▼ key(0 to 999999999) 2.Press FN 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 FN 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 DZERO adjustment page
9-1	DZERO(Rate Display Zero Adjustment page) Default=0	000000000 dPEro	1.Input low signal, and adjustment display zero with ▲ & ▼ key 2.Press FN key enter data and into DSPAN adjustment page
9-2	DSPAN(Rate Display Span Adjustment page) Default=0	000000000 dSPAn	1.Input high signal, and adjustment display span with ▲ & ▼ key 2.Press FN key enter data and return normal display
Step	Parameter Mark Description	Parameter Mark	Operation Manual
10	Normal display	123456789 12345	Press ▼ key about 3 sec., into AZERO adjustment page
10-1	AZERO(Analog Output Zero Adjustment page) Default=0	000000000 APEro	1.Adjustment analog output zero with ◀ & ▲ & ▼ key(±9999) 2.Press FN key enter data and into ASPAN adjustment page
10-2	ASPAN(Analog Output Span Adjustment page) Default=0	000000000 ASPAn	1.Adjustment analog output span with ◀ & ▲ & ▼ key(±9999) 2.Press FN key enter data and return normal display

Appendix	Error Mark Description	Error Mark	Analyze & Description
1	Input over error detect	123456789 1 oFL	Input signal over range(120%)
2	Display over error detect	123456789 doFL	Display over range(19999)
3	A/D Converter error detect	123456789 AdEr	1. Input signal over range(180%) 2. Inside circuit damage Please moving input signal if still display ADER, please contact us
4	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 Ⓝ key return normal display EEPROM was reset, Please follow step 1~10 set again

MODEL		Element connection	Standard analog calibration Watts or Vars					
Watts	Vars		V = 120V		V = 240V		V = 400V	
			1A	5A	1A	5A	1A	5A
PW1	PV1	1 φ 2W	100	500	200	1K	400	2K
PW3	PV3	3 φ 3W	200	1K	400	2K	800	4K
PW4	PV4	3 φ 4W	300	1.5K	600	3K	1.2K	6K

MPH 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	DPT	Input range 0000~0004(0~8)0:10^{0},1:10^{-1},~,8:10^{-8}	R/W
0008	CODE	Input range 0000~4E1F(0~19999)	R/W
000A	LOCK	Input range 0000~0001(0~1)0:NO,1:YES	R/W
000C	ALSEL	Input range 0000~0001(0~1)0:RATE,1:TOTALIZE	R/W
000E	ACT1	Input range 0000~0001(0~1)0:HI,1:LO	R/W
0010	ACT2	Input range 0000~0001(0~1)0:HI,1:LO	R/W
0012	DEL1	Input range 0000~0063(0~99)	R/W
0014	DEL2	Input range 0000~0063(0~99)	R/W
0016	AOSEL	Input range 0000~0001(0~1)0:RATE,1:TOTALIZE	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 0000~0002(0~2)0:NON,1:EVEN,2: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 0~3B9AC9FF(0~999999999)	R/W
0026	ANHI	Input range 0~3B9AC9FF(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
003E	TOTALIZ	Display range 00000000~3B9AC9FF(0~999999999)	R
0042	RATE	Display range 0000~4E1F(0~19999)	R