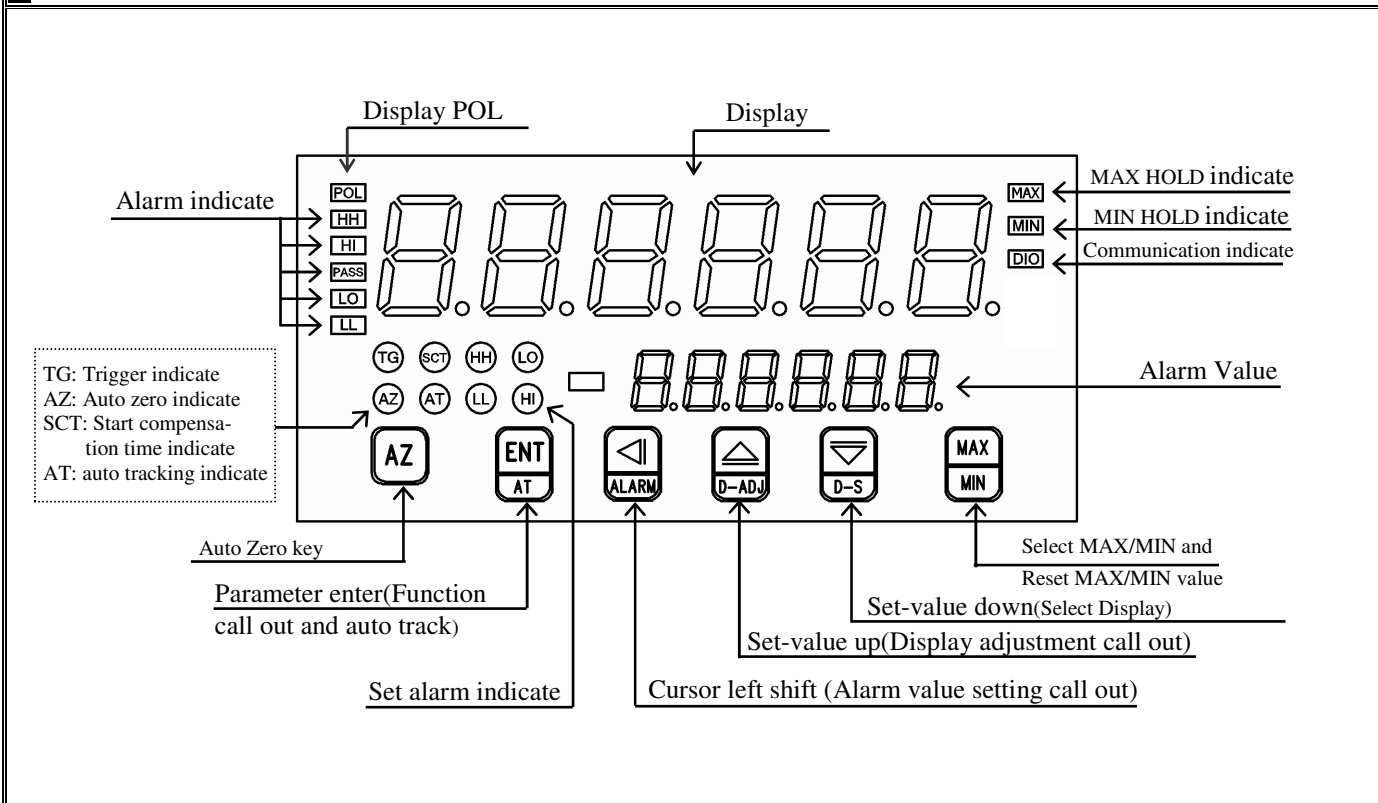


■ Features

- ⊙ Accuracy 0.01%F.S.±3digit
- ⊙ Measuring DCA/DCV/ACA/ACV/Potentiometer/Pt-100/Transmitter/Load Cell/Resistor...etc
- ⊙ Display range -999999~999999 can be modified
- ⊙ High speed 2000 samples/sec
- ⊙ Zero point auto tracking drift comp
- ⊙ Display value can Auto-zero and Hold function
- ⊙ 4 Alarm function + additional PASS output
- ⊙ 16BIT DAC analog output can be modified, 0~10V /4~20mA by inside switch jumper
- ⊙ RS485 communication interface, Protocol MODBUS RTU MODE
- ⊙ NEMA4/IP64

■ Name Of Parts



Key Introduce	Operation Manual
AZ Key Function	Display auto zero key
⊙/AT Key Function	1. In normal display, The key function is call out setting group or AT function (press 5sec set/clear) 2. In parameter setting page, The key function is data Enter, and goto next page Note: AT is higher priority than AZ, do not use both at the same time
◀/ALARM 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)
▲/D-ADJ 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)
▼/DS Key Function	1. In normal display, The key function is change normal display 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)
MAX/MIN Key Function	1. In normal display, Press MAX/MIN key will show MAX/MIN value 2. Press MAX/MIN key 5 sec will reset MAX/MIN value 3. In MAX/MIN page, Press ▼/DS Key return normal display
▲&▼ 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

Step	Parameter Mark Description	Parameter Mark	Operation Manual
1	Normal display	1 2 3 4	Press /AT key into P.COD setting page
2	P.COD(Pass code input page) Default=0	P. C O D □ □ □ □ □	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) ROP(Alarm setting group) DOP(Communication setting group) AOP(Analog output setting group)	S Y S r o P d o P A o P	1.Select setting group with key 2.Press key into setting page of selection setting group
4	SYS(System setting group)	S Y S	1.Press key decide SYS setting group 2.Press key into DP setting page
4-1	DP(decimal point) Default=1	d P .	1.Press & key decide decimal point(0~5) 2.Press key into A-DSPL setting page
4-2	A-DSPL(IN-A display low) Default=0	A - d S P L □ □ □ □ □ □	1.Press & & key decide IN-A display low(-999999~999999) 2.Press key into A-DSPH setting page
4-3	A-DSPH(IN-A display high) Default=100000	A - d S P H □ □ □ □ □	1.Press & & key decide IN-A display high(-999999~999999) 2.Press key into D-R-P setting page
4-4	D-R-P(display renew period) Default=0.1	d - r - P □ .	1.Press & key decide display renew Period (0.1/0.5/1.0/2.0/4.0 sec) 2.Press key into STEP setting page
4-5	STEP(display step) Default=1	S t e P 	1.Press & key decide display step(1/2/5/10/25/50) 2.Press key into AVG-N setting page
4-6	AVG-N(average numbers) Default=1	A v g - n 	1.Press & key decide average numbers(1/2/4/8/16/32/64/128/256 /512/1024 times), More average will have more stable display 2.Press key into LCUT setting page
4-7	LCUT(low cut) Default=0	L C U T □ □ □	1.Press & & key decide TG-H(0~999) 2.Press key into TG-H setting page
4-8	TG-H(trigger hold) Default=normal	t g - h n o r m a l	1.Press & key decide trigger hold(normal/S-H/P-H/B-H/P-P) 2.Press key into CODE setting page
4-9	CODE(Code) Default=0	C o d e □ □ □ □ □	1.Press & & key decide Code(0~99999) 2.Press key into LOCK setting page
4-10	LOCK(Panel Lock) Default=NO	L o c k n o	1.Press & key decide Panel Lock(NO or YES) 2.Press key return SYS setting group
4	SYS(System setting group)	S Y S	1.Press key decide SYS setting group 2.Press key into DP setting page
5	ROP(Alarm setting group)	r o P	1.Press key decide ROP setting group 2.Press key into AL-P setting page
5-1	AL-P(Alarm program) Default=normal	A L - P n o r m a l	1.Press & key decide Alarm (normal/level/zone) 2.Press key into HYS setting page
5-2	HYS(Hysteresis) Default=0	H Y S □ □ □	1.Press & & key decide Hysteresis(0~999) 2.Press key into DEL-P setting page
5-3	DEL-P(Delay program) Default=on-d	d e l - P o n - d	1.Press & key decide Delay (on-d/off-d) 2.Press key into ON-D/OFF-D setting page
5-4	ON-D/OFF-D(ON/OFF Delay time) Default=0	o n - d □ □ . □ □ □ □	1.Press & & key decide ON/OFF Delay time(0.000~99.999) 2.Press key into SHOT-T setting page
5-5	SHOT-T(alarm shot time) Default=0	S h o t - t □ □ . □ □ □ □	1.Press & & key decide alarm shot time(0.000~99.999) 2.Press key into OUT-L setting page
5-6	OUT-L(Output logic) Default=n-o	o u t - l n - o	1.Press & key decide output logic(n-o/n-c) 2.Press key into SCB setting page

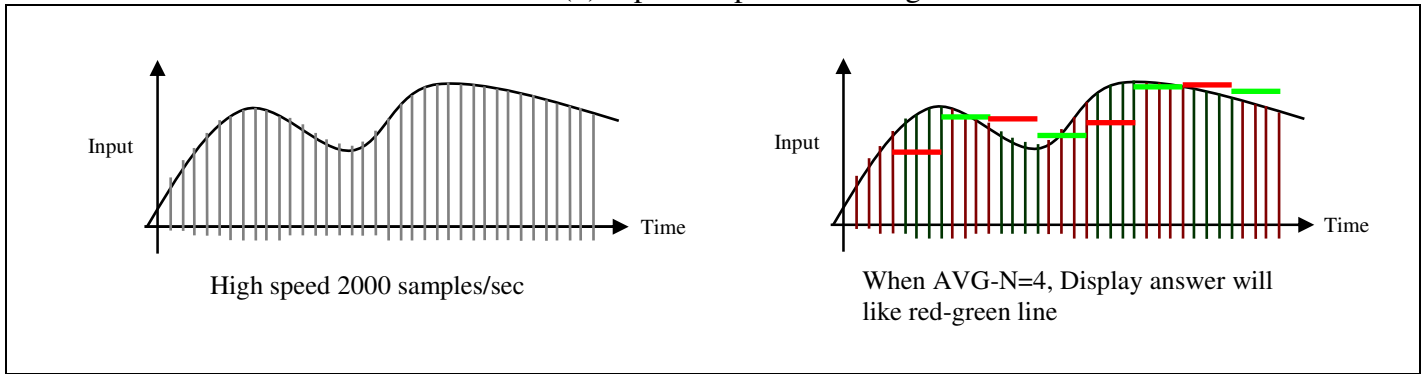
5-7	SCB(start compensation band) Default=0	5 C b 0 0 0	1.Press ◀&▲&▼key decide start compensation band setting page(0~999) 2.Press Ⓜkey into SCT setting page
5-8	SCT(start compensation time) Default=0.0	5 C t 0 0 . 0	1.Press ◀&▲&▼key decide start compensation time(0~99.9 秒) 2.Press Ⓜkey return setting group
5	ROP(Alarm setting group)	r o P	1.Press ◀key decide ROP setting group 2.Press Ⓜkey into AL-P setting page
6	DOP(Communication setting group)	d o P	1.Press ◀key decide DOP setting group 2.Press Ⓜkey into ADDR setting page
6-1	ADDR(Communication Address) Default=0	A d d r 0 0 0	1.Press ◀&▲&▼key decide Communication Address(0~255) 2.Press Ⓜkey into BAUD setting page
6-2	BAUD(Communication Baud Rate) Default=9600	b A U D 1 9 2 0 0	1.Press ▲&▼key decide communication Baud Rate (38400/19200/9600/4800/2400) 2.Press Ⓜkey into PARI setting page
6-3	PARI(Communication Parity Check) Default=n.8.2.	P A r i n . 8 . 2	1.Press ▲&▼key decide Communication Parity Check (n.8.2/n.8.1/even/odd) 2.Press Ⓜkey return DOP setting group
6	DOP(Communication setting group)	d o P	1.Press ◀key decide DOP setting group 2.Press Ⓜkey into ADDR setting page
7	AOP(Analog output setting group)	A o P	1.Press ◀key decide AOP setting group 2.Press Ⓜkey into AO.SEL setting page
7-1	AO.SEL(Analog Output Select) Default=4-20mA	A o . S 4 - 2 0 m A	1.Press ▲&▼key decide Analog Output Select (0~5V/1~5V/0~10V/2~10V/0~20mA/4~20mA) 2.Press Ⓜkey into ANLO setting page
7-2	ANLO(Analog Output Zero-According to Display) Default=0	A n L o 0 0 0 0 0 0	1.Press ◀&▲&▼key decide Analog Output Zero According to Display (-999999~999999) 2.Press Ⓜkey into ANHI setting page
7-3	ANHI(Analog Output Span-According to Display) Default=100000	A n H i 1 0 0 0 0 0	1.Press ◀&▲&▼key decide Analog Output Span According to Display (-999999~999999) 2.Press Ⓜkey into AO.ZO setting page
7-4	AO.ZO(Analog Output Zero) Default=0	A o . Z O 0 . 0 0 0	1.Press ◀&▲&▼key decide Analog Output Zero(-9999~+9999) 2.Press Ⓜkey into AO.SP setting page Note: Output will change immediately
7-5	AO.SP(Analog Output Span) Default=0	A o . S P 0 . 0 0 0	1.Press ◀&▲&▼key decide Analog Output Span(-9999~+9999) 2.Press ◀key return AOP Note: Output will change immediately
7	AOP(Analog output setting group)	A o P	1.Press ◀key decide AOP setting group 2.Press Ⓜkey into AO.SEL setting page
Step	Parameter Mark Description	Parameter Mark	Operation Manual
8	Normal display	1 2 3 4	Press◀/ALARM key 3 sec, into AL-HH setting page
8-1	AL-HH (Alarm HH) Default=40000.0	A L - H H 4 0 0 0 0 . 0	1.Press ◀&▲&▼key decide Alarm HH(-999999~999999) 2.Press Ⓜkey into AL-HI setting page
8-2	AL-HI (Alarm HI) Default=30000.0	A L - H I 3 0 0 0 0 . 0	1.Press ◀&▲&▼key decide Alarm HI(-999999~999999) 2.Press Ⓜkey into AL-LO setting page
8-3	AL-LO (Alarm LO) Default=20000.0	A L - L O 2 0 0 0 0 . 0	1.Press ◀&▲&▼key decide Alarm LO(-999999~999999) 2.Press Ⓜkey into AL-LL setting page
8-4	AL-LL (Alarm LL) Default=10000.0	A L - L L 1 0 0 0 0 . 0	1.Press ◀&▲&▼key decide Alarm LL(-999999~999999) 2.Press Ⓜkey return Normal display
Note: Alarm value must HH > HI > LO > LL(with hysteresis), Please reference- Pic.3			
9	Normal display	1 2 3 4	Press◀/D-ADJ key 3 sec, into IN-1 adjusting page

9-1	ZERO-1(Display zero 1 adjust) Default=0.000	0 E r 0 - !	1.Press ▲&▼key decide IN-1 Display zero(-5.000%~+5.000%) 2.Press Ⓜkey into SPAN-1 setting page Note: IN-A must have zero signal
		0.0000	
9-2	SPAN-1(Display span 1 adjust) Default=0.000	S P R n - !	1.Press ▲&▼key decide IN-1 Display span(-5.000%~+5.000%) 2.Press Ⓜkey return Normal display Note: IN-A must have full-scale signal
		0.0000	

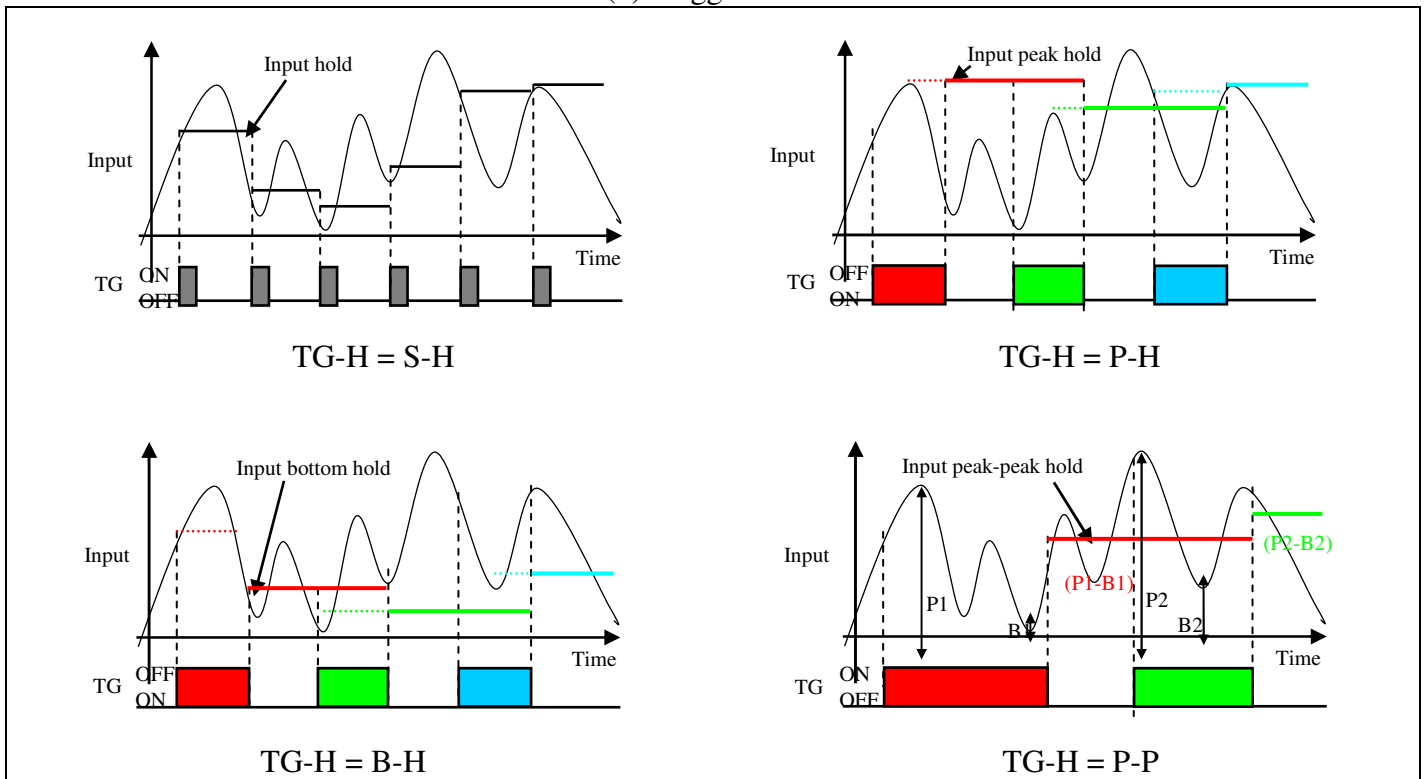
Note:
Please clear AT & AZ function before adjust ZERO & SPAN

Appendix	Error Mark Description	Error Mark	Analyze & Description
1	Display over error detect	d 0 F L	Display over range(999999)
2	Display under error detect	- d 0 F L	Display over range (-999999)
3	A/D Converter error detect	R d E r	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	E - 0 0	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 Decide Yes with ▲or▼, follow step set again
		0 0	
		4 E 5	

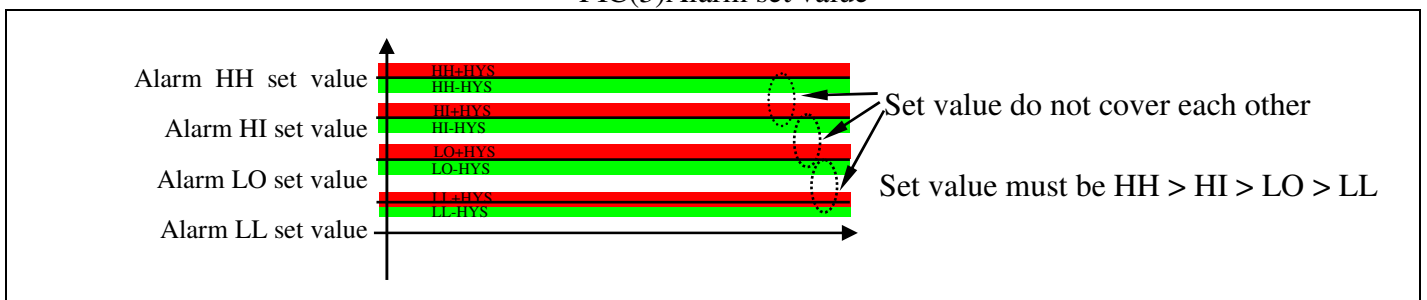
PIC(1): Input sample and average



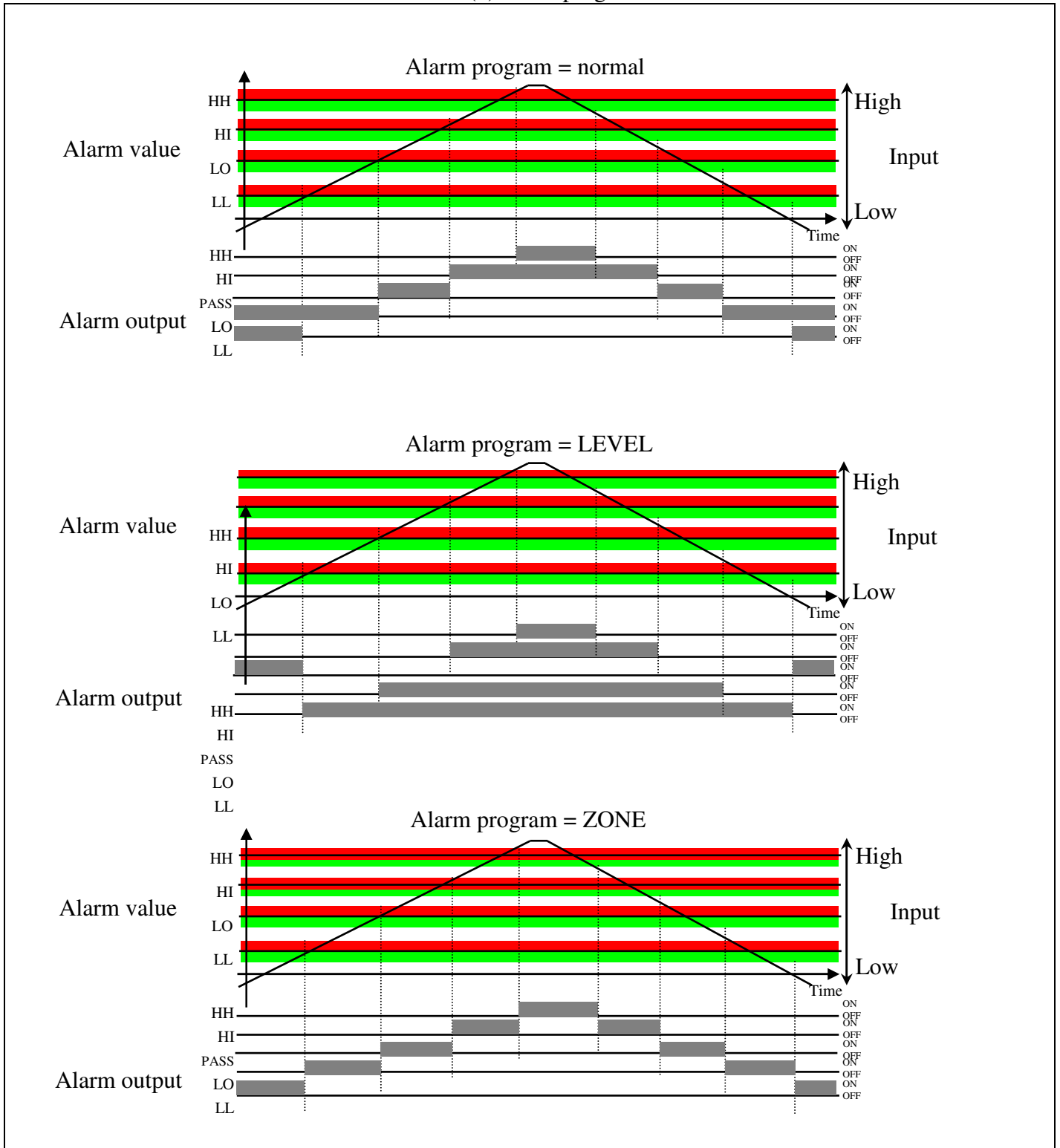
PIC(2): Trigger hold mode



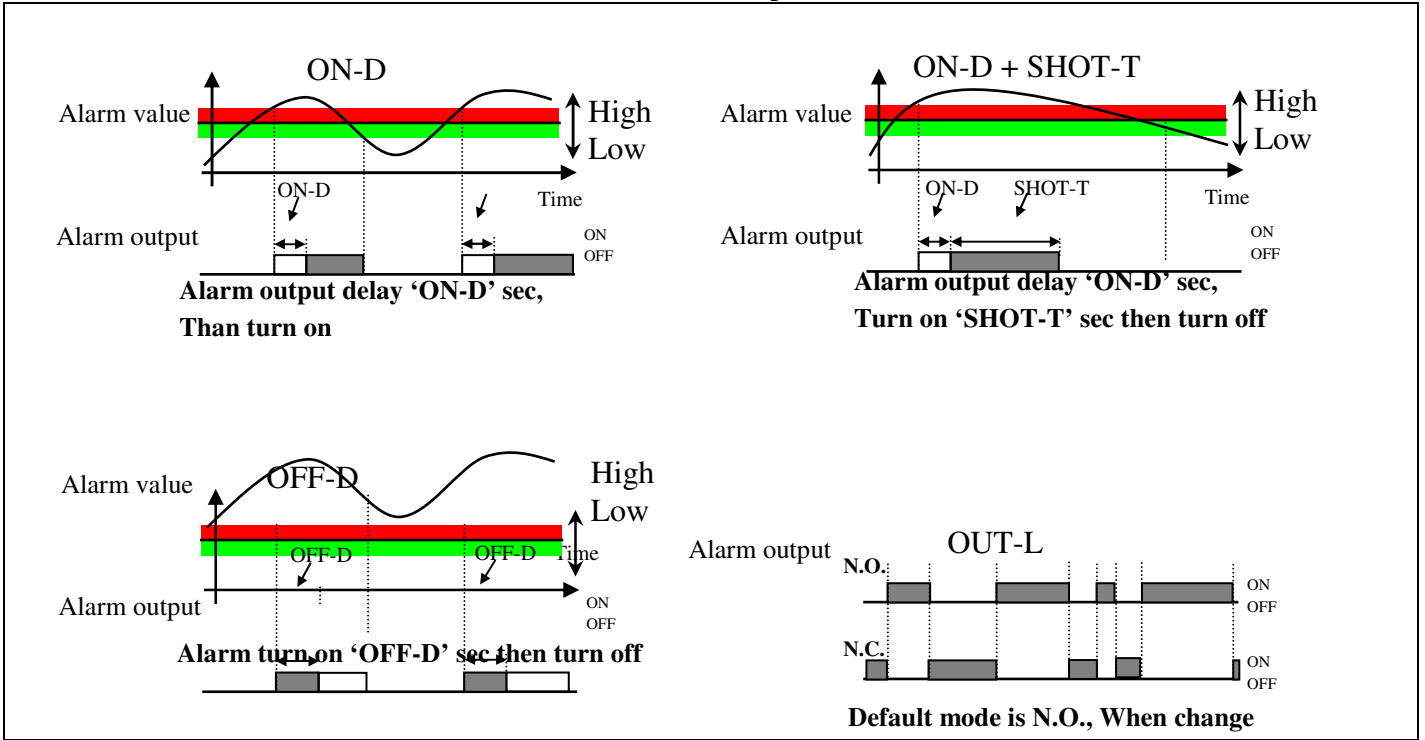
PIC(3) Alarm set value



PIC(4)Alarm program

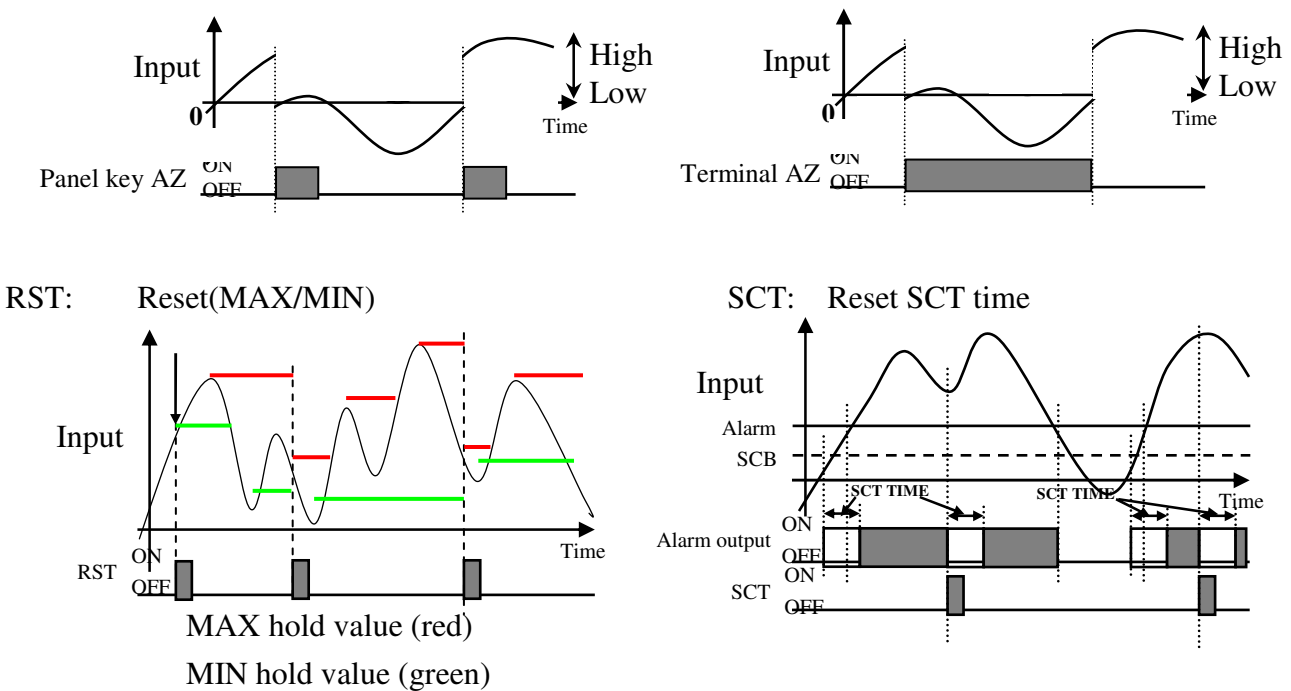


PIC(5) Alarm output mode



PIC(6) Terminal function

AZ: Terminal 'AZ' is higher priority than panel key 'AZ'



MMX-H-00 Modbus RTU Mode Protocol Address Map

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

Address	Name	Description	Accept
0000	SYS STATUS	System status, Range:000~000F (Bit0:ADER, Bit1:AZ, Bit2:AT, Bit3:SCT)	R
0001	ALARM STATUS	Alarm status, Range:0000~001F (0:OFF,1:ON) (Bit0:ALHH, Bit1:ALH, Bit2:ALPASS, Bit3:ALL, Bit4:ALLL)	R
0002	DISPLAY	DISPLAY, Range:0000~0304 (High byte:00:ALARM HH, 01:ALARM H, 02:ALARM L, 03:ALARM LL) (low byte :00:NORMAL DISPLAY, 01:MAX, 02:MIN)	R/W
0003	Reserved		R/W
0004	Reserved		R
0005	DP	DP, Range:0000~0005 (0~5)	R/W
0006	ADSPL	ADSPL, Range:FFF0BDC1~000F423F(-999999~999999) high word	R/W
0007		ADSPL, Range:FFF0BDC1~000F423F(-999999~999999) low word	R/W
0008	ADSPH	ADSPH, Range:FFF0BDC1~000F423F(-999999~999999) high word	R/W
0009		ADSPH, Range:FFF0BDC1~000F423F(-999999~999999) low word	R/W
000A	Reserved		R/W
000B			R/W
000C			R/W
000D			R/W
000E	Reserved		R/W
000F			R/W
0010	CODE	CODE, Range:0~0001869F(0~99999) high word	R/W
0011		CODE, Range:0~0001869F(0~99999) low word	R/W
0012	D-R-P	D-R-P, Range:0000~0005 (0:0.1s, 1:0.2s, 2:0.5s, 3:1.0s, 4:2.0s, 5:4.0s)	R/W
0013	STEP	D-STEP, Range:0000~0006 (0:1, 1:2, 2:5, 3:10, 4:25, 5:50)	R/W
0014	AVG-N	AVG-N, Range:0000~000A (0~10)(0:1, 1:2, 2:4, 3:8, 4:16, 5:32, 6:64, 7:128, 8:256, 9:512, 10:1024)	R/W
0015	TG-H	TG-H, Range:0000~0004 (0:normal, 1:S-H, 2:P-H, 3:B-H, 4:P-P)	R/W
0016	LCUT	LCUT, Range:0000~03E7(0~999)	R/W
0017	LOCK	LOCK, Range:0000~0001 (0:no, 1:yes)	R/W
0018	AL-P	AL-P, Range:0000~0002 (0:normal, 1:LEVEL, 2:ZONE)	R/W
0019	HYS	HYS, Range:0000~03E7(0~999)	R/W
001A	DELP	DELP, Range:0000~0001 (0:ON-D, 1:OFF-D)	R/W
001B	ON-D/OFF-D	ON-D/OFF-D, Range:0000000~0001869F(00.000s~99.999s)high word	R/W
001C		ON-D/OFF-D, Range:0000000~0001869F(00.000s~99.999s)low word	R/W
001D	SHOT-T ¹	SHOT-T, Range:0000000~0001869F(00.000s~99.999s)high word	R/W
001E		SHOT-T, Range:0000000~0001869F(00.000s~99.999s)low word	R/W
001F	OUT-L	OUT-L, Range:0000~0001 (0:Normal is open, 1:Normal is close)	R/W
0020	SCB	SCB, Range:0000~03E7(0~999)	R/W
0021	SCT	SCT, Range:0000~03E7(00.0s~99.9s)	R/W
0022	ADDR ²	ADDR, Range:0000~00FF(0~255)	R/W
0023	BAUD ²	BAUD, Range:0000~0004(0:38400, 1:19200, 2:9600, 3:4800, 4:2400)	R/W
0024	PARI ²	PARI, Range:0000~0003 (0:N81 1:N82 2:EVEN 3:ODD)	R/W
0025	AOSEL	AOSEL, Range: 0000~0005(0:0~5V, 1:1~5V, 2:0~10V 3:2~10V 4:0~20mA 5:4~20mA)	R/W
0026	AOLO	AOLO, Range: FFF0BDC1~000F423F(-999999~999999)high word	R/W
0027		AOLO, Range: FFF0BDC1~000F423F(-999999~999999)low word	R/W
0028	AOHI	AOHI, Range: FFF0BDC1~000F423F(-999999~999999)high word	R/W
0029		AOHI, Range: FFF0BDC1~000F423F(-999999~999999)low word	R/W
002A	AOZERO	AOZERO, Range:D8F1~270F (-9.999%~9.999%)	R/W
002B	AOSPAN	AOSPAN, Range:D8F1~270F (-9.999%~9.999%)	R/W
002C	ALHH	ALHH, Range:FFF0BDC1~000F423F(-999999~999999)high word	R/W
002D		ALHH, Range:FFF0BDC1~000F423F(-999999~999999)low word	R/W

002E	ALHI	ALHI, Range:FFF0BDC1~000F423F(-999999~999999)high word	R/W
002F		ALHI, Range:FFF0BDC1~000F423F(-999999~999999)low word	R/W
0030	ALLO	ALLO, Range:FFF0BDC1~000F423F(-999999~999999)high word	R/W
0031		ALLO, Range:FFF0BDC1~000F423F(-999999~999999)low word	R/W
0032	ALLL	ALLL, Range:FFF0BDC1~000F423F(-999999~999999)high word	R/W
0033		ALLL, Range:FFF0BDC1~000F423F(-999999~999999)low word	R/W
0034	DISP	DISP, Range:FFF0BDC1~000F423F(-999999~999999)high word	R
0035		DISP, Range:FFF0BDC1~000F423F(-999999~999999)low word	R
0036	Reserved		R
0037			R
0038	Reserved		R
0039			R
003A	MAX	MAX, Range:FFF0BDC1~000F423F(-999999~999999)high word	R
003B		MAX, Range:FFF0BDC1~000F423F(-999999~999999)low word	R
003C	MIN	MIN, Range:FFF0BDC1~000F423F(-999999~999999)high word	R
003D		MIN, Range:FFF0BDC1~000F423F(-999999~999999)low word	R
003E	AZ	AZ, Range:FFF0BDC1~000F423F(-999999~999999)high word	R
003F		AZ, Range:FFF0BDC1~000F423F(-999999~999999)low word	R

Note 1: When DEL-P = OFF-D, function disable

Note 2: Will apply immediately when change