6 DIGITAL MICRO-PROCESS COUNTER with 1~4 ALARMS / ANALOG OUTPUT / RS-485

AM6H-C

■ FEATURES

- High brightness 0.56" LED display: -199999~999999
- Max. input frequency: 7KHz (1U2D / 1P2D); 3KHz (1A2B)
- Input pulse for pre-multiplcation & pre-division
- N / R / C relay output mode selectable
- 2~4 alarms output programmable (Hi or Lo) / Analog output (15 bit resolution) / RS-485 communication optional (The above option can exist together)
- Reset / Pause count by external control terminal available
- High stability, non-flammable case (PC), high safety
- CE approval

CE

■ ORDER INFORMATION: AM6H -C - Code 1 - Code 2 - Code 3 - Code 4 Code 5

Code 1	Input Signal	Code 1	Input Signal
N5	NPN(5V)	VC	Pick-up 50mV~1.5V
N2	NPN(12V)	VD	Pick-up 500mV~15V
P5	PNP(5V)	VE	DC 24Vp
P2	PNP(12V)	CT	Contact
		O	Option

Code 2	Aux. Power
A	AC/DC 100~240V
D	AC/DC 22~60V

Code 2	Alarm Output	Code 2	Alarm Output
N	None	O1	1 Open Collect
R1	1 Relay	O2	2 Open Collect
R2	2 Relays	O3	3 Open Collect
R3	3 Relays	O4	4 Open Collect
R4	4 Relays		

Code 4	Analog Output
N	None
A	4~20mA
V	0~10V
O	Option

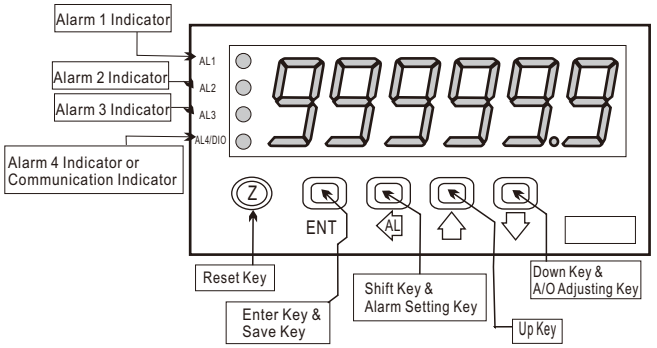
Code 5	RS-485
N	None
Y	Yes

**1: NPN(5V),PNP(5V) offers excitation power DC5V; NPN(12V),PNP(12V) offers excitation power DC12V for sensors using.
2: Please use PNP/NPN(5V/12V) or DC24Vp for DC pulse input.

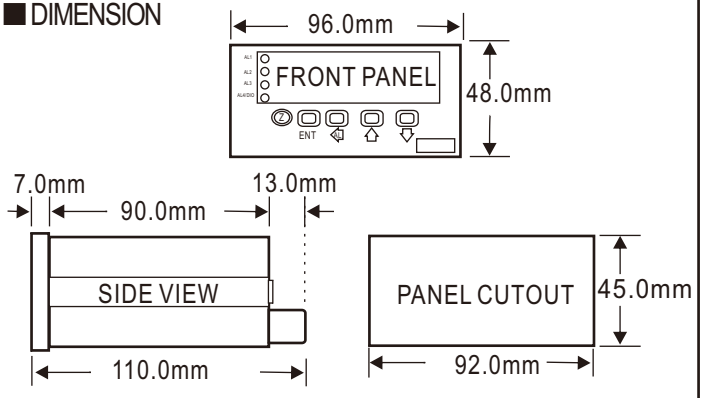
■ SPECIFICATION

- ♦ Display Screen: High brightness 0.56" red LED;
- ♦ Max. Input Frequency: 7KHz (1U2D / 1P2D)
  3KHz (1A2B)
- ♦ Display Range: -199999~999999
- ♦ Parameters Setting: Push buttons
- ♦ Back Up Memory: EEPROM
- ♦ Alarm Action: "≧(Hi) on" or "< (Lo) on"
- ♦ Relay Contact: AC 277V / 7A; DC 30V / 7A
- ♦ Relay Output Mode: N / R / C (depends on1st alarm setpoint)
- ♦ Alarm Run Time: 1~99 sec
- ♦ Analog Output Resolution: 15 bit
- ♦ Output Response Time: <250 msec (0~90%)
- ♦ Output Capability: Voltage Output: <20mA
  Current Output: <10V
- ♦ Communication: RS-485 Modbus RTU mode
- ♦ Baud Rate: 38400 / 19200 / 9600 / 4800 bps
- ♦ Temperature Coefficient: 100ppm / ℃ (0~60℃)
- ♦ Operating Temperature: 0~60℃
- ♦ Operating Humidity: 20~90% RH (non-condensing)
- ♦ Storage Temperature: -10~70℃
- ♦ Storage Humidity: 20~90% RH (non-condensing)
- ♦ Power Supply: AC/DC 100~240V; AC/DC 22~60V
- ♦ Power Consumption: 8.5VA (all functions output)
- ♦ Surge Test: 1.5KVac / 1min (Input / Power)

■ FRONT PANEL & KEY FUNCTIONS

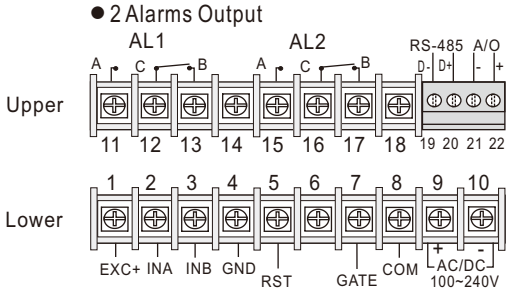


■ DIMENSION

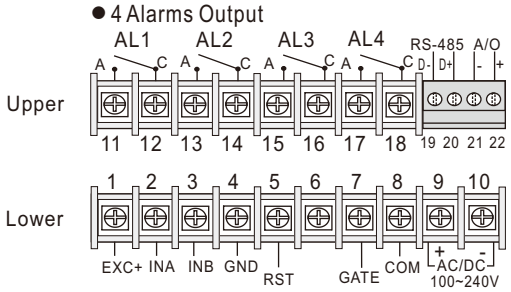


■ WIRING CONNECTION

● 2 Alarms Output



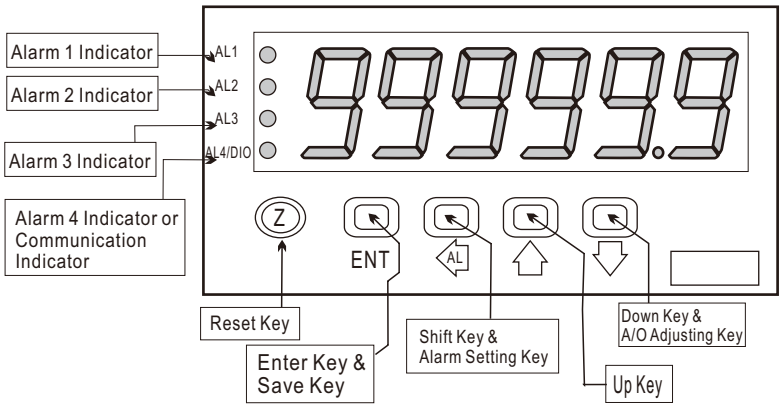
● 4 Alarms Output



AM6H-C 6 DIGITAL MICRO-PROCESS COUNTER with 1~4 ALARMS / ANALOG OUTPUT / RS-485 MANUAL

✻ Please understand key indicators & functions at the first operation.

FRONT PANEL & KEY FUNCTIONS



Key Name	Symbol	Descriptions
Reset Key	Ⓩ	1. Press this key to enable the reset function.
Enter Key & Save Key	ENT	1. In the measuring status, press this key can enter to parameter pages. 2. In the parameter setting, press this key can save the value & go to next parameter.
Shift Key & Alarm Setting Key	◁AL	1. In the measuring status, press this key for 3 sec can enter to alarm setting page (The selecting digit will be flashed) 2. In the parameter setting , press this key can move the cursor left.
Up Key	△	1. In the parameter setting, press this key can increase the digits.
Down Key & A/O Adjusting Key	▽	1. In the measuring status, press this key for 3 sec can enter to analog output adjustment. 2. In the parameter setting , press this key can decrease the digits.

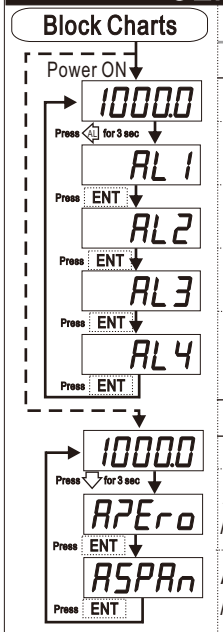
**1. The following block charts are parameters codes, parameter codes & parameters will alternate flashing if the parameters can be modified.

2. To modify the parameters, please press ◁AL △ ▽, and press **ENT** to save the parameter after the modification.

3. Please don't forget the new pass code after modification.

4. In any pages, press △ & ▽, or don't press any keys for 2 minutes that will back to measuring status.

GENERAL MODE OPERATING PROCEDURES



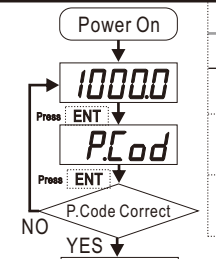
Display	Descriptions	Default
	Alarm Setpoint	
Measuring Status	Present value for measurement	
Alarm 1 Setpoint (AL1)	Press ◁AL △ ▽ to modify alarm 1 setpoint.	00000
Alarm 2 Setpoint (AL2)	Press ◁AL △ ▽ to modify alarm 2 setpoint.	00000
Alarm 3 Setpoint (AL3)	Press ◁AL △ ▽ to modify alarm 3 setpoint.	00000
Alarm 4 Setpoint (AL4)	Press ◁AL △ ▽ to modify alarm 4 setpoint.	00000
	Analog Output: "ZERO" &"SPAN" Adjustment	
Measuring Status	**The following steps are only available for analog output.**	
A/O Zero Adjustment (AZEro)	Press ◁AL to select adjusting speed rate, press △ ▽ to modify the A/O zero. PS: To use this function to adjust the real A/O zero.	00000
A/O Span Adjustment (ASPAn)	Press ◁AL to select adjusting speed rate, press △ ▽ to modify the A/O span. PS: To use this function to adjust the real A/O span.	00000

Remark: 1. There are 4 parameter groups of "System Setting Group(SYS)", "Alarm Setting Group(roP)", "Analog Output Setting Group (AoP)" & "RS485 Setting Group(doP)" for modification.

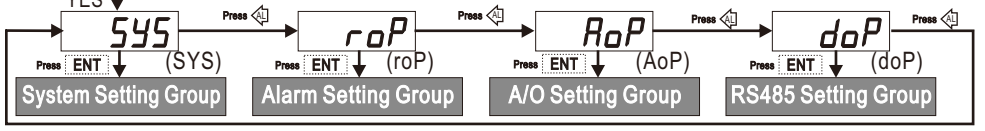
2. Press ◁AL to select each group page, and press **ENT** to enter each group or parameter page for modification or saving the parameters.

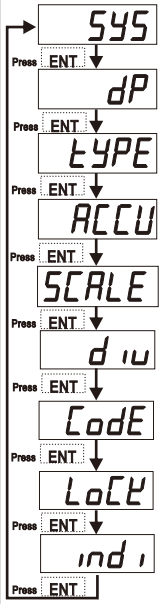
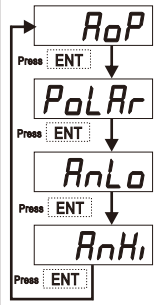
3. Some of optional functions of parameter pages still exist, but the functions are disable.

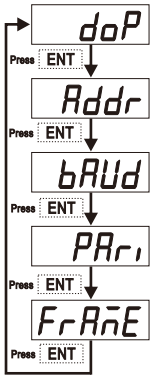
PROGRAMMING MODE OPERATING PROCEDURES



Display	Descriptions	Default
	Parameter Group Setting Procedures	
Measuring Status	Present value for measurement	
Pass Code (P.Cod)	Press ◁AL △ ▽ to enter pass code.	00000
	Pass code is correct that will enter to parameter groups. Pass code is wrong that will back to measuring status.	



	Display	Descriptions	Default
	System Setting Page (SYS)	**System Setting Group Procedures**	
	Decimal Point Setting (dP)	Press ⌂▽ to select decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits.	Customers specify
	Input Type Setting (tYPE)	Press ⌂▽ to modify the input type. (1U2D / 1P2D / 1A2B)	Customers specify
	1A2B Accurate Setting (ACCU)	Press ⌂▽ to modify 1A2B accurate (X1, X4).	Customers specify
	Scale Coefficient Adjustment (SCALE)	Press AL ⌂▽ to modify scale coefficient (0.0001 ~9.9999).	01.0000
	Pre-Division Setting (div)	Press ⌂▽ to modify pre-division (1~999999).	000001
	Pass Code Setting (CodE)	Press AL ⌂▽ to modify pass code (0~19999). PS: Please don't forget the new pass code after modification.	00000
	Key Lock Setting (LoCK)	Press ⌂▽ to lock the keys, using key lock function only can view the parameters, but cannot modify any values. PS: no (unlock) ,YES ("ENT" unlock , others lock).	no
	Indicator 4 Setting (indi)	Press ⌂▽ to modify indicator 4 for AL4 or DIO.	Customers specify
		Alarm Setting Group Procedures	
	Alarm Setting Page (roP)	**The following steps are only available for alarm output.**	
	Alarm 1 (ACt1) / Alarm 2 (ACt2) / Alarm 3 (ACt3) / Alarm 4 (ACt4) — Alarm Action Setting	Press ⌂▽ to modify alarm value that is ≧(Hi) or <(Lo) for alarm action. PS: 1. There are 4 alarms output optional. 2. This page is exist without alarm output, but the function will be disabled. 3. Press **ENT** to save the value and go to the next parameter.	Hi
	Alarm Mode Setting (oP.ModE)	Press ⌂▽ to modify alarm output mode (N, R, C). N: manual; R: return; C: continue	n
	Alarm Run Time Setting (oP.tiME)	Press AL ⌂▽ to modify alarm run time (1~99).	0001
		A/O Setting Group Procedures	
	A/O Setting Page (AoP)	**The following steps are only available for analog output.**	
	A/O Polarity Setting (PoLAr)	Press ⌂▽ to select output for positive or negative pole. PS : Voltage output ,NO: positive pole output (0~+10V) YES: positive & negative pole output (-10~+10V)	no
	A/O Low Scale Setting (AnLo)	Press AL ⌂▽ to adjust A/O low scale to correspond to the display value (programmable). EX : A/O is 0~10V, the display is 10.0 to output 0V, this value must be set for 10.0.	000000
	A/O Hi Scale Setting (AnHi)	Press AL ⌂▽ to adjust A/O hi scale to correspond to the display value (programmable). EX : A/O is 0~10V, the display is 90.0 to output1 0V, this value must be set for 90.0.	999999

	Display	Descriptions	Default
		**RS485 Setting Group Procedures**	
	RS485 Setting Page (doP)	**The following steps are only available for RS-485.**	
	Address Setting (Addr)	Press AL ⌂▽ to modify address (0~255).	00000
	Baud Rate Setting (bAUd)	Press ⌂▽ to select baud rate (38400/19200/9600/4800).	19200
	Parity Setting (PAri)	Press ⌂▽ to select parity (n.8.2/n.8.1/even/odd).	n.8.2
	Frame Setting (FrAmE)	Press ⌂▽ to select frame type. (NO:Hi→Lo , YES:Lo→Hi)	no

Error Code of Self-Diagnosis

Display	Descriptions
E-00	EEPROM reading/writing suffers the interference (about 1 million times).

**Please check the wiring connection is correct first, if the problem still exist, please return the meter to the factory.

**Relay Output Mode Descriptions:

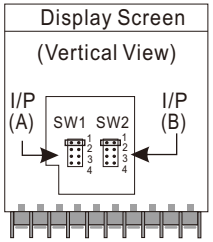
N: (Manual); the relay is on when the present value reaches the alarm setpoint, the present value is still counted and the relay don't deactivate until manual reset by "reset key" or "external control terminal". Then the present value is reset to zero.

R: (Return); the relay is on when the present value reaches the alarm setpoint, the present value is counted until the relay output time is terminated. Then the present value is reset to zero.

C: (Continue); the relay is on when the present value reaches the alarm setpoint, the present value is reset to zero. And the relay is still on until the relay output time is terminated.

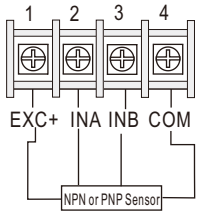
Input Signal Modification

**To Select the pin to modify the input signal for different sensors.
PS: In dual input type, excitation power must be the same.



SW1	JUMPER	DEFINITION
	1	Open: 12V; Close: 5V
	2	Open:10KHz; Close: 400Hz
	3	Open: NPN; Close: PNP
	4	Open: PNP; Close: NPN

**Connection:



NPN (5V): 0~400 Hz

JUMPER	SW1/SW2
1	
2	
3	
4	

NPN (5V): 0~10 KHz

JUMPER	SW1/SW2
1	
2	
3	
4	

NPN (12V): 0~400 Hz

JUMPER	SW1/SW2
1	
2	
3	
4	

NPN (12V): 0~10 KHz

JUMPER	SW1/SW2
1	
2	
3	
4	

PNP (5V): 0~400 Hz

JUMPER	SW1/SW2
1	
2	
3	
4	

PNP (5V): 0~10 KHz

JUMPER	SW1/SW2
1	
2	
3	
4	

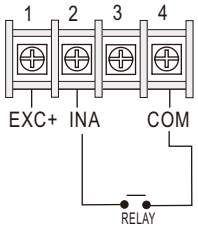
PNP (12V): 0~400 Hz

JUMPER	SW1/SW2
1	
2	
3	
4	

PNP (12V): 0~10 KHz

JUMPER	SW1/SW2
1	
2	
3	
4	

**Connection:



Relay Contact: NPN 0~400 Hz

JUMPER	SW1/SW2
1	
2	
3	
4	

**For relay input type, please select NPN 0~ 400 Hz.

Modbus RTU Mode Protocol Address Table

Data: 16Bit / 32Bit, +/- is 8000~7FFF (-32768~32767), 80000000~7FFFFFFF(-2147483648~2147483647)

Modbus	HEX	Name	Descriptions	Act
40001	0000	ID	Model number identification; AM6H-C is "06"	R
40002	0001	STATUS	Current alarm output & external control input status display; range: 0000~00F0 (0~240) (0:OFF, 1:ON) (Bit7:AL4, Bit6: AL3, Bit5: AL2, Bit4: AL1)	R
40003	0002	POLAR	Analog output polarity setting; range: 0000~0001 (0~1) 0:NO, 1:YES	R/W
40004	0003	LOCK	Key lock setting; range: 0000~0001 (0~1) 0:NO, 1:YES	R/W
40005	0004	FRAME	Frame setting; range 0000~0001(0~1) 0:NO, 1:YES	R/W
40006	0005	INDI	Indicator 4 setting; range 0000~0001(0~1) 0:AL4, 1:DIO	R/W
40007	0006	ACT1	Alarm 1 act setting; range: 0000~0001 (0~1) 0:HI, 1:LO	R/W
40008	0007	ACT2	Alarm 2 act setting; range: 0000~0001 (0~1) 0:HI, 1:LO	R/W
40009	0008	ACT3	Alarm 3 act setting; range: 0000~0001 (0~1) 0:HI, 1:LO	R/W
40010	0009	ACT4	Alarm 4 act setting; range: 0000~0001 (0~1) 0:HI, 1:LO	R/W
40011	000A	TYPE	Input type setting; range: 0000~0002 (0~1) 0:1U2D, 1:1P2D, 2:1A2B	R/W
40012	000B	ACCU	1A2B accurate setting; range 0000~0001(0~1) 0:X1, 1:X4	R/W
40013	000C	DP	Present Value decimal point setting; range: 0000~0005 (0~4) 0:10^{0}, 1:10^{-1}, 2:10^{-2} ~ 5:10^{-5}	R/W
40014	000D	OP.MODE	Count mode setting; range 0000~0002(0~2) 0:N, 1:R, 2:C	R/W
40015	000E	BAUD	Baud rate setting; range: 0000~0003 (0~3) 0:38400, 1:19200, 2:9600, 3:4800	R/W
40016	000F	PARI	Parity setting; range: 0000~0003 (0~3), 0:N.8.2., 1:N.8.1., 2:EVEN, 3:ODD	R/W
40017	0010	ADDR	Address setting; range: 0000~00FF (0~255)	R/W
40018	0011	OP.TIME	Present value relay output time setting; range: 0000~0063 (0~99)	R/W
40019	0012	AZERO	Analog output zero setting; range: D8F1~270F (-9999~9999)	R/W
40020	0013	ASPAN	Analog output span setting; range: D8F1~270F (-9999~9999)	R/W
40021	0014	CODE	Pass code setting; range: 00000000~000F423F (0~99999) Hi Bit	R/W
40022	0015		Pass code setting; range: 00000000~000F423F (0~99999) Low Bit	R/W
40023	0016	DIV	Pre-division setting; range: 00000001~000F423F (1~999999) Hi Bit	R/W
40024	0017		Pre-division setting; range: 00000001~000F423F (1~999999) Low Bit	R/W
40025	0018	SCALE	Total scale setting; range: 00000001~000F423F (1~999999) Hi Bit	R/W
40026	0019		Total scale setting; range: 00000001~000F423F (1~999999) Low Bit	R/W
40027	001A	ANLO	Analog output low scale setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40028	001B		Analog output low scale setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40029	001C	ANHI	Analog output hi scale setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40030	001D		Analog output hi scale setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40031	001E	AL1	Present value alarm 1 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40032	001F		Present value alarm 1 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40033	0020	AL2	Present value alarm 2 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40034	0021		Present value alarm 2 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40035	0022	AL3	Present value alarm 3 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W

Modbus	HEX	Name	Descriptions	Act
40036	0023		Present value alarm 3 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40037	0024	AL4	Present value alarm 4 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40038	0025		Present value alarm 4 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40039	0026	PV	Current present value setting; range: FFFFB1E1~0001869F (-19999~99999) Hi Bit	R/W
40040	0027		Current present value setting; range: FFFFB1E1~0001869F (-19999~99999) Low Bit	R/W