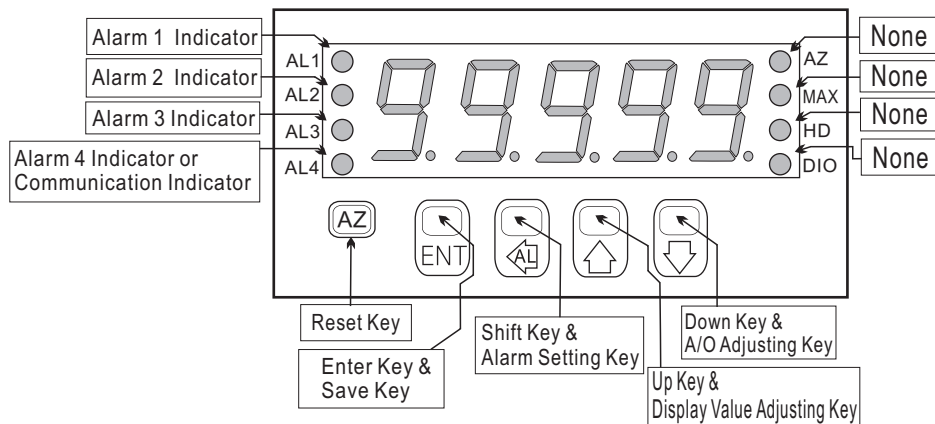


* Please understand key indicators & functions at the first operation.

FRONT PANEL & KEY FUNCTIONS



Key Name	Symbol	Descriptions
Reset Key	⓪	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 $\leftarrow$ $\rightarrow$, 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 $\uparrow$ & $\downarrow$, or don't press any keys for 2 minutes that will back to measuring status.

GENERAL MODE OPERATING PROCEDURES

Block Charts	Display	Descriptions	Default
Alarm Setpoint			
Power ON	10000	Measuring Status	Present value for measurement
Press $\leftarrow$ for 3 sec	AL 1	Alarm 1 Setpoint (AL1)	Press $\leftarrow$ $\rightarrow$ to modify alarm 1 setpoint.
Press ENT	AL 2	Alarm 2 Setpoint (AL2)	Press $\leftarrow$ $\rightarrow$ to modify alarm 2 setpoint.
Press ENT	AL 3	Alarm 3 Setpoint (AL3)	Press $\leftarrow$ $\rightarrow$ to modify alarm 3 setpoint.
Press ENT	AL 4	Alarm 4 Setpoint (AL4)	Press $\leftarrow$ $\rightarrow$ to modify alarm 4 setpoint.
Press ENT			
Analog Output: "ZERO" & "SPAN" Adjustment			
Power ON	10000	Measuring Status	The following steps are only available for analog output.
Press $\leftarrow$ for 3 sec	APEro	A/O Zero Adjustment (AZero)	Press $\leftarrow$ to select adjusting speed rate, press $\uparrow$ $\downarrow$ to modify the A/O zero. PS: To use this function to adjust the real A/O zero.
Press ENT	ASPA n	A/O Span Adjustment (ASPA n)	Press $\leftarrow$ to select adjusting speed rate, press $\uparrow$ $\downarrow$ to modify the A/O span. PS: To use this function to adjust the real A/O span.
Press ENT			

- 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 $\leftarrow$ 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

Block Charts	Display	Descriptions	Default
Parameter Group Setting Procedures			
Power On	10000	Measuring Status	Present value for measurement
Press ENT	PCod	Pass Code (P.Cod)	Press $\leftarrow$ $\rightarrow$ to enter pass code.
Press ENT			
P.Code Correct			Pass code is correct that will enter to parameter groups. Pass code is wrong that will back to measuring status.
NO			
YES	555	System Setting Group (SYS)	
Press ENT	roP	Alarm Setting Group (roP)	
Press ENT	AoP	A/O Setting Group (AoP)	
Press ENT	doP	RS485 Setting Group (doP)	

Display	Descriptions	Default
SYS System Setting Page (SYS)	System Setting Group Procedures	
dPK Press ENT → KF Press ENT → Unit Press ENT → dP Press ENT → CodE Press ENT → LoCK Press ENT → indi Press ENT	K Factor Decimal Point Setting (dPK) Press $\uparrow \downarrow$ to select K factor decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits. K Factor Setting (KF) Press $\leftarrow \uparrow \downarrow \rightarrow$ to modify K factor (0 ~ 99999) Flow Unit Setting (Unit) Press $\uparrow \downarrow$ to modify the unit (Liter, Gal, C.C., m³) Decimal Point Setting (dP) Press $\uparrow \downarrow$ to select decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits. Pass Code Setting (CodE) Press $\leftarrow \uparrow \downarrow \rightarrow$ to modify pass code (0~19999). PS: Please don't forget the new pass code after modification. Key Lock Setting (LoCK) Press $\uparrow \downarrow$ 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). Indicator 4 Setting (indi) Press $\uparrow \downarrow$ to modify indicator 4 for AL4 or DIO.	00000 1000 L, tEr Customers specify 00000 no Customers specify
Alarm Setting Group Procedures		
roP Press ENT → Act1 Act2 Act3 Act4 Press ENT → oP.modE Press ENT → oP.tiME Press ENT	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 $\uparrow \downarrow$ to modify alarm value that is $\geq$ (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. Alarm Mode Setting (oP.ModE) Press $\uparrow \downarrow$ to modify alarm output mode (N, R, C). N: manual; R: return; C: continue Alarm Run Time Setting (oP.tiME) Press $\leftarrow \uparrow \downarrow \rightarrow$ to modify alarm run time (1~99).	Hi n 0000
A/O Setting Group Procedures		
RoP Press ENT → PoLAr Press ENT → AnLo Press ENT → AnHi Press ENT	A/O Setting Page (AoP) The following steps are only available for analog output. A/O Polarity Setting (PoLAr) Press $\uparrow \downarrow$ to select output for positive or negative pole. PS: Voltage output, NO: positive pole output (0~+10V) YES: positive & negative pole output (-10~+10V) A/O Low Scale Setting (AnLo) Press $\leftarrow \uparrow \downarrow \rightarrow$ 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. A/O Hi Scale Setting (AnHi) Press $\leftarrow \uparrow \downarrow \rightarrow$ 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 output 1 0V, this value must be set for 90.0.	no 000000 999999

Display	Descriptions	Default
doP Press ENT → Addr Press ENT → bAUd Press ENT → PARi Press ENT → FrAnE Press ENT	RS485 Setting Page (doP) The following steps are only available for RS-485. Address Setting (Addr) Press $\leftarrow \uparrow \downarrow \rightarrow$ to modify address (0~255). Baud Rate Setting (bAUd) Press $\uparrow \downarrow$ to select baud rate (38400/19200/9600/4800). Parity Setting (PARi) Press $\uparrow \downarrow$ to select parity (n.8.2/n.8.1/even/odd). Frame Setting (FrAnE) Press $\uparrow \downarrow$ to select frame type. (NO:Hi→Lo, YES:Lo→Hi)	00000 19200 n8.2 no

Error Code of Self-Diagnosis

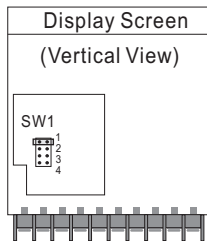
Display	Descriptions
E-00	EEPROM reading/writing suffers the interference (about 1 million times).
**Please check the wiring connection is correct first, if the problem still exist, please return the meter to the factory.	

**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.

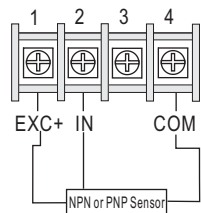
Input Signal Modification

****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: 100KHz; Close: 100Hz
• •	3	Open: NPN; Close: PNP
• •	4	Open: PNP; Close: NPN

****Connection:**



NPN (5V): 0~100 Hz

JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

NPN (5V): 0~100 KHz

JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

NPN (12V): 0~100 Hz

JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

NPN (12V): 0~100 KHz

JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

PNP (5V): 0~100 Hz

JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

PNP (5V): 0~100 KHz

JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

PNP (12V): 0~100 Hz

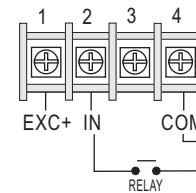
JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

PNP (12V): 0~100 KHz

JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

****Connection:**

Relay Contact: NPN 0~100 Hz



JUMPER	SW1/SW2
1	• •
2	• •
3	• •
4	• •

****For relay input type, please select NPN 0~ 100 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; CFM-C is "13"	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	UNIT	Flow unit setting; range: 0000~0002 (0~2) 0:Liter, 1:c.c., 2:m ³	R/W
40012	000B	DPK	K value decimal point setting; range: 0000~0005 (0~5) 0:10 ⁰ , 1:10 ⁻¹ ,... 5: 10 ⁻⁵	R/W
40013	000C	PVDP	Present Value decimal point setting; range: 0000~0005 (0~4) 0:10 ⁰ , 1:10 ⁻¹ ,... 5:10 ⁻⁵	R/W
40014	000D	PVOPM	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	PVOPT	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	KF	KF Value setting; range: 00000001~000F423F (1~999999) Hi Bit	R/W
40024	0017		KF Value setting; range: 00000001~000F423F (1~999999) Low Bit	R/W
40025	0018	ANLO	Analog output low scale setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40026	0019		Analog output low scale setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40027	001A	ANHI	Analog output hi scale setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40028	001B		Analog output hi scale setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40029	001C	PVAL1	Present value alarm 1 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40030	001D		Present value alarm 1 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40031	001E	PVAL2	Present value alarm 2 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40032	001F		Present value alarm 2 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40033	0020	PVAL3	Present value alarm 3 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W
40034	0021		Present value alarm 3 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Low Bit	R/W
40035	0022	PVAL4	Present value alarm 4 setpoint setting; range: FFFCF2C1~000F423F (-199999~999999) Hi Bit	R/W

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