

5 DIGITAL MICRO-PROCESS FLOW METER (24x48mm) with 1 ALRAM

KFS-A

FEATURES

- Accuracy: $\pm 0.05\%$ F.S. ± 1 digit
- High brightness 0.4" LED display range: -19999~99999; decimal point selectable
- Reset (External terminal) and 1 alarm setting (Hi or Lo) programmable
- High stability, non-flammable case (PC), high safety
- CE approval



ORDER INFORMATION: KFS-A-Code 1-Code 2-Code 3-Code 4

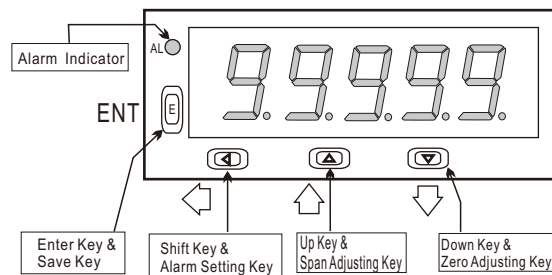
Code 1	Input Type	Code 2	Input Signal	Code 3	Aux. Power	Code 4	Alarm Output
D	DC	A6	4~20mA	A	AC/DC 100~240V	N	None
2	2, 3 Wire Sensor	V3	1~5V	D	AC/DC 22V~60V	R1	1 Relay
4	4 Wire Sensor	V4	0~10V				
		O	Option				

**1: 2 wire type offers excitation power DC24V for 2 wire (Loop Power) flow sensors using.
2: 3 Relay type only offers A(NormalOpen) output. O.C. (Open Collect) offers NPN of C.E. output.

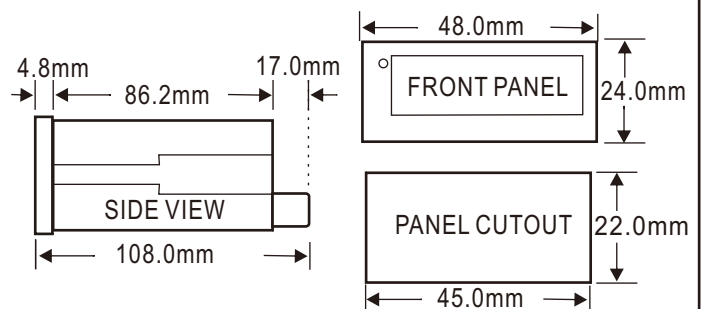
SPECIFICATION

- ◆ Accuracy: $\pm 0.05\%$ F.S. ± 1 digit
- ◆ Display Screen: High brightness red LED; 10.16mm(0.4")
- ◆ Sampling Time: 16 cycles / sec
- ◆ Display Rang: -19999~99999
- ◆ Zero Adjustment: -19999~99999
- ◆ Over Range Indication: doFL / ioFL or -doFL / -ioFL
- ◆ Polarity Indication: Automatic with "-" indication
- ◆ Parameters Setting: Push buttons
- ◆ Back Up Memory: EEPROM
- ◆ Alarm Action: " \geq (Hi) on" or "< (Lo) on"
- ◆ Alarm Run Delay Time: 0~99 sec
- ◆ Relay Contact: AC 277V / 7A; DC 30V / 7A
- ◆ Temperature Coefficient: 100ppm / $^{\circ}\text{C}$ (0~60 $^{\circ}\text{C}$)
- ◆ Operating Temperature: 0~60 $^{\circ}\text{C}$
- ◆ Operating Humidity: 20~90% RH (non-condensing)
- ◆ Storage Temperature: -10~70 $^{\circ}\text{C}$
- ◆ Storage Humidity: 20~90% RH (non-condensing)
- ◆ Power Supply: AC/DC 100~240V; AC/DC 22~60V
- ◆ Power Consumption: 4.5VA
- ◆ Surge Test: 2KVac / 1min (Input / Power)
- ◆ Input Impedence: Voltage: $> 2\text{V}$ for 20K Ω / V; $\leq 2\text{V}$ for $> 200\text{M}\Omega$
Current: $\geq 0.2\text{A}$ at 100mV; $\leq 0.2\text{A}$ at 1V

FRONT PANEL & KEY FUNCTIONS

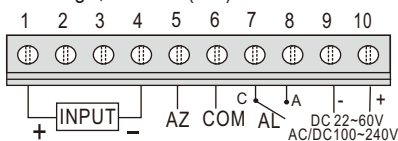


DIMENSION

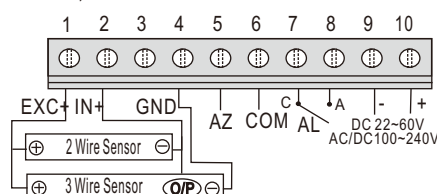


WIRING CONNECTION

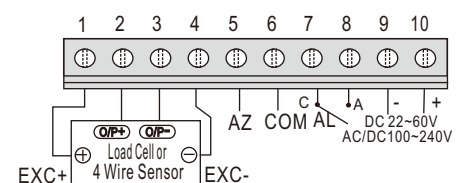
● Voltage, Current (DC)



● 2,3 Wire Sensor

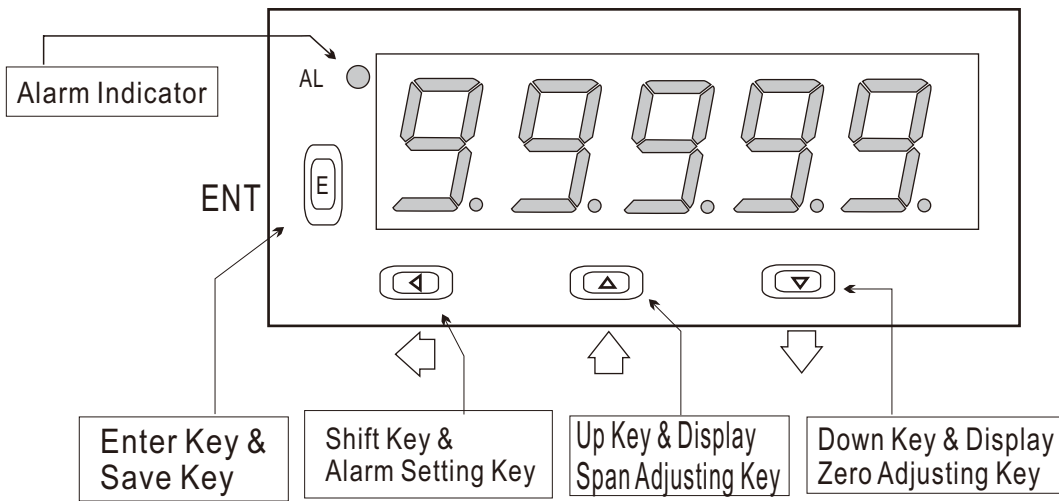


● 4 Wire Sensor



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

FRONT PANEL & KEY FUNCTIONS



Key Name	Symbol	Descriptions
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	←	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 & Display Span Adjusting Key	↑	1. In the measuring status, press this key for 3 sec can enter to display value adjustment of "SPAN" 2. In the parameter setting, press this key can increase the digits.
Down Key & Display Zero Adjusting Key	↓	1. In the measuring status, press this key for 3 sec can enter to display value adjustment of "ZERO" 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 ← ↑ ↓, and press ENT to save the parameters 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

Block Charts	Display	Descriptions	Default
Power On		Alarm Setpoint	
	Measuring Status	Present value for measurement.	
	Alarm (AL) Setpoint	Press ← ↑ ↓ to modify the alarm setpoint.	00000
		Display: SPAN Adjustment	
	Measuring Status	Present value for measurement.	
	Display Span Adjustment (dSPAN)	Press ← to select adjusting speed rate, press ↑ ↓ to modify the span value. PS: To use this function to adjust the real span value.	00000
		Display: ZERO Adjustment	
	Measuring Status	Present value for measurement.	
	Display Zero Adjustment (dZEro)	Press ← to select adjusting speed rate, press ↑ ↓ to modify the zero value. PS: To use this function to adjust the real zero value.	00000

ENGINEER LEVEL OPERATING PROCEDURES

Block Charts	Display	Descriptions	Default	
	10000	Measuring Status Present value for measurement		
	P.Cod	Pass Code (P.Cod) Press $\leftarrow \uparrow \downarrow$ to enter pass code.	00000	
	P.Code Correct	Pass code is correct that will enter to parameter groups. Pass code is wrong that will back to measuring status.		
	SYS	System Setting Page (SYS) Press \leftarrow to select system setting group (SYS) or alarm setting group (roP). PS: This function is only available for Alarm output.		
	dP	Decimal Point Setting (dP) Press $\leftarrow \uparrow \downarrow$ to select decimal point (0, 1, 2, 3, 4) EX: if the value shows "0.00" that means the decimal point is 2 digits.	Customers specify	
	dSPL	Display Low Scale Setting (dSPL) Press $\leftarrow \uparrow \downarrow$ to modify display low scale for the input signal zero value. EX: If the input signal is 4~20mA; 4mA is shown display 0.00, this parameter must be set for 000.00.	Customers specify	
	dSPH	Display Hi Scale Setting (dSPH) Press $\leftarrow \uparrow \downarrow$ to modify display high scale for the input signal span value. EX: If the input signal is 4~20mA; 20mA is shown display 100.00, this parameter must be set for 100.00.	Customers specify	
	AvG	Display Average Setting (AvG) Press $\leftarrow \uparrow \downarrow$ to modify display average (1~99) PS: Please use this function for stable display value when input signal is unstable.	00005	
	LCUt	Display Low Cut Setting (LCUt) Press $\leftarrow \uparrow \downarrow$ to modify display low cut to 0(0~99)	00000	
	CodE	Pass Code Setting (CodE) Press $\leftarrow \uparrow \downarrow$ to modify pass code(0~19999) PS: Please don't forget the new pass code after modification.	00000	
	di	Control DI Setting (di) Press $\uparrow \downarrow$ to select control DI off (YES) or on (NO). PS: Control DI (Z, MAX, HD) & (COM) shorts, the functions starts.	no	
	LoCK	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)	no	
	Alarm Setting Group Procedures			
	roP	Alarm Setting Page (roP) The following steps are only available for alarm output.		
ACt	Alarm Action Setting (ACt) Press $\uparrow \downarrow$ to modify alarm value that is \geq (Hi) or $<$ (Lo) for alarm action.	Customers specify		
HYS	Alarm Hysteresis Setting (HYS) Press $\leftarrow \uparrow \downarrow$ to modify the value, when alarm runs lower or higher display value (depends on alarm action) Alarm setpoint \pm this value(0~999) will turn off the alarm.	00000		
dEL	Alarm Run Delay Setting (dEL) Press $\leftarrow \uparrow \downarrow$ to modify the value, when the display value reach the alarm value that need to wait for this time (0~99 sec) for alarm action.	00000		
Sb	Alarm Start Band Setting (Sb) Press $\leftarrow \uparrow \downarrow$ to modify the value (-99~+99), if the display value don't over this range; the alarm will not be act.	00000		
Sdt	Alarm Start Band Time Setting (Sdt) Press $\leftarrow \uparrow \downarrow$ to modify the value (0~99 sec), if the display value reach alarm start band value; the alarm will be act after this value (sec). (The function is used with "Sb" function.)	00000		

Error Code of Self-Diagnosis

Display	Descriptions	Display	Descriptions
1, oFL	Input signal is over 120% of input range.	doFL	Input signal is over display range (99999)
-1, oFL	Input signal is under -20% of input range.	-doFL	Input signal is under display range (-19999)
AdEr	Input signal is over 180% of input range or meter error.	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.

CALIBRATION OPERATING PROCEDURES

	Display	Descriptions	Default
<p>The flowchart shows the sequence of calibration steps. It starts with a display of '10000' (Measuring Status). Pressing 'ENT' and a left arrow together for 3 seconds leads to 'inLo' (Input Low Scale Calibration). Pressing 'ENT' leads to 'inHi' (Input Hi Scale Calibration). Pressing 'ENT' leads to '545' (System Setting Page). Pressing a right arrow and a down arrow together for 3 seconds returns to the 'Measuring Status'.</p>	Measuring Status	Present value for measurement Press ENT & together for 3 sec will enter to calibration operating procedures.	
	Input Low Scale Calibration (inLo)	1. Input standard low scale signal. 2. Press & to calibrate input low scale.	
	Input Hi Scale Calibration (inHi)	1. Input standard hi scale signal. 2. Press & to calibrate input hi scale.	
	System Setting Page (SYS)	1. Finish calibration operating procedures will enter to system setting group. 2. Press & together to back to measuring status.	

Warning: Calibration of this meter requires a standard signal with 0.01% accuracy or better and an external meter with 0.005% accuracy or better.