

## Digital Flow Sensor



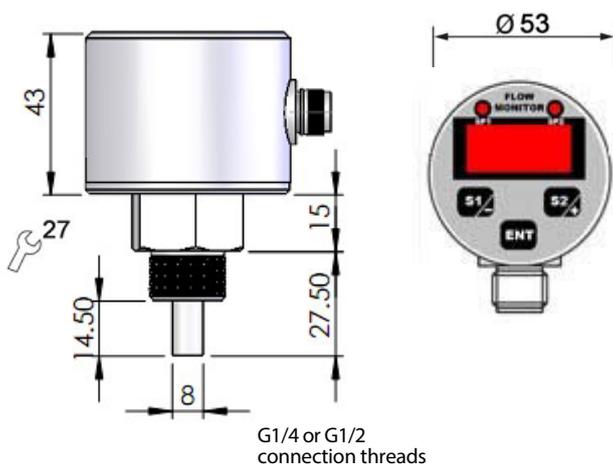
### Specifications

Heat transfer temperature difference technology is the company's great contribution in the field of fluid control, successfully solved the problem of instantaneous detection of flow that plagued the engineering world. Its advanced technical means, as well as advanced production process has contributed to the image of international first-class quality. Typical features are as follows:

1. There are no moving parts, so compared with mechanical flow switches it will not malfunction due to corrosion, breakage, baffle deformation, etc.;
2. Suitable for flow monitoring of different media, including some impure liquid and gas media;
3. Plug-in installation method, meet the installation requirements of a variety of pipe diameters;
4. Wide range of flow detection, high precision, can meet the customer's requirements for the control of different flow rates of fluids;
5. Digital display of the state of the media flow;
6. Push button to set parameters, easy to operate;
7. The combination of long service life and maintenance-free design gives your equipment a huge competitive advantage.

The many advantages of our products have been fully utilized in industrial furnaces, welding equipment, laser equipment, microwave equipment, glass machinery, lubrication machinery, printing machinery, machine tools, and large transformers.

### Product Dimension Drawing



### Working Principle

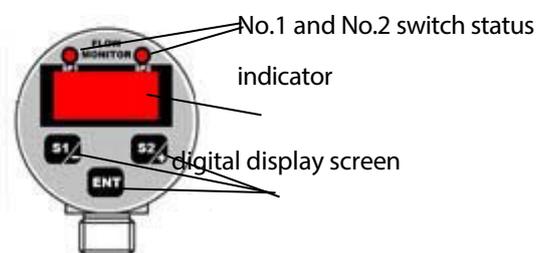
The principle of heat transfer temperature difference is not complicated, it is the use of heat propagation diffusion properties, the high temperature region to the low temperature region to transfer heat. Applied to flow detection, the value of the temperature difference in the performance area corresponds to the size of the flow.

The working principle of the heat transfer temperature difference, in the closed probe placed inside the heat module and the temperature sensing module, the probe's heat transfer temperature difference is closely related to the measured medium flow rate, when the medium in the pipeline to a stable flow rate of flow, the sensing module receives the heat module sensing is a fixed value. When the flow rate of flow through the probe changes, the heat-sensing module will be transmitted with the change of the temperature difference signal, after the processor will correspond to the flow rate of the results output.

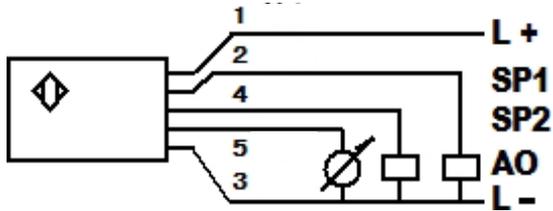
### Technical Parameters

Basic parameters		
medium		Liquids, gases
monitoring function	warning indication	LED (red)
	signal output	Relay, PNP, Analog 4...20mA
	Maximum load	Relay <1A; PNP <150mA; Analog <500Ω
temperature range	medium	-20 °C... +80 °C
	matrix	-20 °C... +80 °C
Electrical parameters		
operating voltage		DC 24 V (18... 32 V)
No-load current		<80 mA
status indicator		4-digit, 7-segment LED indicator
protection class		IP67 (when plugged in)
connectors		M12 plug-in connection, 5-pole
Flow Monitoring		
Range	Water	1...150 cm/s
	Oil	3...300 cm/s
	Gas	30...3000 cm/s
Repeatability		±2 %
Initialization time		approx. 18s
Mechanical parameters		
pressure resistance		100 bar
material (that sth is made of)	housings	stainless steel
	extend one's head (out or into)	stainless steel
weights		approx. 0.4kg

### Panel Introduction



## wiring diagram



## Key Function

keystrokes	Function
	In the working state, view the SP1 action setting value; in the menu mode, switch down the menu item; in the parameter modification mode, cycle left to move the modified bit.
	In the working state, view the SP2 action setting value; in the menu mode, switch the menu item upward; in the parameter modification mode, modify the value of the blinking bit.
	Under the working condition, press and hold for about 3 seconds to enter the parameter setting menu; in the menu mode, view and modify the current menu item to check the parameter value.

## Combined key functions

key combination	Function
<b>S1</b> + <b>ENT</b>	The lower limit setting key combination provides the system with the lower limit value of the flow monitoring range. Setting process: When a medium flows through the sensor at a stable lower limit flow rate, press and hold this key combination at the same time, and hold it for about 3 seconds to complete the setting of the lower limit value, and display "CA-O" at the same time.
<b>S2</b> + <b>ENT</b>	The upper limit setting key combination provides the upper limit value of the flow monitoring range for the system. Setting process: When a medium flows through the sensor at a stable upper limit flow rate, press and hold this key combination at the same time, and hold it for about 3 seconds to complete the setting of the upper limit value, and "CA-F" is displayed at the same time.

## Mounting

The probe of the monitor must be in full contact with the measured medium. (Figure .1)

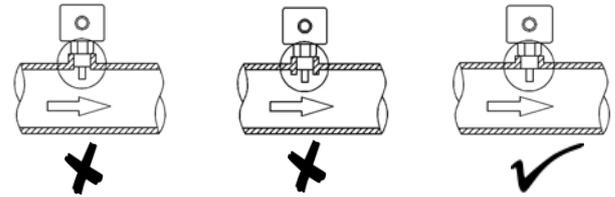


Figure .1

When horizontal piping, consider side mounting whenever possible. (Fig.2)

- When installed at the upper end of a horizontal pipe, ensure that the medium is full to prevent the probe from contacting only the air and not the medium.
- When installed at the lower end of a horizontal pipe, ensure that the bottom of the pipe is free of sediment so that the probe is not covered by sediment and cannot make full contact with the probe.

When installed vertically, it should be installed on a pipe section that flows from bottom to top. (Figure.3).

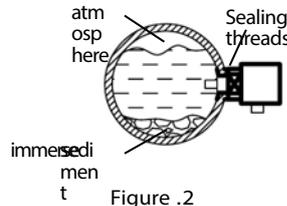


Figure .2

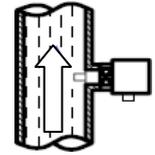


Figure .3

When installing with bends and intersections, the installation distance before and after should be considered (Fig.4)

- Front is 5 times the pipe diameter distance.
- The back side is 3 times the pipe diameter distance.

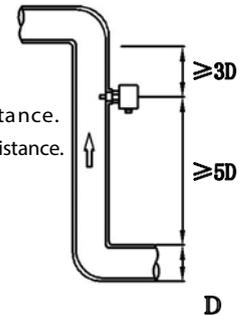


Figure .4

## Menu

Menu Name	Function	Parameter selection range
SP1	No. 1 switch action value	2%...100%FS
hS1	No. 1 switch reset value	0%...98%FS
oUt1	No. 1 switch output type	nO/nC
SP2	No. 2 switch action value	2%...100%FS
hS2	No. 2 switch reset value	0%...98%FS
oUt2	Type of switch output No. 2	nO/nC
FAC	Display of numerical coefficients	0.1...99.9
CAL	calibration parameters	0...9999
END	exit menu	-



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