

## YF-S401 flow sensor Technical Documents

### Product Features:

1. The appearance of the product compact structure and small size, easy installation.
2. Impeller lined with stainless steel beads, never wear.
3. seal with the structure under the force never leaks.
4. Hall components imported from Germany, and with potting package, Prevent water, never aging.
5. All the raw materials are in line with ROHS testing standards



### A、 Introduction:

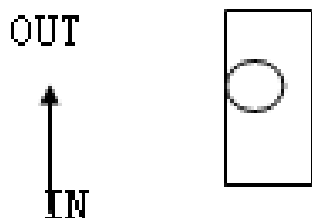
Water flow sensor consists of a plastic body, the flow of the rotor assembly and a Hall sensor.

It is installed in the water heater inlet end for detecting the flow of water when the water flow through the rotor assembly,

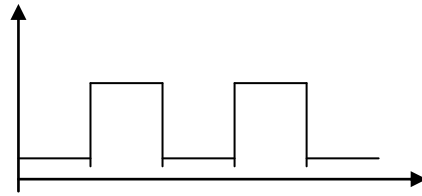
A magnetic rotor and the flow speed is adapted to change, the Hall sensor output corresponding pulse

Signal feedback to the controller, the controller is determined by the size of the water traffic regulation.

### B、 A schematic view of the mounting direction

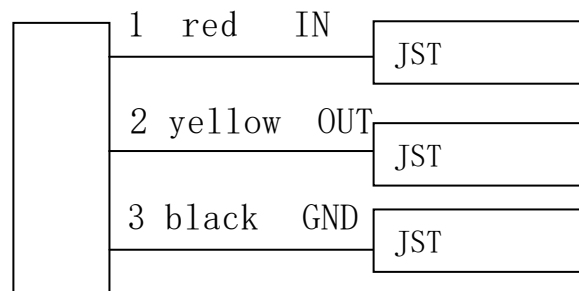


### C、 Output waveforms:



Duty Cy=40%~60%

### D、 Wiring:



### E、 Technical Parameters:

Scope: Suitable for automatic gas water heater

#### Basic parameters

- 1, the lowest rated working voltage DC3.5V-24V
- 2, the maximum operating current of 15 mA (DC 5V)
- 3, the working voltage range DC 5 ~ 18 V
- 4, load capacity  $\leq 10$  mA (DC 5V)
- 5, temperature range  $\leq 80$  °C
- 6, Operating humidity 35% ~ 90% RH (no condensation state)
- 7, allowing hydraulic pressure 1.75Mpa the following
8. Storage Temperature  $-25 \sim + 80$  °C
- 9, storage humidity 25% ~ 95% RH

skills requirement

- 1, the output pulse high > DC 4.5 V (input voltage DC 5 V)
- 2, the output pulse is low < DC 0.5 V (input voltage DC 5 V)
- 3, precision  
(Flow rate - pulse output)  $0.3 \sim 6 \text{ L / min} \pm 3\%$
- 4, the output pulse duty cycle of  $50 \pm 10\%$
- 5, the output rise time  $0.04 \mu\text{s}$
- 6, the output fall time  $0.18 \mu\text{s}$
- 7, flow - pulse characteristics proficiency test pulse frequency (Hz) =  $[98 * Q] \pm 3\%$  (proficiency testing) (Q is flow rate L / min)
- 8, impact-resistant product packaging, from a height of 50cm X, Y, Z direction of the free fall to the concrete surface, without exception, Variation within 5% accuracy.
- 9, insulation resistance and the Hall sensor insulation resistance  $100 \text{ M}\Omega$  or more between the copper body. (DC 500V)
- 10, the heat resistance is placed 48h at  $80 \pm 3 \text{ }^\circ\text{C}$  environment, return to room temperature 1-2h without exception, and parts free of cracks, relaxation, expansion or deformation, changes within 10% accuracy.
- 11, placed in the cold environment of  $-20 \pm 3 \text{ }^\circ\text{C}$  48h, return to room temperature 1-2h without exception, and parts free of cracks, relaxation, expansion or deformation, changes within 10% accuracy.
- 12, moisture resistance at  $40 \pm 2 \text{ }^\circ\text{C}$ , relative humidity  $90\% \sim 95\% \text{ RH}$  environment placed 72h after removing the insulation resistance  $1 \text{ M}\Omega$  or more.
- 13, pull-out strength is applied to one minute 10N tension on the lead, no loose, pull off phenomenon, and no change in performance.
- 14, durability at room temperature, from the inlet through the 0.1MPa pressure to turn 1S, 0.5S off a cycle, Test 300,000 times without exception.

Flow quantity	Pulse impact	Poor miss	The minimum value	The maximum
2	196	$\pm 1.020$	192	200
2.1	153.3	$\pm 1.021$	201.6	210
2.2	160.6	$\pm 1.022$	211.2	220
2.3	167.9	$\pm 1.023$	220.8	230
2.4	175.2	$\pm 1.024$	230.4	240
2.5	182.5	$\pm 1.025$	240	250
2.6	189.8	$\pm 1.026$	249.6	260

2.7	197.1	$\pm 1.027$	259.2	270
2.8	204.4	$\pm 1.028$	268.8	280
2.9	211.7	$\pm 1.029$	278.4	290
3	219	$\pm 1.030$	288	300
3.1	226.3	$\pm 1.031$	297.6	310
3.2	233.6	$\pm 1.032$	307.2	320
3.3	240.9	$\pm 1.033$	316.8	330
3.4	248.2	$\pm 1.034$	326.4	340
3.5	255.5	$\pm 1.035$	336	350
3.6	262.8	$\pm 1.036$	345.6	360
3.7	270.1	$\pm 1.037$	355.2	370
3.8	277.4	$\pm 1.038$	364.8	380
3.9	284.7	$\pm 1.039$	374.4	390
4	292	$\pm 1.040$	384	400
4.1	299.3	$\pm 1.041$	393.6	410
4.2	306.6	$\pm 1.042$	403.2	420
4.3	313.9	$\pm 1.043$	412.8	430
4.4	321.2	$\pm 1.044$	422.4	440
4.5	328.5	$\pm 1.045$	432	450
4.6	335.8	$\pm 1.046$	441.6	460
4.7	343.1	$\pm 1.047$	451.2	470
4.8	350.4	$\pm 1.048$	460.8	480
4.9	357.7	$\pm 1.049$	470.4	490
5	365	$\pm 1.050$	480	500