

DESCRIPTION

FSP - Paddle Wheel Flow Sensor, Using SUS and corrosion-resistant materials and design oxidation resistance, good stability and high resolution built-magnet rotor, NPN pulse square wave can be connected directly to the PLC / IPC, the product is easy to maintain, easy to operate.



FEATURE

- Waterproof and dustproof protection class IP68
- Measuring flow rate 0.3 ~ 6.0m / s

APPLICATION

Water Treatment Industry & Drinking water industry
 Chemical manufacturing transport process UF / RO equipment made
 Heat exchange and cooling water system pool circulation system.
 Water for irrigation and water distribution measurement



ORDERING INFORMATION

FSP		AUX. POWER	Main material	O Ring	Sensor Size	Plunger for Cap	Connection		
CODE	AUX. POWER	CODE	Main material	CODE	O Ring material	CODE	Plunger for Cap	CODE	Connection
A	5~24Vdc	C	CPVC	E	EPDM Synthetic rubber (Standard)	N	Plastic	010	Option:10~150M (010~150)
		P	PTFE	V	Viton Fluorine Rubber	Y	Stainless steel	M12	M12/4PIN Connector
		S	SUS316L	Under acid & weathering environment recommended Viton fluorine rubber		When fluid temperature is higher than 80 °C, or pressure is greater than 6 bar, please use stainless steel cap		TBP	Plastic junction box
								TBA	Aluminum junction box
								TBS	SUS316 junction box

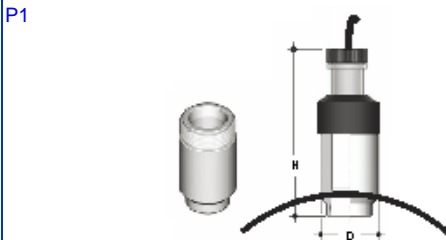
SELECTION MOUNT SPECIFICATIONS (Optional extra valuation)

Short pipe welding (P1)

Material / Code Unit:mm

SUS316	CS	PVC	PP	CPVC	PVDF
SW-	BW-	VW-	PW-	CW-	DW-
SIZE	Code	Sensor Size	H	D	
2"~8"	020~080	-S (127mm)	127	43	
10"~16"	100~160	-L (185mm)	185	43	

EX: Chose PVC Material, SIZE "2": **Code:VW-020-S**



Plastic tee (P3)

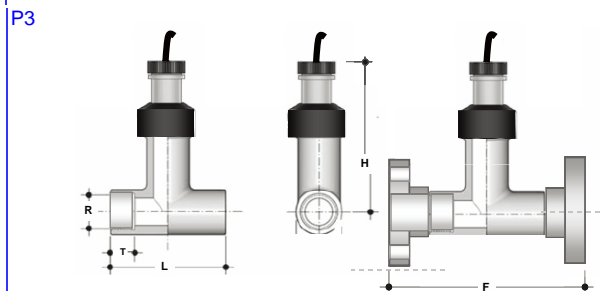
Material / Code (Intubation socket) Unit:mm

PVC		CPVC		PVC Flanged		CPVC Flanged	
VS-		CS-		VF(J/A)-		CF(J/A)-	
SIZE	Code	Sensor	R	T	L	H	F
1/2"	004	-S	21.54	30.58	112.0	130.5	162.2
3/4"	006	-S	26.87	30.58	112.0	130.5	170.2
1"	010	-S	33.66	30.58	96.0	130.5	159.6
1-1/4"	012	-S	42.42	34.75	115.5	131.2	185.7
1-1/2"	015	-S	48.56	37.93	128.0	134.5	204.2
2"	020	-S	60.63	41.10	145.5	136.0	228.3
2-1/2"	025	-S	73.38	47.45	171.0	138.2	266.4
3"	030	-S	89.31	50.63	196.0	147.2	297.8
4"	040	-S	114.76	60.15	237.5	164.3	359.7

EX: Chose (1)CPVC, Intubation socket, SIZE "1" **Code: CS-010-S**

(2)PVC, ANSI Flanged Coupler, SIZE "3" **Code: VFA-030-S**

Flange Specification: FJ:JIS 10K & FA: ANSI 150#, Please choose the code when ordering, Insertion port size (R) according to standard ASTM SCH80

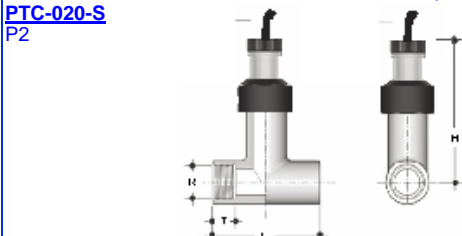


Metal tee (P2)

Material / Code (Ends Female Thread) Unit:mm

SUS316		SUS316		CS		CS	
PTS-		NTS-		PTC-		NTC-	
SIZE	Code	Sensor Size	R	T	L	H	
1/2"	004	-S	1/2"	19	120	127.3	
3/4"	006	-S	3/4"	19	120	129.9	
1"	010	-S	1"	22.5	120	132.7	
1-1/4"	012	-S	1-1/4"	22.5	120	135.9	
1-1/2"	015	-S	1-1/2"	25	130	138.0	
2"	020	-S	2"	25	150	142.4	

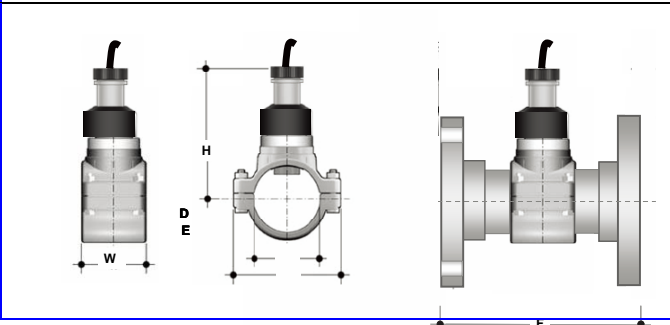
EX: Chose CS Ends Female Thread PT Material, SIZE "2": **Code: PTC-020-S**



■ Plastic Saddle / flange (P4) (Metallic material, please call us)
Material / Code Unit:mm

PP Plastic Saddle#2			PVC flange#3				
PS(V/C/D)-			PF(J/A)-				
SIZE	Code	Sensor Size	D	E	W	H	F
2"	020	-S	63.0	101.0	67.0	136.0	170.0
2-1/2"	025	-S	75.0	116.0	77.0	138.2	190.0
3"	030	-S	90.0	132.0	87.0	147.2	190.0
4"	040	-S	110.0	172.0	101.0	164.3	210.0
5" #1	050	-L	-	-	-	172.0	250.0
6"	060	-L	160.0	237.0	202.0	202.1	300.0
8"	080	-L	225.0	333.0	230.8	230.8	300.0
10" #1	100	-L	-	-	-	254.0	330.0
12" #1	120	-L	-	-	-	273.0	380.0

#1: Short tube produced by welding plus an additional the flange
#2: Plastic Saddle: PVC(Code:PSV) / CPVC(Code:PSC) / PVDF(Code:PSD)
#3: flange: FJ:JIS 10K & FA: ANSI 150#, Please choose the code when ordering:
EX: Chose (1): PVDF Plastic Saddle, SIZE 6": Code: PSD-060-L
(2): JIS flange, SIZE 12": Code: PFJ-120-L



■ TECHNICAL SPECIFICATION

Accuracy: ±0.5% F.S. (K Calibrated) @ flow ≥0.5m/s
Reproducibility: ±0.5% F.S.
Working pressure: ≤10bar (PVC/CPVC), @ 20°C of water
≤16bar (CS/SUS), @ 20°C of water
Pressure loss: <0.1Mpa
Medium Temp.: CPVC - Max. 85°C
PTFE & SUS316L - Max.100°C
Flow rate range: 0.3~6.0 m/s
Measurement type: Hall effect devices, two-way measure
Output signal: NPN Square wave · 5~24Vp
Length: 3 core wire isolation AWG #22,PVC 10M(Stander)~150M(Option)
Power Supply: <10 μ A @ DC 5~24V Works with PLC/IPC;

Working environment

Operating Temp.: 0~50 °C
Relative humidity: 0~90 %RH
Storage Temp.: -20~70 °C
Enclosure: IP68 · Internal epoxy filling
Vibration Testing: 1~800Hz, 3.175g2/Hz

Mechanical

Main material: CPVC、PTFE or SUS316L
Rotor material: 6 rotor: ECTFE fluorine plastic
Shaft Bearing Material: Ceramic High density ceramic
O Ring material: EPDM or Viton
Plunger for Cap Material: ABS fireproof material (UL 94V-0) or stainless steel
When the fluid temperature above 80 °C, or use a pressure greater than 6 bar, please Optional stainless steel Plunger for Cap
Electrical Connection: PVC coated material, Three-wire AWG # 22 wire isolation
M12 x 4 Pins Euro connector
Engineering plastics / aluminum / SUS316 industrial round junction box
Weight: About 200g(Not contain weight of cable)
Dimensions: 130mm(L)* Ø26.70mm, Bolt head Ø 38.00mm

■ List of diameter and flow

Unit:M³/Hr ; min flow @0.5m/s ; max flow @6.0m/s ; accuracy ±0.5%FS

Caliber	最小~最大流量	管徑	最小~最大流量
1/2"	0.32~3.82	1-1/2"	2.26~27.1
3/4"	0.56~6.78	2"	3.54~42.4
1"	0.88~10.6	2-1/2"	5.98~71.4
1-1/4"	1.44~17.4	3"	9.04~108.6
4"	14.1~169.8	10"	88.4~1060.2
5"	22.1~265.2	12"	127.2~1527.1
6"	31.8~381.6	14"	173.2~2078.4
8"	56.6~678.6	16"	226.1~2714.4

■ K value parameter table

If the actual discrepancy, the actual measurement methods available to correct K value.

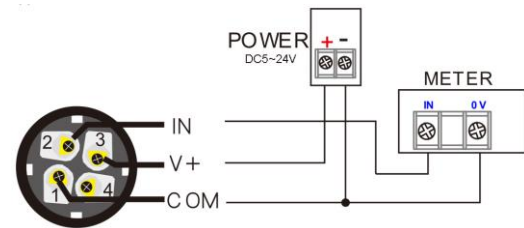
Tee T-mount K value table			
Caliber	PVC	PP	SUS
1/2"	273.40	246.37	-
3/4"	164.94	156.67	-
1"	85.08	83.07	80.63
1-1/2"	59.54	58.45	51.29
Saddle mount - plastic pipe K value table			
Caliber	PVC SCH80	南亞 PVC	PP/ PN10
2"	41.21	37.41	36.83
2-1/2"	25.47	19.19	22.85
3"	14.44	12.55	14.11
4"	7.74	7.15	8.83
6"	3.19	3.07	4.50
8"	1.59	1.56	2.19

■ DIMENSIONS

Direct outlet

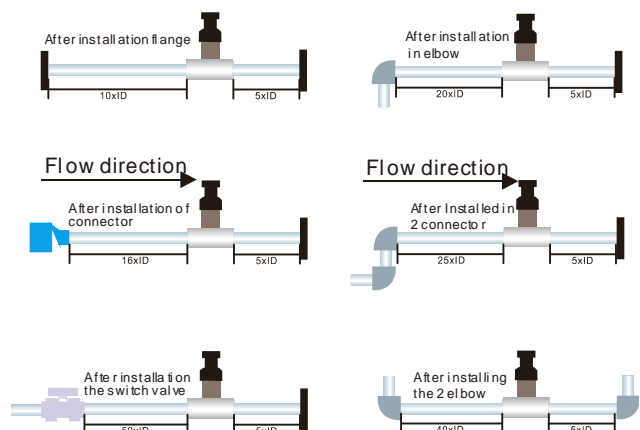


M12 Connector



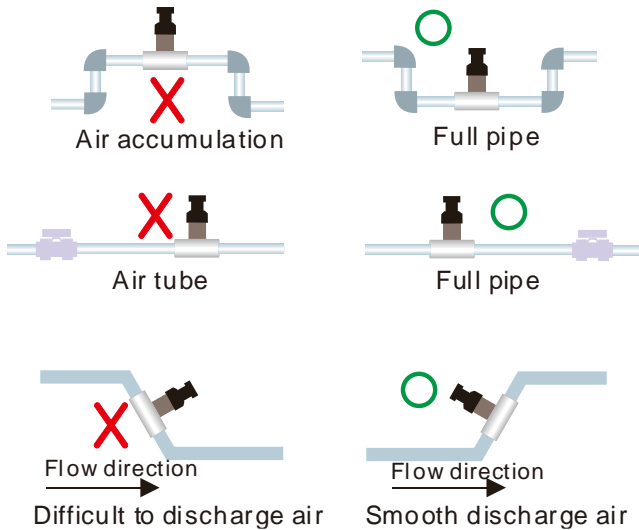
V + (white): positive input, Power Supply: DC 5 ~ 24V, IN (red): Signal Input, COM (black): negative signal input and the negative side of the point

■ Installation diagram



ID: indicates tube diameter, 10XID indicates to be ten times the diameter of the far distance
Example: 2 "diameter = 5.08 cm, 10XID = 10 * 5.08 = 50.8 cm

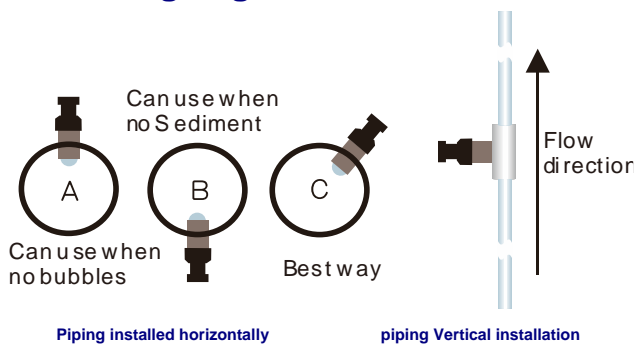
Installation Considerations



Others not recommended to install position:

- not recommended to install at the outlet of the pump (from below 50xD) susceptible to turbulence and can not detect
- not recommended to install prone to water hammer in the pipeline, likely to cause damage to the rotor
- not recommended to install piping water from top downward, it is easy not full pipe caused the error
- not recommended to install on a reciprocating pneumatic pump system because fluid can not detect fluctuations

Mounting angle



Piping installed horizontally

piping Vertical installation

Horizontal pipeline installation:

- A: Installation no bubbles in the fluid line
- B: Installed in a fluid conduit no precipitate
- C: Generally the best installation angle

Vertical piping installation:

- Can be installed on any angle, but it is recommended by the upward fluid flow (as shown)

Peripheral product and applications

FSP Paddle Wheel Flow Sensor with professional Meter, CS2-TM(PLUSE), Instantaneous / accumulated value display / control meter

CS2-RL, Instantaneous value display / control table

