

Paddle Wheel Flow Transmitter

APPLICATIONS

Features

- Water-proof IP68 enclosure, SUS and chemical resistant body.
- Low power consumption , new stable & high resolution rotor , bi - direction.
- Easy maintains, easy operation , connect to PLC / IPC directly.

Application

- Heat exchanger & chilling system.
- Water treatment & regeneration & circulation
- Dairy and beverage process CIP, process and chemicals monitoring .



FSE - **0** - **C** - **V** - **S** - **N** - **010**

| Power Supply | Sensor body | O ring | Sensor size (According to the installed fitting) | Operating condition option, with the SUS sensor cap (Fluid temp. > 80°C or Working Pressure > 6 bar) | Electronic wiring |
|--|--|--|---|---|---|
| 0 : 12-30 VDC 5 : 5 VDC | C : CPVC P : PTFE S : SUS316L | E : EPDM V : Viton P : Viton coating PTFE | S : Short L : Long | N : No Y : Yes | NNN : M12/4Pin connector 010~150 : 3 wires isolated cable (10M ~ 150M) XXX : Compact version with F1 series TBP : With plastic terminal box TBA : With Aluminum alloy terminal box TBS : With SUS316 terminal box |

PIPE SIZE VS. FLOW RATE

| Size | Min. Flow* M ³ /Hr @0.5m/s | Max. Flow* M ³ /Hr @6.0m/s |
|--------|--|--|
| 1/2" | 0.32 | 3.82 |
| 3/4" | 0.56 | 6.78 |
| 1" | 0.88 | 10.6 |
| 1-1/4" | 1.44 | 17.4 |
| 1-1/2" | 2.26 | 27.1 |
| 2" | 3.54 | 42.4 |
| 2-1/2" | 5.98 | 71.4 |
| 3" | 9.04 | 108.6 |
| 4" | 14.1 | 169.8 |
| 5" | 22.1 | 265.2 |
| 6" | 31.8 | 381.6 |
| 8" | 56.6 | 678.6 |
| 10" | 88.4 | 1060.2 |
| 12" | 127.2 | 1527.1 |
| 14" | 173.2 | 2078.4 |
| 16" | 226.1 | 2714.4 |

* Accuracy : The recommend operating value within $\pm 0.5\%$ F.S.



SUS316L/PTFE/CPVC Sensor



Sensor with terminal box

TECHNICAL SHEET

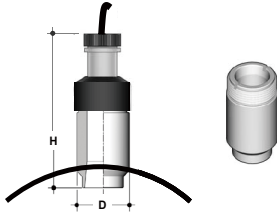
Sensor type Hall effect element(bi-direction)
 Input Liquid
 Measuring range 0.3 ~ 6m/s
 Output Square wave frequency NPN output
 Accuracy $\pm 0.5\%$ FS (K factor calibrated)@V ≥ 0.5 m/s
 Repeatability $\pm 0.5\%$ F.S.
 Media temperature CPVC body - Up to 85°C ;
 PTFE & SUS316L body - Up to 100°C
 Operating pressure
 Plastic piping system - Max. 10 bar @ 20°C water
 Metal piping system - Max. 16 bar
 Power supply
 $10\mu A$ @ 5V DC or 12-30V DC connect to PLC/IPC directly
 Material Body - CPVC, PTFE, SUS316L ;
 6 Blade - ECTFE(Halar) ;
 Bearing & Shaft - H.D. Ceramic ;
 Oring - EPDM, Viton, Viton coating PTFE
 Cable length 10 M(L); Option: Max. 150M(L)
 Electrical connection
 PVC insulated ,
 3wire AWG #22 isolated cable (Max. up to 150M) ;
 M12 x 4 Pins female cable, IP68 enclosure ;
 Plastic / AL alloy / SUS316 industrial terminal box
 Installed fitting ... Weld-on : SUS316/CS/PVC/PP/CPVC/PVDF;
 Metal Tee Fitting (threaded female) : SUS 316 /CS (PT/NPT);
 Plastic Tee Fitting : PVC / CPVC Socket welding/Flange type ;
 PP Saddle type
 Certification CE ; IEC61000

Paddle Wheel Flow Transmitter

■ INSTALLED FITTING

1. Weld-on : Material / SUS316(-XXXSW) / CS(-XXXBW) / PVC (-XXXVW) / PP (-XXXPW) / CPVC(-XXXCW) / PVDF(-XXXDW)

| Size | -XXX | Sensor | H(mm) | D(mm) |
|-----------|---------|--------|-------|-------|
| 2" - 8" | 020-080 | -S | 127 | 43 |
| 10" - 16" | 100-160 | -L | 43 | |



3. Plastic Tee Fitting : Material / PVC / CPVC
- Socket welding(-XXXVS) (-XXXCS)/Flange type(-XXXVS-F) (-XXXCS-F)

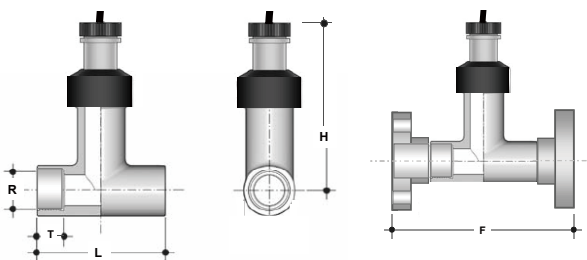
| Size | -XXX | Sensor | R (mm) *1. | T(mm) | L(mm) | H(mm) | F(mm) *3. |
|----------|------|--------|------------|-------|-------|-------|-----------|
| 1/2" *2. | 004 | -S | 21.54 | 30.58 | 112.0 | 130.5 | 200.0 |
| 3/4" *2. | 006 | -S | 26.87 | 30.58 | 112.0 | 130.5 | 188.0 |
| 1" | 010 | -S | 33.66 | 30.58 | 96.0 | 130.5 | 155.0 |
| 1-1/4" | 012 | -S | 42.42 | 34.75 | 115.5 | 131.2 | 189.5 |
| 1-1/2" | 015 | -S | 48.56 | 37.93 | 128.0 | 134.5 | 202.0 |
| 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 |

*1. The socket size in ASTM SCH80 standard.

*2. 1/2" , 3/4" with reducing bushing ends.

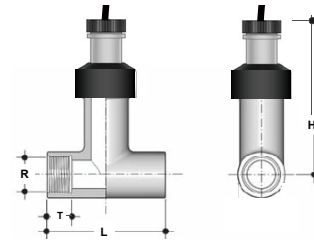
*3. Socket tee add the flange, and JIS 10K (-XXXXX-FJ)/

ANSI 150#(-XXXXX-FA) flange ends on request.



2. Metal Tee Fitting (threaded female) :
Material / SUS316(-XXXPTS, PT) (-XXXNTS, NPT) / CS (-XXXPTC, PT) (-XXXNTC, NPT)

| Size | -XXX | Sensor | R(mm) | T(mm) | L(mm) | H(mm) |
|--------|------|--------|--------|-------|-------|-------|
| 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 | 150 | 135.9 |
| 1-1/2" | 015 | -S | 1-1/2" | 25 | 150 | 138.0 |
| 2" | 020 | -S | 2" | 25 | 150 | 142.4 |



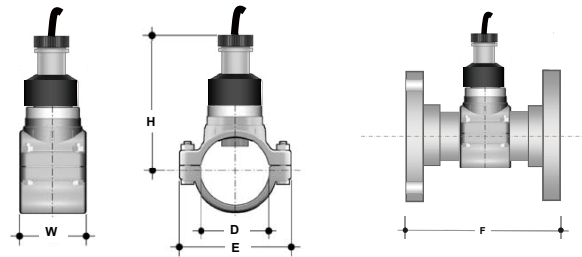
4. PP Saddle type(-XXXPSX)

| Size | -XXX | Sensor | D(mm) | E(mm) | W(mm) | H(mm) | F(mm)*5. |
|---------|------|--------|-------|-------|-------|-------|----------|
| 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" *4. | 050 | -L | - | - | - | 172.0 | 260.0 |
| 6" | 060 | -L | 160.0 | 237.0 | 168.0 | 202.1 | 300.0 |
| 8" | 080 | -L | 225.0 | 333.0 | 125.0 | 230.8 | 300.0 |
| 10" *4. | 100 | -L | - | - | - | 254.0 | 330.0 |
| 12" *4. | 120 | -L | - | - | - | 273.0 | 380.0 |

*4. Insertion parts : PVC(-XXXPSV) standard, CPVC(-XXXPSC), PVDF(-XXXPSD)

*5. Pipe add the flange, and JIS 10K (-XXXXXX-FJ)/

ANSI 150#(-XXXXXX-FA) flange ends on request.



■ INSTALLATION GUIDE – REFER TO EN ISO 5167-1

