

COSMOS

FS-1515 Rotor-Paddle-Wheel Flow Sensor

MODEL FS-1515



YANGTECH TECHNOLOGY CO., LTD.(TAIWAN)

COSMOS FM-1515 ROTOR-PADDLEWHEEL

FLOW SENSER OPERATION GUIDE



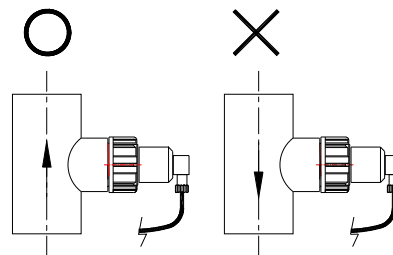
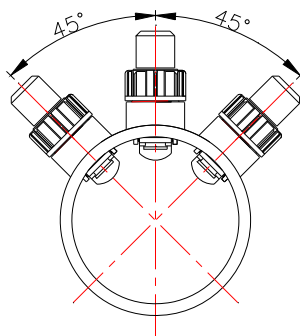
SAFETY INSTRUCTIONS

- Consult the operation manual before installation and/or service.
- Do not remove from pressurized lines.
- Do not exceed maximum temperature and pressure specifications.
- Wear safety goggles and faceshield during installation and service.
- Do not alter product construction.
- Failure to follow safety instructions could result in severe personal injury.



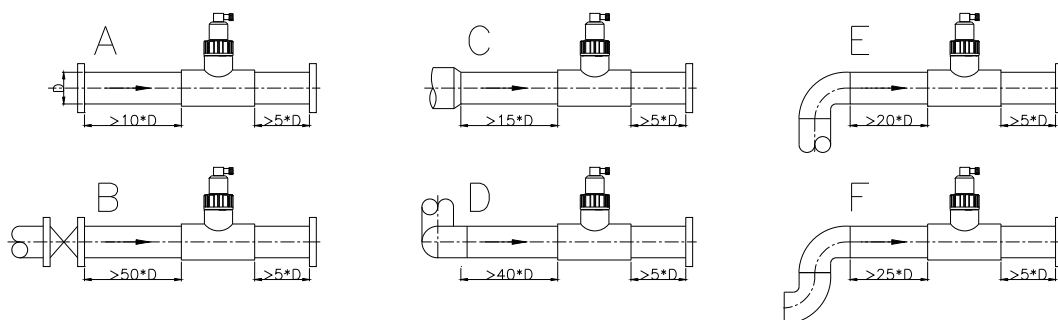
SENSOR MOUNTING POSITIONS

- When horizontal pipe runs: Mount this sensor in up-right position is essential. When air bubbles are present, 45° of opposite side is limited.
- Do not mount on the bottom of the pipe when sediments are present.
- When Vertical pipe runs: Sensor must be mounted in lines with upward flow only.



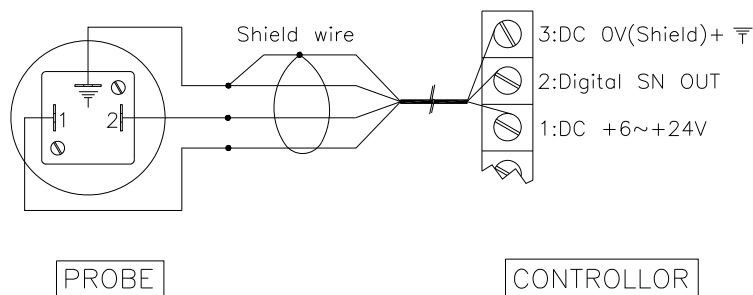
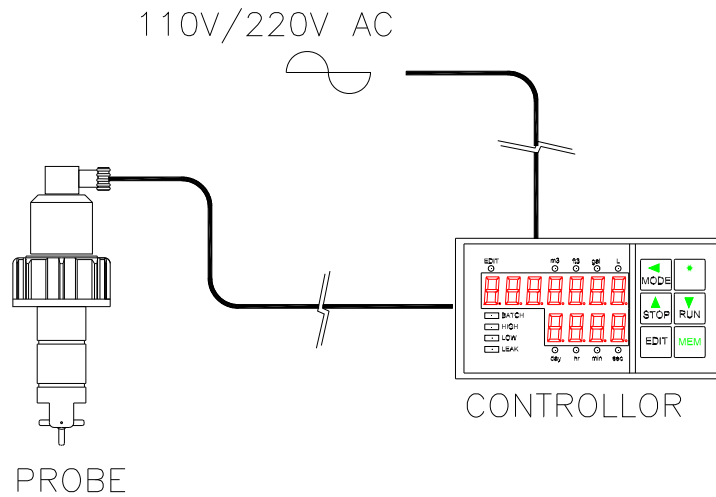
LOCATION OF FITTINGS

- Recommended sensor upstream/downstream mounting requirements.
- A.Flange B.Valve/Gate C.Reducer D.2*90° elbow(3-dimensions) E.90° elbow F.2*90° elbow



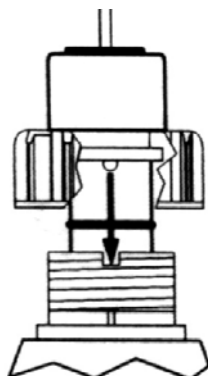
SYSTEM CONSTRUCTION

- Use 2-conductor shielded cable for cable extensions up to 80 meter.(when cable longer than 80m it needs signal amplifier)
- The sensor's connector is IP65 certified, 6.0mm diameter cable is needed.
- Cable shield must be maintained through cable splice



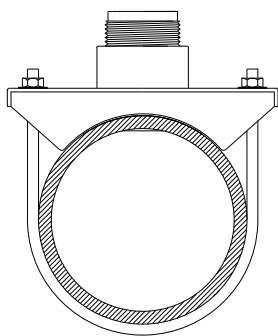
SENSOR INSTALLATION

1. Lubricate the sensor O-rings with silicone lubricant(e.g. GE silicone #G632 or equivalents). Do not use any petroleum based lubricant that will attack the O-ring.
2. Using an alternating/twisting motion to lower into the fitting. Make sure the alignment tab match the fitting notch.
3. Hand tighten the sensor cap. (Do not use any tighten tool)
4. Install display/control unit and establish the connections.

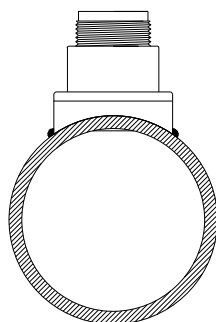


FITTINGS

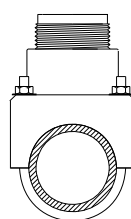
A(strap-on saddles)



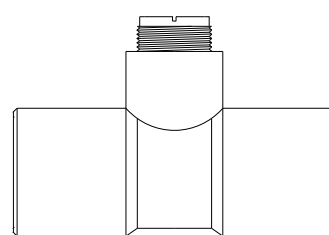
B.(fusion-on saddles)



C(strap-on saddles)

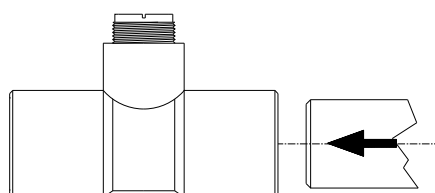
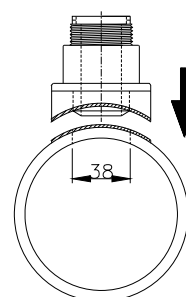


D(glue-on tees)



Discp.Type	TYPE-A	TYPE-B	TYPE-C	TYPE-D
Materials	saddle plate :SUS304 U-type fitting:SUS304 Sensor base:PVC,PP;HDPE	Sensor base: PVC	U-type fitting:SUS304 Sensor base:PVC,PP;HDPE	Sensor base: PVC,PP
Available diameters	3.0"	3.0"		1.5"
	4.0"	4.0"	1.5"	2.0"
	5.0"	5.0"	2.0"	3.0"
	6.0"	6.0"	3.0"	4.0"
	8.0'	8.0'		6.0'
Maxmiun Pressure(kg/cm2)	6.0	3.0	6.0	6.0
Direct installation function	Yes	Yes	Yes	No

- If the pipe is made of PVC\PP\HDPE , use Type-B (thick pipe) to reduce deviation.
- TYPE-A,B,C is designed to be directly install, there is no need of disassemble of pipe :
 1. Stop running and drain out the pipe.
 2. Clean up the surface of the pipe where the detector will be installed.
 3. Drill a hole of 38-40mm in diameter then clean the holed area thoroughly.
 4. Smear PVC glue on the joint and pipe. (See right illustration)
(For installation in metal pipe, use silicon glue instead of the PVC glue.)
 5. Use saddle plate and U-type fitting to fix the sensor (TYPE-A,C) .
 6. Use welding rod (of same material with the pipe) to weld the fusion saddle on the pipe.(TYPE-B , professional skill may needed) .
- TYPE-D is designed for pipes insert and glue :
 1. Stop running and drain out the pipe.
 2. Clean up the surface of the pipe where the detector will be installed.
 3. Use proper glue to smear over the joint area. (See down illustration)
 4. Insert the pipe into the glue-on tees for both side to complete the installation.



K-FACTOR

- The K-factor is the number of pulses the sensor will generate for each engineering unit of fluid passes. They are listed in unit of pulses/liters.
- The K-factor should input into a proper display/controller to achieve a correct result.

Pipe Diameter (inch)	Disp. High dsph (m3/hr)	Count Time c.time (sec)	Input Signal High inhi (p/sec)	K-Factor (pulse/litter)
2.0"	2.2~36.8	3600	142.17	13.908
3.0"	5.2~86.0	3600	142.03	5.947
4.0"	8.5~141.4	3600	142.10	3.618
5.0"	13.3~220.9	3600	142.07	2.315
6.0"	18.6~310.0	3600	142.21	1.651

SPECIFICATIONS

- Flow rate range: 0.3-5.0 m/sec
- Linearity: 2% of maximum range
- Repeatability: 1.0% of maximum range
- Cable: 2-conductor twisted pair with shield, below 80 meters with no amplification
- Operation temperature: 10-60 °C
- Power source: DC 6-24V
- Source impedance: 8k Ω
- Output: digital of Max. 5.0 Volts
- Quality standard: FM, CE

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