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TSonic 301 Inline

Flange ultrasonic flow meter is one kind of economy liquid flow meter which mainly measure various of pure liquid, such as: Clean water, Sea water, Drinking water, River water, Alcohol etc.
And it is suitable for continuously measuring flow and heat of clean and uniform liquids without large concentration suspended particles or gases industrial environment.

Advantages

- ✓ Accuracy better than ±1.0%
- ✓ High reliability, high performance, low price
- ✓ Bi-directional flow measurement
- ✓ No moving parts, no wear, no pressure loss, Maintenance-free
- ✓ Measuring conductivity liquid and Non-conductivity liquid Display instantaneous flow, Total flow, Heat, Positive flow, Negative flow.
- ✓ High precision machined pipe sections, the sensor is installed before leaving the factory to ensure high measurement accuracy.

Applications

Inline ultrasonic flow meter could connect temperature sensor to become one calorimeter and widely be u sed in Food industry, Oil & Gas industry, Chemical industry, Water treatment industry, Trade settlement, Power industry

Technical Data

Description	Specifications
Size	DN15~DN6000
Accuracy	Better than ±1.0%
Velocity range	0~±10m/s
Liquid temperature	0~160℃
Liquid Type	Water, sea water, waste water, alcohol, beer, various kinds of oil etc which can conduct ultrasound single uniform liquid
Pipe material	Steel, stainless steel, cast iron, copper, PVC, aluminum, FRP etc, all kinds Of dense pipeline, can be liner inside
Output signal	1 channel 4-20mA output, inpedence 0-1K ; 1 channel OCT pulse output, pulse width 6-1000ms, (default is 200ms); 1 channel relay output
Input Signal	4-20mA input Connect with three wire PT100, can achieve heat measurement
Communication	RS485 MODBUS RTU
Power supply	DC8-36V or AC85-264V
Protection	IP65
Power Consumption	1.5W

Water temperature and sound speed table

Temperature(℃)	Sound speed (m/s)	Temperature(℃)	Sound speed (m/s)
0	1403	50	1541
5	1427	55	1546.5
10	1447	60	1552
15	1464	65	1553.5
20	1481	70	1555
25	1494	75	1555
30	1507	80	1555
35	1516.5	85	1552.5
40	1526	90	1550
45	1533.5	95	1547
		100	1543

Ultrasonic flow meter model selection

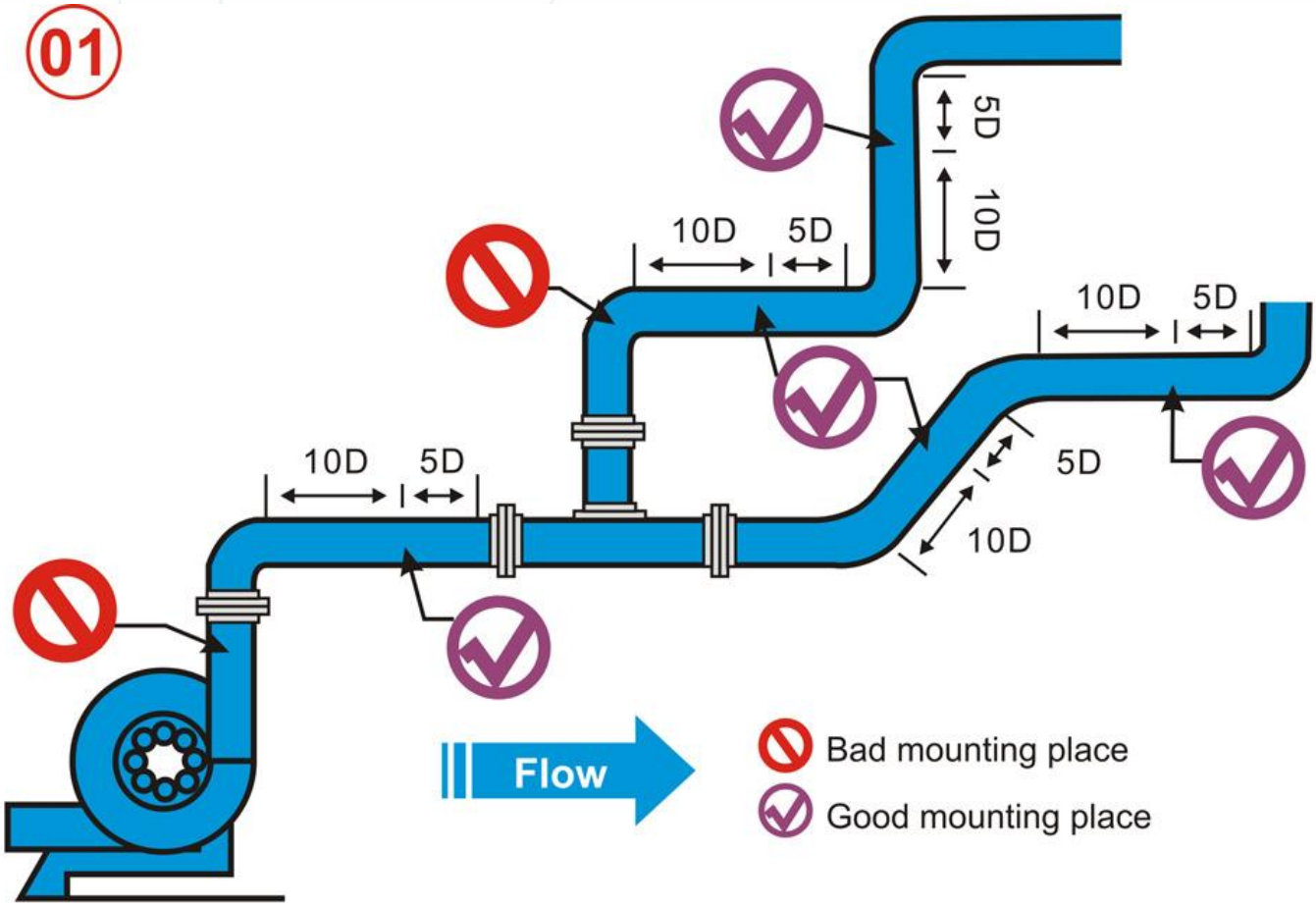
Model	TSonic-301	X	X	X	X	X	X	X	X
Nominal Size	DN15~DN1000								
Structurer	Compact	C							
	Remote	R							
Sensor Material	Carbon Steel		CS						
	SS304		S4						
	SS316		S6						
Process Temperature	-30℃~85℃			T1					
	-30℃~150℃			T2					
Power Supply	8~36 VDC				DC				
	85~264 VAC				VC				
Cable Length	5m x 2 (standard signal cable length)					DC			
	Optional cable length					VC			
Proteciton Grade	IP65 transmitter + IP65 transducers						5		
	IP65 transmitter + IP68 transducers						8		
Temperature Sensor	Without temperature sensor							WT	
	With PT100 temperature sensor							W	
Process Connection	Flange	DIN D10: PN10, D16: PN16, D25: PN25, D40: PN40							D**
		ANSI A15: 150#, A30: 300#, A60: 600#							A**
		JIS J10: 10K, J20: 20K, J30: 30K, J40: 40K							J**
	Thread								T

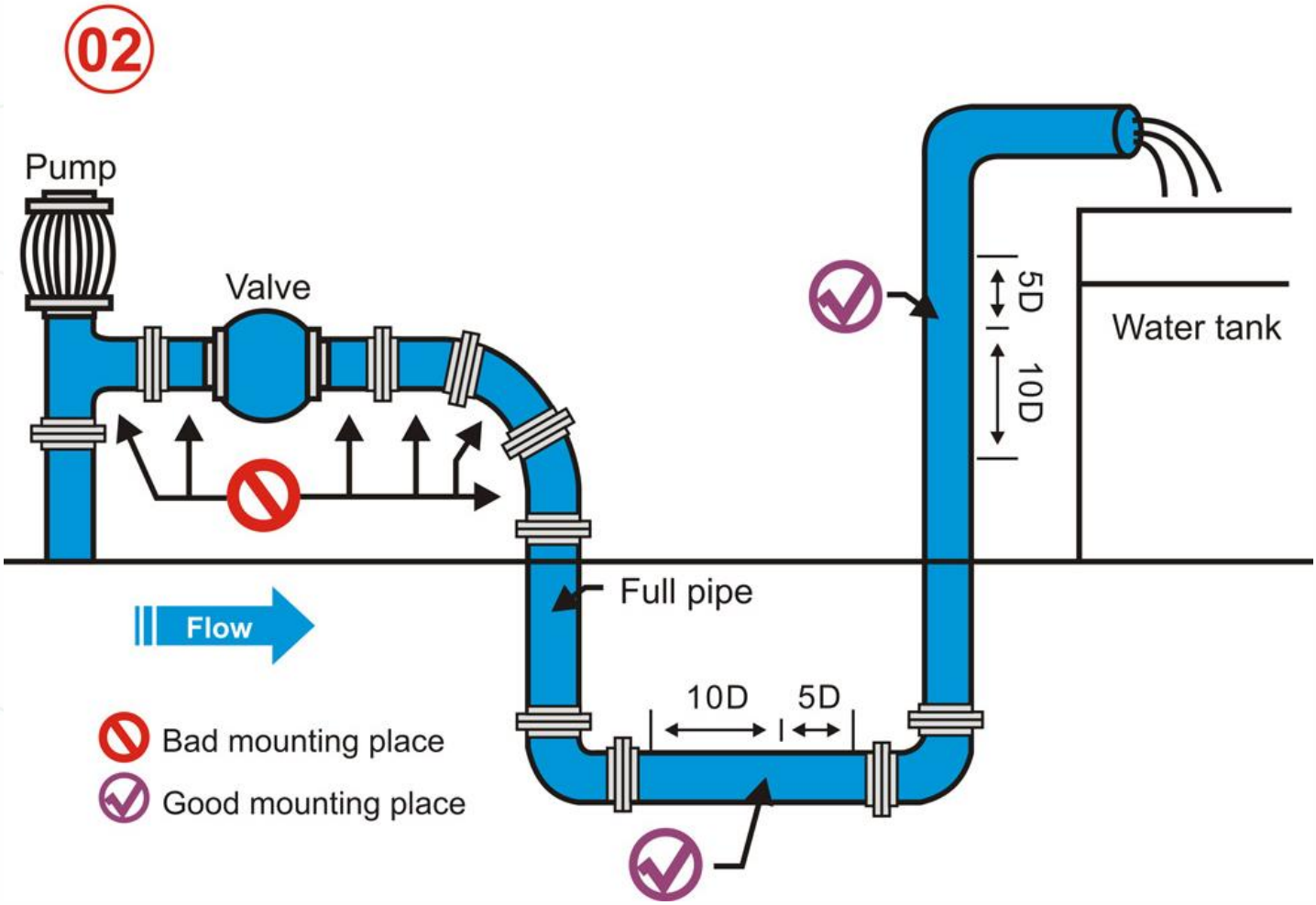
Installation

Integral Display Flange Ultrasonic Flow Meter Installation Requirement

Generally, the following principles should be followed:

- To select a pipe section filled with fluid, such as a vertical part of the pipeline or a horizontal pipe section filled with fluid.
- The measuring point should be 10 times the diameter from the upstream and the straight pipe section within 5 times the diameter from the downstream, and the distance from the valve outlet should be as far as possible.





- Ensure the temperature at the measuring point is within the working range.
- Fully consider the fouling condition of the inner wall of the pipe, and try to select a non-scaling pipe section for measurement. When it cannot be satisfied, fouling should be considered as a lining for better measurement accuracy.
- Select pipe sections with uniform and dense pipes that are easy for ultrasonic transmission.
  Please refer to the two examples on the right for the selection of measuring points.