

Sanitary Turbine Flowmeters

Accurate, Versatile, and Economical

Description

Flow Technology's sanitary turbine flowmeters provide accuracy, versatility and economy in measuring a wide variety of food, beverage and pharmaceutical products. Flow Technology's more than 30 years experience enables the company to produce an extremely durable sanitary turbine flowmeter with a repeatability of $\pm 0.1\%$.

The SA Series Sanitary Turbine Flowmeters feature 316 stainless steel construction and have a smooth finish, which is designed to eliminate cracks and crevices where bacteria breed.

Standard flowmeters are available in sizes from 1/2" to 2" with sanitary clamps. Flow rates range from 0.1 to 250 gallons per minute (0.38 to 946 LPM).

Typical applications include measuring or batch controlling water, WFI, USP water, deionized water, vaccines, clean pharmaceuticals, milk, cream, vegetable oil, wine, beer, spirits, soft drinks, juices (without pulp) and any other clean, consumable liquid.



Sanitary Turbine Flowmeters

Stainless Steel Construction

Features

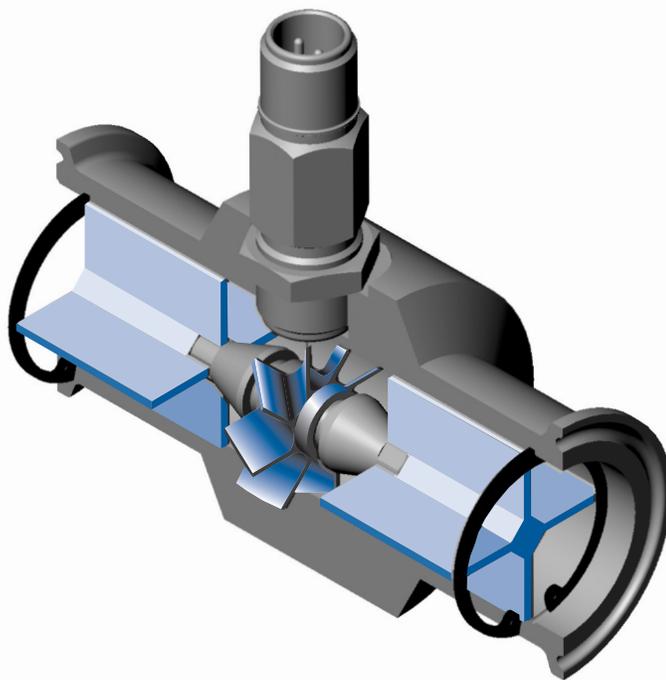
- Available in sizes from 1/2" to 2" with sanitary clamp
- Flow rates from 0.1 to 250 gallons per minute (GPM)
- Temperature ranges up to 350° F (177° C)
- 316 stainless steel construction
- Magnetic or modulated carrier (RF) pickoffs available
- Exceptional repeatability of $\pm 0.1\%$
- NIST traceable calibrations
- Withstands clean-in-place (CIP) and sterilize-in-place (SIP) processes
- Compatible with all Flow Technology electronics
- Ceramic bearings for long life



SA Series

Flowmeter Cut-Away

SA-24



Specifications

Repeatability	±0.1% of reading
Linearity	±0.5% of reading over the normal 10:1 flow range Note: SA4-8 is ±2% of reading
Maximum Particle Size	100 microns
Response Time	5–10 ms to step change
Pressure Drop	Less than 10 psi for max. flow in water
Max. Pressure	250 psig/17.2 bar g
Max. Temperature	350° F (177° C)
Frequency Range	20–2000 Hz typical (depends on model)

Sanitary Clamps

T1	3/4" clamp/0.98" O.D.
T2	1-1/2" clamp/1.98" O.D.
T3	2" clamp/2.51" O.D.

Tapered End Fittings

The I.D. of the Flow Technology sanitary meters are designed with a taper in the end fitting to provide a smooth transition from the meter bore to standard size mating tubing. The standard "Tapered to Line Size" is provided in the "Model Numbering System" chart.

Pickoff Coil

Magnetic	
<i>Transmission distance:</i>	300 ft. (91 meters) without pre-amplifier
<i>DC coil resistance:</i>	2275 ohms, nominal
<i>Minimum output voltage:</i>	10 mV
Modulated Carrier	
<i>Transmission distance:</i>	30 ft. (9 meters) maximum to carrier amplifier
<i>DC coil resistance:</i>	12 ohms, nominal

Pickoff Electronic Mating Connections

MS Connector	
<i>2-pin, standard pickoff:</i>	15-89515-101
<i>3-pin, amplified pickoff:</i>	15-89515-102
Threaded Connection with Leads	
<i>Junction Box with Terminal:</i>	73-31836-105

SIP Considerations

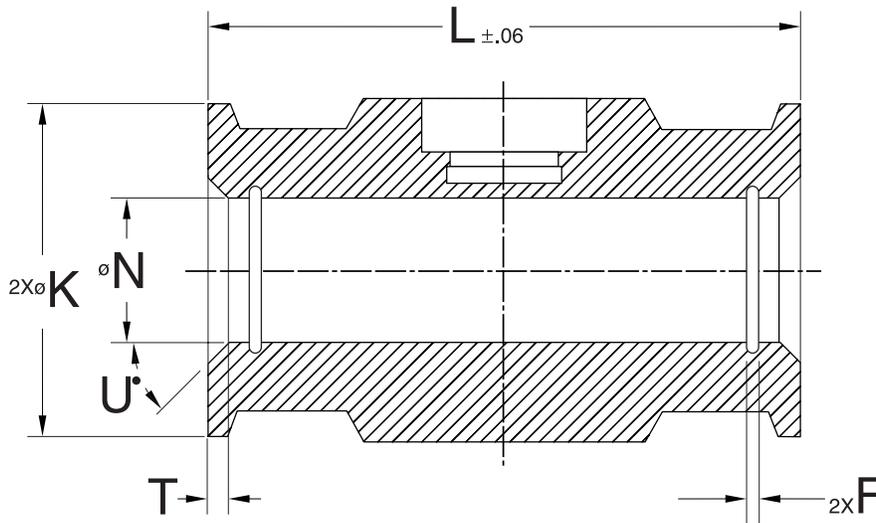
Dynamic steaming of 5 minutes or less is recommended for maximum life expectancy

Surface Finish

Bore	25 Ra
Internals	30 Ra

SA Series

Dimensions



Standard Configuration

U	45°	45°	45°	45°	45°	50°	45°	50°	45°	45°
T	.039 .036	.012 .009	.112 .109	.092 .089	.187 .184	.130 .127	.012 .009	.157 .154	.030 .027	.059 .056
N	Ø.302 Ø.300	Ø.372 Ø.370	Ø.402 Ø.400	Ø.442 Ø.440	Ø.504 Ø.502	Ø.565 Ø.563	Ø.862 Ø.860	Ø1.002 Ø1.000	Ø1.317 Ø1.315	Ø1.753 Ø1.751
L	2.45	2.45	2.45	2.45	3.25	3.25	3.56	4.06	4.59	6.06
K	Ø.988 Ø.980	Ø.988 Ø.980	Ø.888 Ø.880	Ø.988 Ø.980	Ø1.988 Ø1.980	Ø1.988 Ø1.980	Ø1.988 Ø1.980	Ø1.988 Ø1.980	Ø1.988 Ø1.980	Ø2.520 Ø2.512
F	.037 .035	.037 .035	.037 .035	.037 .035	.035 .030	.035 .030	.045 .037	.049 .044	.052 .048	.072 .068
Used On	SA4-8	SA6-8	SA8-8	SA-08	SA-10	SA-12	SA-16	SA-20	SA-24	SA332
Line Size	.5"		.75"	.75"	1"			1.5"		2"
Clamp Size	.75"				1.5"				2"	
Code	T1				T2				T3	

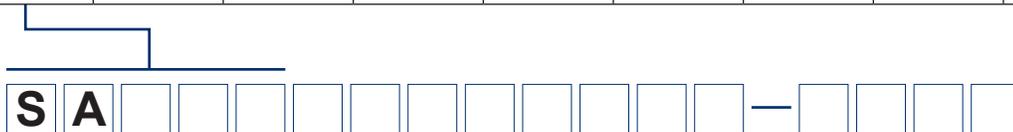
Optional Configuration

U	45°	45°	60°	60°	60°	60°	60°	60°	60°	
T	.030 .026	.030 .026	.166 .163	.144 .141	.137 .134	.126 .134	.150 .147	.110 .107	.163 .160	
N	Ø.504 Ø.502	Ø.565 Ø.563	Ø.302 Ø.300	Ø.372 Ø.370	Ø.402 Ø.400	Ø.442 Ø.440	Ø.862 Ø.860	Ø1.002 Ø1.000	Ø1.317 Ø1.315	
L	3.25	3.25	2.45	2.45	2.45	2.45	3.56	4.06	4.59	
K	Ø.988 Ø.980	Ø.988 Ø.980	Ø1.988 Ø1.980	Ø1.988 Ø1.980	Ø1.988 Ø1.980	Ø1.988 Ø1.980	Ø2.520 Ø2.512	Ø2.520 Ø2.512	Ø2.520 Ø2.512	
F	.035 .030	.035 .030	.037 .035	.037 .035	.037 .035	.037 .035	.045 .037	.049 .044	.052 .048	
Used On	SA-10	SA-12	SA4-8	SA6-8	SA8-8	SA-08	SA-16	SA-20	SA-24	
Line Size	.75"		1"				2"			
Clamp Size	.75"		1.5"				2"			
Code	T1		T2				T3			

SA Series

Model Numbering System

Basic Model No.	Clamp		Tapered to Line Size	Meter I.D. In.	Normal 10:1 Size Flow Range				Extended Flow Range				Nominal Max Freq.
	Standard	Optional			GPM MIN MAX		LPM MIN MAX		RF MIN GPM LPM		MAG MIN GPM LPM		All MAX GPM LPM
SA4-8	T1=.75"	T2=1.5"	0.5" 1.0"	0.30 0.30	.25 2.5	.95 9.5	.10 .38	.12 .45	3 11			2000	
SA6-8	T1=.75"	T2=1.5"	0.5" 1.0"	0.37 0.37	.50 5	1.9 19	.15 .57	.20 .76	5 19			2100	
SA8-8	T1=.75"	T2=1.5"	.75" 1.0"	0.40 0.40	.75 7.5	2.8 28	.20 .76	.75 .95	8 30			2000	
SA-08	T1=.75"	T2=1.5"	.75" 1.0"	0.44 0.44	1.00 10	3.8 38	.25 .95	.3 1.1	10 38			2000	
SA-10	T2=1.5"	T1=.75"	1.0" .75"	0.50 0.50	1.25 12.5	4.7 47	.30 1.1	.4 1.5	15 57			2000	
SA-12	T2=1.5"	T1=.75"	1.0" .75"	0.56 0.56	2 20	7.6 76	.50 1.9	.5 1.9	25 95			2000	
SA-16	T2=1.5"	T3=2.0"	1.0" 2.0"	0.86 0.86	5 50	19 190	1.0 3.8	1.0 3.8	60 227			2000	
SA-20	T2=1.5"	T3=2.0"	1.5" 2.0"	1.00 1.00	9 90	34 340	1.0 3.8	1.5 5.7	100 380			1950	
SA-24	T2=1.5"	T3=2.0"	1.5" 2.0"	1.32 1.32	15 150	57 570	1.6 6.1	2.5 9.5	160 606			1500	
SA-32	T3=2.0"	-	2.0"	1.75	22 225	83 830	2.5 9.5	3.5 13.2	250 946			1300	



Sanitary Clamp Sizes

T1 = 3/4" clamp
 T2 = 1 1/2" clamp
 T3 = 2" clamp
 Note: See above chart for line size.

Calibration Range

N = 10 points above normal 10:1
 X = 10 points extended
 Y = 20 points extended

Calibration Fluid

W = Water
 B = Viscosity Blend

Calibration Units

- = Standard
 U = Units other than GPM
 R = Range other than normal or extended
 B = Both units and range other than standard

Special Designator

Special designator to be assigned by factory when required. Examples: 316 L SS, special tapering or other special modifications.

Pickoff

1 = RF, 2-pin connector
 2 = Magnetic, 2-pin connector
 5 = RF, 1/2" NPT for mounting electronics
 3 = Magnetic, 1/2" for mounting electronics

Journal Bearings

G = Ceramic

Materials of Construction

Code	Housing	Rotor
E	316SS	430F
H	316SS	17-4*

Fluid Type

L = Liquid

* = Non-Standard

Specifications are for reference only and are subject to change without notice.



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