

Sanitary Turbine Flow Meters

Accurate, Versatile, and Economical

Description

Flow Technology's sanitary turbine flow meters 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 flow meter with a repeatability of $\pm 0.1\%$.

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

Standard flow meters 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 Flow Meters

Stainless Steel Construction

Features

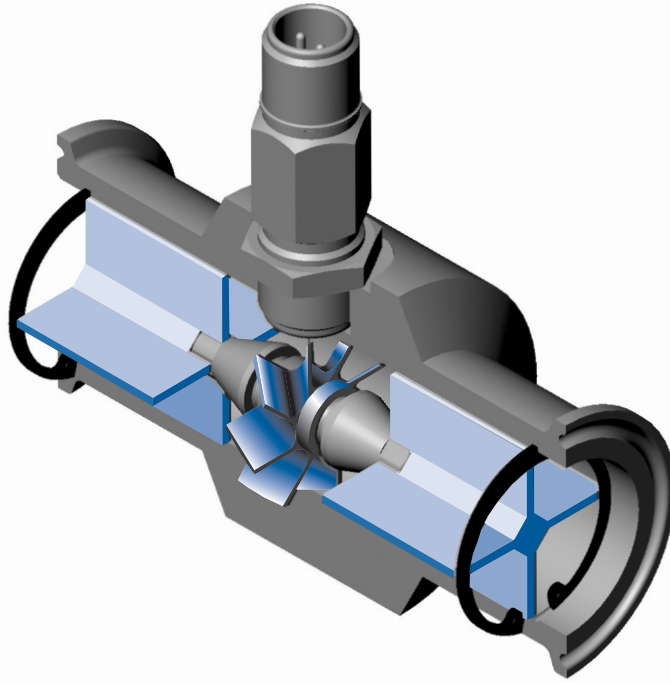
- Available in sizes from 1/2" to 2" with sanitary clamp
- Flow rates from 0.1 to 250 gallons per minute (GPM)
- Temperature ranges up to 350° F (177° C)
- 316 stainless steel construction
- Magnetic or modulated carrier (RF) pickoffs available
- Exceptional repeatability of $\pm 0.1\%$
- NIST traceable 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	
Transmission distance:	300 ft. (91 meters) without pre-amplifier
DC coil resistance:	2275 ohms, nominal
Minimum output voltage:	10 mV
Modulated Carrier	
Transmission distance:	30 ft. (9 meters) maximum to carrier amplifier
DC coil resistance:	12 ohms, nominal

Pickoff Electronic Mating Connections

MS Connector	
2-pin, standard pickoff:	15-89515-101
3-pin, amplified pickoff:	15-89515-102

Threaded Connection with Leads

Junction Box with Terminal:	73-31836-105
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SIP Considerations

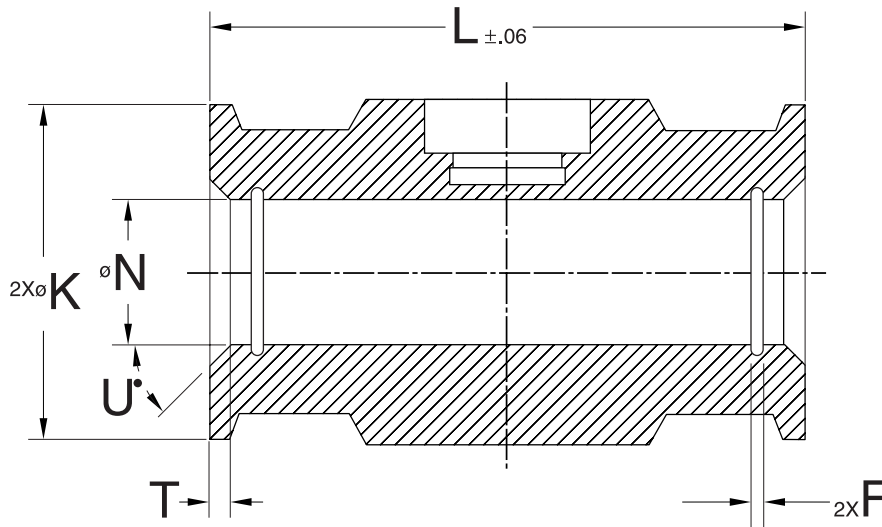
Dynamic steaming of 5 minutes or less is recommended for maximum life expectancy

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	.012	.112	.092	.187	.130	.012	.157	.030	.059
	.036	.009	.109	.089	.184	.127	.009	.154	.027	.056
N	Ø.302	Ø.372	Ø.402	Ø.442	Ø.504	Ø.565	Ø.862	Ø1.002	Ø1.317	Ø1.753
	Ø.300	Ø.370	Ø.400	Ø.440	Ø.502	Ø.563	Ø.860	Ø1.000	Ø1.315	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.988	Ø.888	Ø.988	Ø1.988	Ø1.988	Ø1.988	Ø1.988	Ø1.988	Ø2.520
	Ø.980	Ø.980	Ø.880	Ø.980	Ø1.980	Ø1.980	Ø1.980	Ø1.980	Ø1.980	Ø2.512
F	.037	.037	.037	.037	.035	.035	.045	.049	.052	.072
	.035	.035	.035	.035	.030	.030	.037	.044	.048	.068
Used On	SA4-8	SA6-8	SA8-8	SA-08	SA-10	SA-12	SA-16	SA-20	SA-24	SA-32
Line Size	.5"		.75"		1"			1.5"		2"
Clamp Size	.75"				1.5"					2"
Code	T1				T2					T3

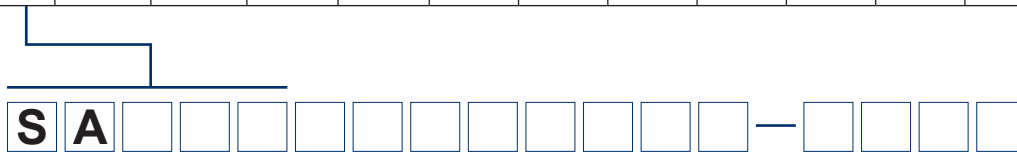
Optional Configuration

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		LPM		RF MIN		MAG MIN		AII MAX		Hz
					MIN	MAX	MIN	MAX	GPM	LPM	GPM	LPM	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 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

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

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

- Journal Bearings

G = Ceramic

– **Materials of Construction**

<i>Code</i>	<i>Housing</i>	<i>Rotor</i>
E	316SS	430F
H	316SS	17-4*

- Fluid Type

L = Liquid
* = Non-Standard