

LIQUID CONTROLS



Turbine Meters for Custody Transfer Flow Measurement of Petroleum Products

**Loading Terminal, Offshore,
and Pipeline Applications**



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Premier products, premier performance

Applications

Loading terminal, offshore, and pipeline metering

Crude petroleum products

Refined petroleum products

Industrial chemicals/solvents

Custody transfer applications

The Sponsler brand is world-recognized for reliable, high-accuracy, precision turbine flow meter systems. Whether your application requires flow measurement for custody transfer, process control, or batching and blending, a Sponsler Precision Turbine Flowmeter will provide years of consistently accurate, trouble-free service. And, because of the ease of installation, minimal maintenance, and minimal replacement parts, you'll appreciate the low cost of owning and operating Sponsler Precision Turbine Flowmeters.

Features and Benefits

The Sponsler Precision Turbine Flowmeters measure volume by means of a precision-crafted, hydraulically balanced rotor mounted in the liquid flow stream. Together, the spinning rotor and a pickup coil (located just outside the flowmeter's wall), generate an AC sine wave signal output. The signal output can be received by many electronic devices, such as registers, totalizers, and flow computers, and then used for flow rate indication and totalization.

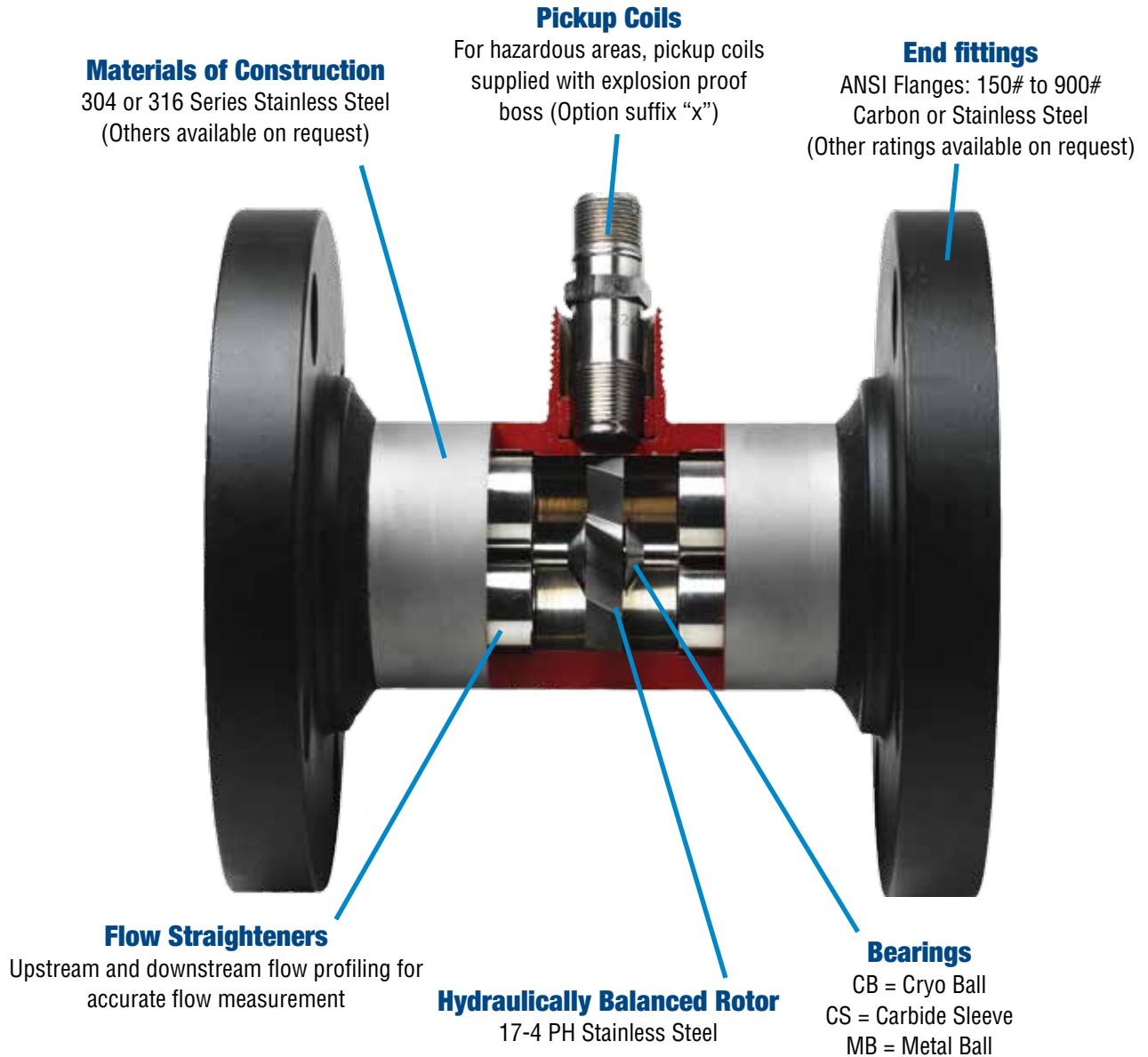
Sponsler flowmeters exceed industry expectations for high accuracy and reliability over a broad range of products, pressures, flow rates, and operating conditions. The hydraulically-balanced turbine rotor, supported by precision bearings, assures a long life and sustained high accuracy.

Sponsler flowmeter systems can be tailored to each customer's metering needs, including automatic, semi-automatic, and manual applications. Standard or custom electronic instrumentation is available for a wide range of applications.

Weights & Measures Approvals

NIST and Measurement Canada approved models are available for custody transfer applications measuring low to moderate viscosity products including solvents, fuel oil, ethanol, diesel, gasoline, and LPG.

Meter Construction



Model Selection Guide

SP (SIZE) - BEARING - ROTOR - END FITTING - MATERIALS - OPTIONS				
Bearings	Rotor	End fittings	Material	Options
MB = Metal Ball CB = Cryo Ball† CS = Carbide Sleeve	PHL = 17-4 PH SS* 430L = 430 SS**	C = 150# CS D = 150# SS E = 300# CS F = 300# SS J = 600# CS K = 600# SS H = High Pressure <i>others available</i>	4 = 304 SS 6 = 316 SS*	HT = High Temperature FB = Mod. Carrier X = Mounting Boss Blank = No Option

*Recommended for petroleum applications.

**Recommended for ethanol applications.

†Recommended for petroleum and ethanol applications.

Accessories

Repeatability:

±0.02%

Accuracy: per NIST Handbook 44

0.2% - acceptance tolerance

0.5% - special test tolerance applied to slow flow

Temperature range:

-40°F to 450°F (-40°C to 232°C) standard. For higher temperature applications, consult factory.

Flow ranges:

Refer to the table below.

Materials:

Sponsler precision turbine flowmeters are constructed of 304 or 316 series stainless steel. Other materials are available to satisfy most applications.

Electrical Output:

A minimum of 30 mV peak to peak at the minimum repeatable flow.

Pressure drop:

4 psi on water at maximum flow (typical). Actual pressure drop depends on product viscosity and flow rate.

End fittings:

ANSI flanges. Others available upon request.

Operating pressure:

Dependent on end fittings.

Calibration:

Sponsler precision turbine flowmeters are furnished with standard water calibration. Special calibrations available.

Flowmeter must be calibrated in the field for the product being measured.

SIZE	APPROVALS	FLOW RANGE (liquid)		
		GPM	BBL/hr	m ³ /hr
1"	a	4 to 60	5 to 85	0.9 to 13
1¼"	a	6 to 93	8 to 132	1.3 to 21
1½"	a, b	15 to 150	21 to 210	3 to 30
2"	a, b, c	25 to 250	35 to 350	6 to 60
2½"	a, b, c	40 to 400	57 to 570	9 to 90
3"	a, b, c	70 to 700	100 to 1000	16 to 160
4"	a, c	120 to 1,200	171 to 1,710	27 to 270

a. Available with US NIST approvals for solvent, gasoline, diesel fuel, fuel oil, and ethanol

b. Available with Measurement Canada approvals for solvent and gasoline.

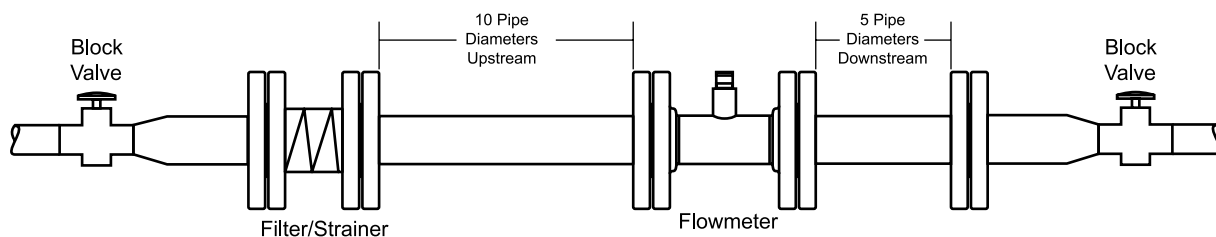
c. Available with US NIST for LPG

Flow conditioning plates

Flow conditioning plates are recommended for flowmeter installations with less than ten pipe diameters of straight pipe upstream of the meter and five pipe diameters of straight pipe downstream of the meter (as shown below). Internal flow conditioning plates are standard for 2" thru 4" flowmeters, and external flow plates are available for other sizes.

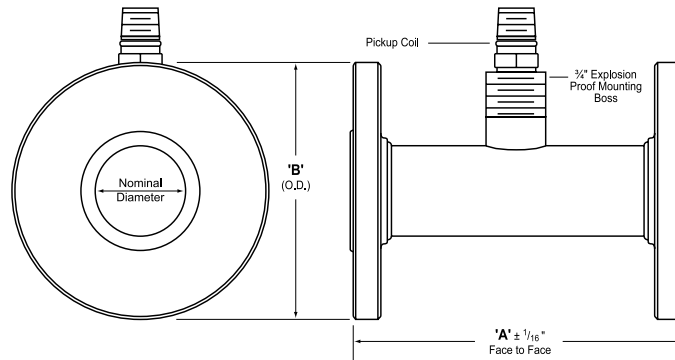


Turbine Flow Conditioning Plate



Meter dimensions

LINE SIZE (N.D.)	150# ANSI		300# ANSI		600# ANSI		900# ANSI	
	A"	B"	A"	B"	A"	B"	A"	B"
1½"	6	5	6	6.125	6	6.125	6	6.125
2"	6.5	6	6.5	6.5	6.5	6.5	6.5	6.5
2½"	7	7	7	7.5	7	7.5	7	7.5
3"	10	7.5	10	8.25	10	8.25	10	8.25
4"	12	9	12	10	12	10	12	10.75
6"	14	11	14	12.5	14	12.5	14	14
8"	16	13.5	16	15	16	15	16	16.5
10"	20	16	20	17.5	20	17.5	20	20
12"	24	19	24	20.5	24	20.5	24	22



Meter registration equipment

Sponser Precision Turbine Flowmeters can be packaged with a selection of pulser/amplifier, electronic register and flow computer options. Engineered packages are available for high-end, automated batching, and blending systems, as well as for basic electronic preset registration systems. Contact Liquid Controls for additional information.



Sponser IT-400
Rate/Totalizer



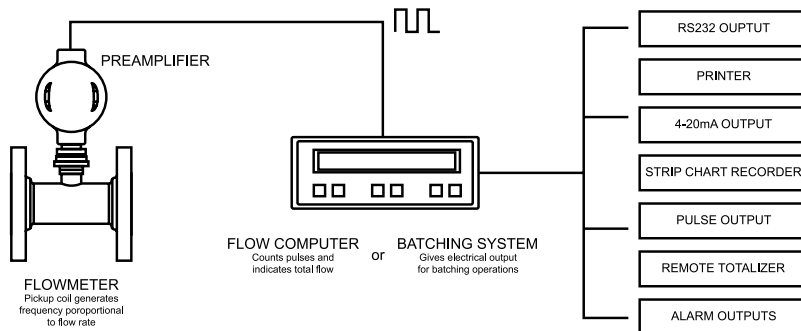
LectroCount LCR-II Electronic Register



Sponser Amplifiers



Toptech MultiLoad II





The Liquid Controls Group

The Liquid Controls Group provides custody transfer solutions for the control and management of high-value fluids and gases. In 2001, IDEX united Corken, Liquid Controls and Sampi to form the Liquid Controls Group. Together, they used their combined resources to design valuable new products and offer cost-effective pump and meter solutions. The three flagship businesses laid the foundation for LCG's successful program of collaboration and innovation. With the additions of Liquid Controls Sponsler, Toptech Systems and Faure Herman, a total of six industry leading brands, LCG quickly became a dependable, single source provider, large enough to supply comprehensive solutions yet flexible enough to customize solutions for unique needs. Today, the Liquid Controls Group has a strong global presence with seven business units in five countries and over 500 distributors on six continents.

Your Customers—Our Customers

The Liquid Controls Group (LCG) is part of the IDEX Corporation, a diversified, engineered products company. IDEX leverages the resources of high quality, similar-profile businesses to innovate solutions that bring real and lasting value to you, our customer. At LCG and IDEX, the voice of our customers is our driving force. With your guidance, we can preserve quality and develop the products and services that best meet your customers' needs.

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