682 Series

Piston Positive Displacement Flow Meter

TOTAL CONTROL SYSTEMS™

The Standard of Measurement

Accu-Flo

1-800-921-2228

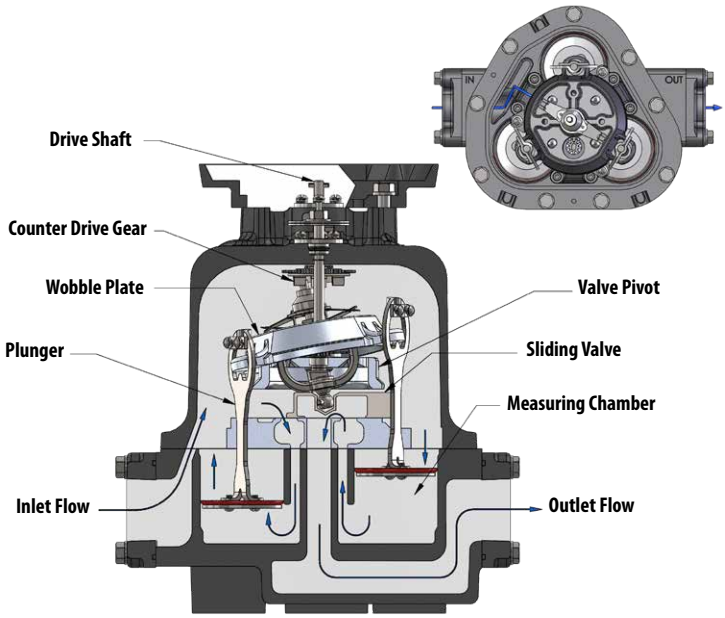
www.accuflo.com

www.TCSmeters.com

Design Principle

The TCS 682 reciprocating piston flow meter is a true positive displacement meter that has a unique inline design consisting of three reciprocating pistons operating within their respective measuring chambers. Each piston works in a manner similar to an automobile engine. The pistons are fitted to a wobble plate, which has a shaft extending from its upper surface and a valve pivot attached beneath it.

The valve pivot drives a sliding valve from piston to piston as a known amount of product flows through each cylindrical bore, controlling the sequence of events in a smooth mechanical motion. This smooth mechanical motion is then transferred through the drive shaft to the register.

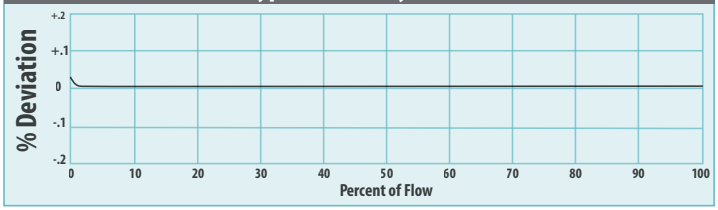


Performance Features

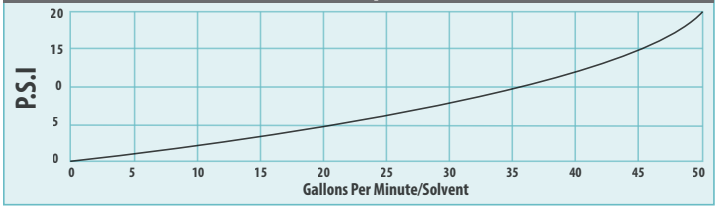
The TCS 682 reciprocating piston flow meter combines outstanding accuracy (0.1% of flow rate) with one of the widest turndown ratios in the industry (250:1). The TCS 682 reciprocating piston flow meter has a rugged industrial design that is tolerant to changing viscosities, temperatures and liquids with suspensions and solids. This proven design has over 80 years of unmatched performance and continues to provide the very best in flow measurement, backed by our industry leading **10 year warranty (5 year warranty LPG)!**

FLOW RANGE:	0.2 to 50 GPM (0.76 to 189 LPM); 250:1 Turndown Ratio LP Flow Rates: 2 to 50 GPM (7.5 to 189 LPM); 25:1 Turndown Ratio
LINEAR ACCURACY:	Capable of ± 0.1% over the full flow range
REPEATABILITY:	Capable of 0.01%
OPERATING PRESSURE:	Up to 150 PSI (10.5 BAR); 350 PSI (26 BAR) on LP meter type
TEMPERATURE RANGE:	-40°F to 160°F (-40°C to 71°C)
VISCOSITY RANGE:	Will accurately measure liquids up to 50,000 SSU (11,000 CPS)
CONNECTIONS:	1-1/2" NPT Companion flanges are standard, 1" & 2" NPT optional. BSPT, slip weld, and ANSI flanges are available upon request.
REGULATORY:	NIST, OIML, NMI, SABS, S. WA and other global regulatory approvals. (Contact factory for information on specific approvals.)

Typical Accuracy Curve



Pressure Drop Curve



Meter Types

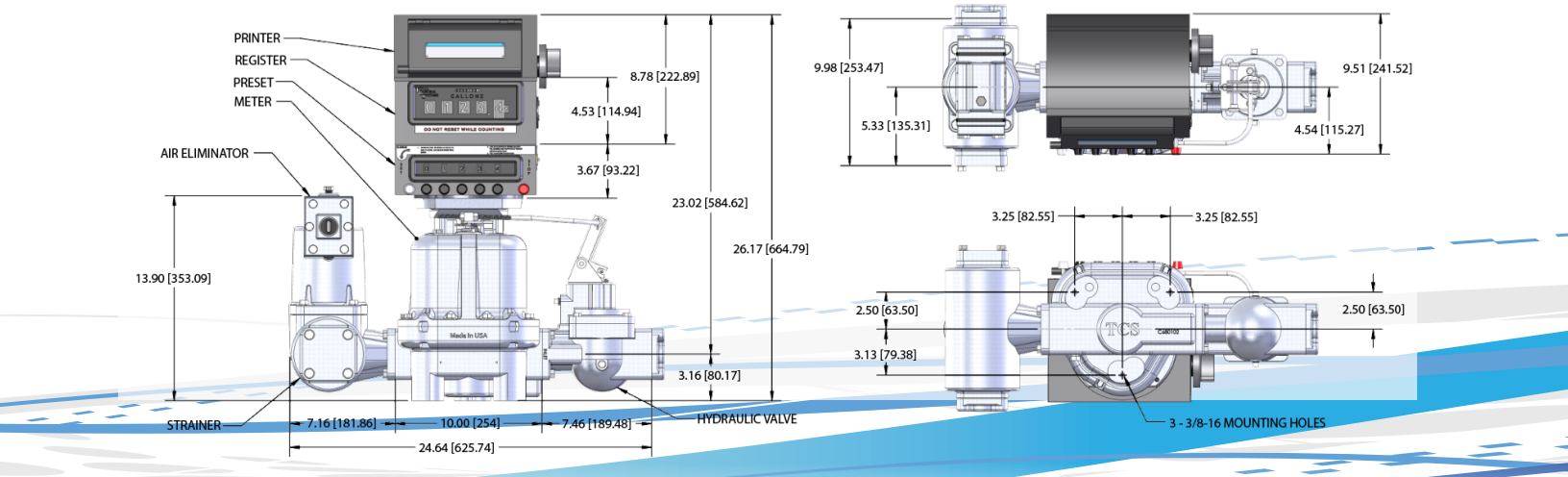
SP	**Standard Petroleum**	For metering refined petroleum products such as Gasoline, Fuel Oils, Diesel, Bio-Diesel, Kerosene, Vegetable Oils, Motor Oils, Naptha, Ethylene Glycol, etc.
SPA	**Standard Petroleum (Aviation)**	For metering refined petroleum products such as Aviation Gasoline, Jet Fuels, Ethanol, Gasoline, Fuel Oils, Diesel, Bio-Diesel, Kerosene, Vegetable Oils, Motor Oils, Naptha, Ethylene Glycol, etc.
SPD	**Standard Petroleum (Ductile Iron)**	For metering refined petroleum products such as Ethanol, Methanol, Gasoline, Fuel Oils, Diesel, Bio-Diesel, Kerosene, Aviation Gasoline, Vegetable Oils, Motor Oils, Naptha, Ethylene Glycol, etc.
AF	**All-Ferrous**	For metering Pesticides, Fertilizers, Food Processing Liquids, Industrial Chemicals, Solvents, Paints, Inks, Alcohols and many other liquids; such as Liquid Sugars, Liquid Feeds, MEK, Ethanol, Corn Syrup, Soy Bean Oil, Shortenings, Latex Products, Adhesives, Naptha, etc.
SS	**Stainless Steel**	For metering the same products as the SP, SPA, SPD and AF meter types, but includes special handling liquids; such as Acids, Anti-Icing Fluids, Vinegar, Fruit Juices, Corn Syrup, Micro-Nutrients, etc.
SSD	**Stainless Steel (DEF)**	For metering Diesel Exhaust Fluid (DEF), AdBlue, ARLA and AUS32
LP	**Liquefied Petroleum**	For metering Liquefied Petroleum Gas (LPG), NH3

Meter Materials of Construction

Description	SP	SPA	SPD	AF	SS	SSD	LP
Housing	Anodized Aluminum	Anodized Aluminum	Ductile Iron	Ductile Iron	Stainless Steel	Stainless Steel	Ductile Iron
Internal Mechanism	Iron, Steel & Stainless Steel	Ni-Resist II	Iron, Steel & Stainless Steel	Iron, Steel & Stainless Steel	Stainless Steel	Stainless Steel	Iron, Ni-Resist II & Stainless Steel
Ball Bearings	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Ceramic	Ceramic	Ceramic
Internal Hardware	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Packing Seal	FKM	FKM	Simriz®	Simriz®	Simriz®	EPDM Peroxide Cured	Buna
Body O-ring	FKM	FKM	PTFE	PTFE	PTFE	EPDM Peroxide Cured	Buna

**Simriz is a registered trademark of Freudenberg-NOK*

Dimensions in Inches (mm)



Check out our other solutions online at www.TCSmeters.com!

Meter Accessories

	Electronic Registration	TCS 3000 electronic register is a fully integrated flow computer that will control all delivery operations. The modular design and open software architecture provide you with a tailored system that is expandable for future needs.
	TCS HUB Delivery Software	TCS HUB is a SQL-based software designed to capture truck delivery information wirelessly to be electronically collected at locations and/or the home office. The TCS HUB software supports both line of sight wireless modems and/or cellular modems for real-time delivery tracking.
	Pulse Transmission	The DMP pulse transmitters provide accurate signals for remote indication, totalizers and data monitoring systems by transferring the mechanical rotation of the flow meter into an electronic pulse. This pulse can be used by the TCS 3000 or a flow computer of your choice.
	Air/Vapor Elimination	Mechanical and electronic air eliminators are devices designed to extract free or accumulated volumes of air or vapor from a liquid dispensing system to achieve accurate measurement results.
	Control Valves	Mechanical, pneumatic and electronic actuated piston and diaphragm control valves designed to meet the variety of needs in the fluid process industry. Such valves include preset flow control valves, air differential control valves, pressure relief and safety valves.
	Mechanical Registration	Mechanical 5 wheel register V/R 7887 or 6 wheel register V/R 7886 with optional preset, ticket printer, swivel, micro switch and register mounted pulser.
	Miscellaneous	Miscellaneous product accessories were developed to increase functionality of your metering solution. Such items as flow indication, RTD temperature probes, clutch assemblies, insulation jackets, protective covers and various flange connections.

Authorized Distributor

Accu-Flo
1-800-921-2228
www.accuflo.com

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The Standard of Measurement

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