



petroleum fuel & lubrication equipment specialists

TCS Product Catalogue

Distributing on behalf of



"The Standard of Measurement"

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TOTAL CONTROL SYSTEMS

Our sole purpose and commitment is to develop and manufacture precision positive displacement flow meters to help our customers achieve their goals and meet the changing fluid handling needs in the marketplace.

Our reputation for providing innovative, quality and reliable fluid handling products is coupled with our sense of customer driven services. Our first priority is to help our customers achieve increased productivity and provide value to your business today and tomorrow.

682 SERIES

0.76 LPM TO 190 LPM ALL LIQUIDS TCS 682 SERIES FLOW METER

DESIGN

The 682 series piston flow meter is a true positive displacement flow meter that has an inline design consisting of three (3) reciprocating pistons operating within their respective measuring chambers, where 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 cylinder bore, controlling the sequence of events in a smooth mechanical motion.

FEATURES

- Superior Accuracy over the entire flow range
- Low Maintenance
- Long Service Life
- 75 years of proven performance and acceptance
- Wide Viscosity Range - up to 50,000 SSU (11,000 CPS)
- Meets NIST, OIML and many other international weights & measures certifications - NMIApproved for Re-Sale / ATO Claims
- Industry leading 10 YEAR WARRANTY!

SPECIFICATIONS

Design:	Reciprocating Three (3) Piston
Size:	1-1/2" Flange Connection
Type:	SP, SPA, SPD, AF & SS
Flow Range:	0.2 to 50 GPM (0.76 to 190 LPM)
Linear Accuracy:	Capable of +/- 0.1% over flow range
Repeatability:	0.01% over 250:1 turndown
Pressure:	150 PSI (10.5 BAR)
Temperature:	- 40 to 160°F (- 40 to 71°C)
Material:	Aluminum, Ductile Iron & Stainless Steel
Seals:	Viton®, Teflon® & Simriz



METER TYPES

SP Standard Petroleum

Gasoline, Fuel Oils, Diesel, Bio-Diesel, Kerosene, Vegetable oils, Motor Oils, Ethylene Glycol, Naptha etc.

SPA Standard Petroleum - Aviation

Aviation Gasoline, Gasoline, Jet Fuels, Fuel Oils, Diesel, Bio-Diesel, Kerosene, Naptha, etc.

SPD Standard Petroleum - Ductile (Nodular) Iron

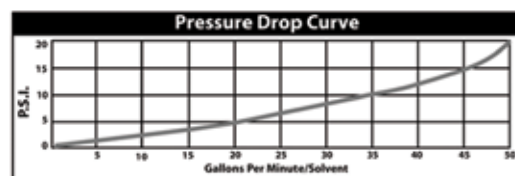
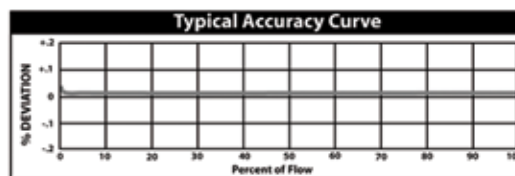
Ethanol, Methanol, Aviation Gasoline, Gasoline, Diesel, Bio-Diesel, Fuel Oils, Kerosene, Vegetable Oils, Motor Oils, Naptha, etc.

AF All Ferrous

Industrial Chemicals, Solvents, Pesticides, Nitrogen Solutions, Fertilizer, Chlorinated Solvents, Paints, Inks, Alcohols, Adhesives, Molasses, Corn Syrup, etc.

SS Stainless Steel

Industrial Chemicals, Solvents, Nitric Acid, Phosphorus Acid, Glacial Acetic Acid, Anti-Icing Fluid, Vinegar, Fruit Juices, etc.



700 SERIES

19 LPM TO 2271 LPM ALL LIQUIDS TCS 700 SERIES FLOW METER



DESIGN

The 700 series rotary flow meter has a simple and efficient meter design consisting of a housing and three rotors that rotate in unison within the measuring chamber. The absence of wear, from no metal-to-metal contact inside the chamber, eliminates any deterioration in accuracy and provides a long service life. The rotors are supported by bearings inserted into two bearing plates, where at the end of each rotor shaft is a timing gear. The timed rotation between each rotor is then transferred through the calibration adjuster to the register, which will then give a consistent and superior measurement of accuracy.

METER TYPES

SP Standard Petroleum

Gasoline, Fuel Oils, Diesel, Bio-Diesel, Kerosene, Jet Fuels, Vegetable oils, Motor Oils, Ethylene Glycol, Naptha etc.

SPA Standard Petroleum - Aviation

Aviation Gasoline, Gasoline, Jet Fuels, Fuel Oils, Diesel, Bio-Diesel, Kerosene, Naptha, etc.

SPD Standard Petroleum - Ductile (Nodular) Iron

Ethanol, Methanol, Aviation Gasoline, Gasoline, Diesel, Bio-Diesel, Fuel Oils, Kerosene, Vegetable Oils, Motor Oils, Naptha, etc.

LP Liquefied Petroleum Gas

Liquefied Petroleum Gas (LPG), Butane, Freon, etc.

IC Industrial Products (Carbon Bearings)

Industrial Chemicals, General Solvents, Water, Alcohols, Acetones, MEK, Toluene, etc.

IP Industrial Products (SS Bearings)

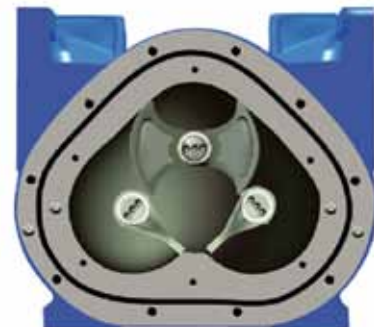
Industrial Chemicals, General Solvents, Liquid Sugars, Corn Syrup, Soybean Oil, Shortenings, Latex Products, Adhesives, etc.

AF All Ferrous

Industrial Chemicals, Solvents, Pesticides, Nitrogen Solutions, Fertilizer, Chlorinated Solvents, Paints, Inks, Alcohols, Adhesives, Molasses, Corn Syrup, etc.

SS Stainless Steel

Industrial Chemicals, Solvents, Nitric Acid, Phosphorus Acid, Glacial Acetic Acid, Anti-Icing Fluid, Vinegar, Fruit Juices, etc



700 SERIES 19 LPM TO 2271 LPM ALL LIQUIDS TCS 700 SERIES FLOW METER



TCS Meters and Registers: suitable for "in pit" refuelling solutions

FEATURES

- No metal-to-metal contact within the measuring chamber
- Low Pressure Drop
- Low Maintenance
- Long Service Life
- Light and Compact Design
- Bi-directional Flow Direction
- Wide Viscosity Range - up to 1,500,00 SSU (325,000 CPS)
- Meets NIST, OIML and many other international weights & measures - NMI Approved for Re-Sale / ATO Claims

SPECIFICATIONS

Design:	Three (3) Rotors
Meter Types:	SP, SPA, SPD, LP, IC, IP, AF & SS
Linear Accuracy: of maximum	5:1 Turndown - capable of $\pm 0.100\%$ nominal flow rate 10:1 Turndown - capable of $\pm 0.125\%$ of maximum nominal flow rate 15:1 Turndown - capable of $\pm 0.150\%$ of maximum nominal flow rate
Repeatability:	0.05% over 15:1 turndown
Pressure:	150 PSI (10.5 BAR) 350 PSI (25 BAR) 700-20 LP METER TYPE ONLY
Temperature:	- 40 to 160°F (- 40 to 71°C)
Material:	Aluminum, Ductile Iron & Stainless Steel
Seals:	Viton®, Teflon®, Simriz® & U Buna

PRODUCT RANGE



*TCS Meters and Registers:
suitable for delivery vehicle applications*

METER SELECTION

Any flow meter should be carefully chosen with consideration given to the specifications and engineering of the required application. System variables might include flow rates, temperatures and pressures. The product characteristics include the material compatibility, lubricity, viscosity, suspensions, pH, and whether the product can congeal, crystallize or leave a dry film. Correct selection will ensure optimum operations reducing any risk of system failure.

AIR ELIMINATION

In any system where the tank may be completely drained or multiple products manifold into one metering system, the possibility of air being present increases. The solution is an air or vapour eliminator located before the flow meter to vent the air or vapour from the system before it can be measured. Air or vapour elimination is required for all weights and measures regulatory approvals in custody transfer applications.

CONTROL VALVES

Safety and isolation valves should be used throughout the metering system. In any pumping system where there is one (1) pump and multiple flow meters, a digital or hydro-mechanical. Rate-of-Flow control valve must be used at each flow meter to prevent over speeding of the flow meters.

METER ORIENTATION



METER A

Meter assembly with register (standard)



METER B

Meter assembly less register



METER C

Meter assembly and drive coupler for use with electronic registration



METER D

Meter assembly with 100:1 pulse transmitter and cover mount pulser adapter

PRODUCT RANGE



TCS Meters: suitable for use with a fuel management system



700-15

Flow Capacity:
5 to 60 GPM (19 to 227 LPM)

Meter Type:
SP, SPA, IC & IP

Flange Size:
1-1/2", optional 1" or 2"



700-20/25

Flow Capacity:
700-20 : 38-380 LPM
700-25: 38-567 LPM

Meter Type:
SP, SPA, SPD, LP, IC, IP, AF & SS

Flange Size:
2", optional 1-1/2"



700-30/35

Flow Capacity:
700-30 : 76-760 LPM
700-35: 76- 1135 LPM

Meter Type:
SP, SPA, SPD, IC, IP & AF

Flange Size:
3", optional 2"



700-40/45

Flow Capacity:
700-40 : 151-1893 LPM
700-45: 151-2271 LPM

Meter Type:
SP, SPA, SPD, IC, IP & AF

Flange Size:
4", optional 3"

COMPLEMENTARY PRODUCTS



Veeder-Root is the leading manufacturer of Meter Registration products throughout the world, now with the Electronic Registration EMR3.

The 7887 Meter Register totalizes and displays high speed deliveries and transactions in large, 3/4" easy-to-read figures. Displays a 5 digit resettable and 8 digit non-resettable totalizer.

Meter Register and Ticket Printer combine to produce clean, detailed printed records of high-speed fluid deliveries and transactions.

Tray switch prevents a pump or valve from turning on until the register counter has been reset. Also used for resetting external digital displays after a transaction is finalized.

The Meter Register and Preset Counter provide automatic preset batch control. The control function will shut-off (2-stage) when predetermined quantity is delivered.

The Micro Switch assembly has two double chamber internal switches to provide Full Flow, Low Flow and Off Control for the 7889 preset counters.

The dry reed (1:1 or 10:1) and solid state (100:1) pulse transmitters provide fast and accurate signaling for remote indication, totalizing and data monitoring systems.

This swivel adaptor allows the register to be rotated to any desired angle before delivery or while meter is operating.

747 BULK AIR ELIMINATOR



The Total Control Systems 747 Bulk Air Eliminator removes large quantities of air and is essential for the accurate measurement of bulk liquids and for protection of the meter whenever the possibility of air exists.

This unit is designed with dual air elimination heads providing twice the normal venting capability.

The TCS 747 is ideally suited for the Agricultural, Aviation, Chemical and Petroleum bulk metering applications.

FEATURES

- Dual air eliminating heads Air eliminator available in SP, SPD, IP & SS Types.
- Proven & Reliable Design
- Standard 4" ANSI RF Flanged Connection
- Flow Rates Up To 750 GPM (2840 LPM)
- Pressure Rating is 150 PSI (10.5 BAR)